Durham University

Durham E-Theses

The economic geography of recession in the UK : the early 1980s and historical perspectives.

Colin Stamford Crouch

How to cite:

Crouch, Colin Stamford (1989) The economic geography of recession in the UK : the early 1980s and historical perspectives. Doctoral thesis, Durham University.

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a https://etheses.durham.ac.uk/id/eprint/950/ is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the full Durham E-Theses policy for further details.

Academic Support Office, The Palatine Centre, Durham University, Stockton Road, Durham, DH1 3LE
e-mail: e-theses.admin@durham.ac.uk Tel: +44 0191 334 6107
https://etheses.durham.ac.uk

Abstract

This thesis presents an analysis of slump in the U.K. economy, with the main attention given to the early 1980s. The slump is seen not as an isolated incident but as the culmination of a series of severe recessions; after the slump a prolonged phase of steady growth and rising employment is normal. This particular interpretation of slump is at the centre of a re-examination of the concept of a 50 year Kondratieff cycle in the economy. Investigation of this cycle is based not on the usual method of trying to find broad empirical regularities in economic time series, but rather on attempting to find what types of economic conditions logically follow on from other types of economic condition over a long time span. The attempt is made to reinterpret British economic history from 1815 to the present using this framework of analysis, a task involving synthesis and reinterpretation of existing accounts, supported by statistical material on national income, employment and unemployment.

A closer examination is made of spatial patterns of employment change and of unemployment in Britain from the First World War to date, using primarily officially published annual statistics on employment, and monthly statistics on unemployment. Attention is concentrated mainly on phases of downswing in the long cycle (1918-1932, 1966-1983), with detailed attention being given, with the help of unpublished Census of Employment statistics, to the period from 1971 to 1981, although there is also a comparative examination of spatial labour markets during periods of upswing, both with less than full employment (1932-39), and with full employment (1945-66). An attempt is also made to clarify the confused question of the geography of production and employment prior to 1914. In this "geographical" part of the work attention is given to a detailed unravelling of core-periphery distinctions in the British economy, at both the urban-rural scale and the north-south scale. It is hoped by concentrating attention on single year change to identify the precise economic conditions under which significant reorientations of the space economy take place (with, most importantly, a very sharp distinction being drawn between slump and post-slump periods) thereby avoiding overgeneralised pictures derived from the comparison of distant points in time.

(Colin Crouch, 1989, *The Economic Geography of Recession in the UK; the early 1980s and historical perspectives;* Durham University PhD thesis).

The Economic Geography of Recession in the UK;

the early 1980s and historical perspectives

(3 volumes, this being volume 1)

by Colin Stamford Crouch

Submitted in 1989 for the degree of PhD at the University of Durham (Department of Geography).

The copyright of this thesis rests with the author. No quotation from it should be published without his prior written consent and information derived from it should be acknowledged.

- 6 JUN 1990

Contents

The Economic Geography of Recession in the UK; the early 1980s and historical perspectives

Volume 1

1. Introduction (90pp)

2. The Industrial Long Cycle (144pp)

3. UK Regional Economic Change; Data Sources and Methods of Analysis (77pp)

4. The Economic Geography of Britain Between the Wars (115pp)

Volume 2

5. The Post War Period; Full Employment and Accumulating Unemployment (105pp)

6. The Economic Geography of Downswing, 1966-1979 (234pp)

7. The Slump and After; the UK Since 1979 (139pp)

Volume 3

8. The Census of Employment; 1978 and 1981 (180pp)

9. Pre-1914 Origins of the Regional Problem (130pp)

10. Conclusions (31pp)

Appendix tables

Bibliography

Volume 1

		page
1.	*Introduction*	1
	1.1 Content of the Thesis	1
	1.2 Interpreting the Slump	7
	1.3 The UK Experience; an Outline of the Literature	12
	(i) British Economic Development After 1914	13
	(ii) British Economic Development Up To 1914	19
	(iii) The Regional Problem in Britain	21
	1.4 Some Questions of Economic Theory	34
	1.5 Myrdal and the Question of Cumulative Causation	48
	Notes to chapter 1	55
2.	*The Industrial Long Cycle*	91
	2.1 Some Outlines of the Long Cycle	91
	2.2 Kondratieff and the Question of Endogeneity	101
	2.3 The Long Cycle: Some Basic Explanations	106
	2.4 Constructive and Degenerative Business Cycles	116
	2.5 The Record of Economic Growth in Major Capitalist Economies	122
	(i) The Use of National Income Statistics	122
	(ii) The Question of Wars	127
	(iii) The Post-war Boom and its Demise	132
	2.6 19th Century Long Cycles	135
	(i) The Basic Form of the Long Cycle	135
	(ii) 1870-1914	136
	(iii) 1815-1870	143
	2.7 Innovation, Enterprise Investment and the Long Cycle	150
	2.8 Prices and the Long Cycle	168
	2.9 Before the Industrial Long Cycle	178
	Tables 2.1 to 2.14	181
	Notes to Chapter 2	197
	Figs 2.1 to 2.8	227
3.	*U.K. Regional Economic Change: data sources and methods of Analysis*	235
	3.1 Introduction: the Definition of Regions	235
	3.2 Key Labour Market Indicators	240
	3.3 The Internal Distribution of Population, 1801-1981	244
	3.4 Data on Regional Employment Change	250
	3.5 Unemployment; National and Regional Unemployment Rates	259
	3.6 Index of Regional Inequalities in Unemployment	269

		Page
	Tables 3.1 to 3.18	277
	Notes to chapter 3	294
4.	*The Economic Geography of Britain Between the Wars*	312
4.1	Introduction; the Inter-War Period in Context	312
4.2	Downswing, 1918-1929	321
	(i) 1918-1922	321
	(ii) 1922-1929	328
4.3	The Slump, 1929-1933	338
	(i) An Outline of the Geography of Slump	338
	(ii) A Shift-Share Analysis, 1929-32	344
	(iii) The Accumulation of Unemployment at Various Stages of the Slump	349
4.4	Recovery, 1932-1939	354
	(i) Patterns of Employment Growth	354
	(ii) Patterns of Unemployment Decline	362
4.5	Conclusions	369
	Tables 4.1 to 4.34	372
	Notes to chapter 4	405
	Figs 4.1 to 4.6	

Volume 2

		Page
5.	*The Post-War Period; Full Employment and Accumulating Unemployment*	1
	5.1 Introduction	1
	5.2 Regional Employment Change During the Upswing	6
	(i) The Continuity Thesis	6
	(ii) The Changing Geography of Employment, 1951-1961	10
	5.3 Regional Policy in Post-War Britain	15
	5.4 Regional Unemployment Rates: Upswing and Downswing	27
	(i) Introduction	27
	(ii) Regional Unemployment Rates at Full Employment	29
	(iii) The Regional Accumulation of Unemployment During the Downswing	35
	5.5 The Accumulation of Unemployment by Region	43
	(a) Southern England	43
	(b) The West Midlands	44
	(c) Yorkshire and Humberside	48
	(d) The North West	49
	(e) The Specialised Coalfield Regions; North East England and Wales	55
	(f) Scotland	58
	(g) Northern Ireland	62
	(h) Local Unemployment Rates in the Post-War Period; A Summary	64
	Tables 5.1 to 5.19	66
	Notes to Chapter 5	82
6.	*The Economic Geography of Downswing, 1966-1979*	106
	6.1 Introduction	106
	6.2 1966-1972; Main Trends	109
	6.3 The 1966-68 Recession; Patterns of Industrial Job Loss	112
	(i) The "old, declining industries"; Coal and Textiles	115
	(ii) The Vehicles Industry	117
	(iii) The Engineering and Electrical Sectors	121
	(iv) Construction, 1966-1970	124
	(v) 1966-68; other industries, summary	127
	6.4 Slow Recovery; 1968-70	128
	(i) Industrial Employment Change by Region, 1968-69	130
	(ii) Manufacturing Employment Change by Region, 1969-70	134
	(iii) A Note on Longer Term Employment Trends	138

		Page
6.5	Recession, 1970-72	142
	(i) Introduction	142
	(ii) Manufacturing Employment Change by Region, 1970-71	146
	(iii) Manufacturing Employment Change by Region, 1971-72	149
	(a) London and the South East	150
	(b) Mechanical engineering	153
	(c) Other industries	155
6.6	Recovery and Reflation, 1972-74	157
	(i) The View From London	160
	(ii) The View From the Industrial Periphery	164
6.7	Intense Recession, 1974-76	167
	(i) Recession in Electrical Engineering, 1974-76	170
	(ii) The West Midlands	175
	(iii) Scotland	179
	(iv) Wales	181
	(v) The Northern Region	185
	(vi) The Inner Periphery	188
	(vii) London	191
	(viii) 1974-76; Summary	192
6.8	Uncertain Recovery, 1976-79	193
	(i) Manufacturing Recovery 1976-77; General Patterns	195
	(ii) The Northern Region, 1976-77	196
	(iii) The North West, 1976-77	199
	(iv) Other Regions, 1976-77	202
	(v) 1977-78; Prelude to a Geography of Slump?	207
	(vi) London and Southern England, 1977-78	209
	(vii) The Midlands and Inner Periphery, 1977-78	212
	(viii) The Outer Periphery, 1977-78	215
6.9	Employment Change in the Service Sector During the Downswing	219
6.10	Conclusions; 1945-1979	230
	Tables 6.1 to 6.59	237
	Figure 6.1	300
	Notes to chapter 6	301
7.	*The Slump and After; the UK Since 1979*	340
7.1	Introduction and Major Outlines	340
7.2	The Accumulation of Unemployment During the Slump: General Patterns	348
7.3	The Industrial Economy in the Slump	357
7.4	The Beginnings of Slump: 1979 to mid-1980	370

		Page
7.5	Full Slump; Late 1980	376
	(i) Summer 1980	378
	(a) Wales	378
	(b) The West Midlands	380
	(c) Scotland	383
	(d) Other regions	384
	(ii) Autumn 1980	386
7.6	Full Slump; Early 1981	389
7.7	The Late Slump and Beyond	394
	(i) The Second Half of 1981	396
	(ii) 1982 and After	398
7.8	The Accumulation of Unemployment in the Slump as a Whole	406
	Tables 7.1 to 7.24	410
	Notes to chapter 7	435
	Figures 7.1 to 7.7	466

Volume 3

		Page
8.	*The Census of Employment; 1978 and 1981*	1
	8.1 Introduction	1
	8.2 An Outline Classification of Counties Based on Response to Slump	7 7
	(i) Method of Analysis	7
	(ii) Detailed Structures in the Classification	12
	(a) Group 1	12
	(b) Groups 2, 3 and 4	14
	(c) Group 5	16
	(d) Summary	17
	8.3 Steel counties of Groups 1a and 1c	19
	(i) Industrial Job Losses	19
	(ii) Multiplier effects	25
	8.4 Groups 1a, 1c and 1d - Non-Steel Counties	31
	8.5 Four Peripheral Conurbations: Merseyside, Tyne and Wear, Strathclyde and Greater Manchester	40
	8.6 Group 2 and Group 4 counties	50
	(a) Group 2b Counties; Favourable Differential Shifts in Manufacturing	52
	(b) Group 2a Counties	55
	(c) Group 4 Counties	
	8.7 The Service-Based Conurbations; London, Edinburgh, Cardiff and Bristol	64
	(a) The Nature of a Core Economy	64
	(b) London	67
	(c) Avon, South Glamorgan, Lothians	72
	8.8 Southern England	75
	8.9 Scotland, and Rural Northern England	86
	8.10 Conclusion; the Geography of Slump	93
	Tables 8.1 to 8.28	105
	Notes to Chapter 8	134
	Figure 8.1	180
9.	*Pre-1914 Origins of the Regional Problem*	181
	9.1 Introduction	181
	9.2 Geographical Patterns of Migration Before 1914	188
	9.3 The Geography of Wealth and Prosperity; Some Basic Issues	200
	9.4 Elements of Regional Class Structure in the 19th Century	208

		Page
9.5	The London Labour Market and the Question of Unemployment Prior to 1914	214
	(i) An Overview of the Problem	214
	(ii) How Not to Study pre-1914 Unemployment Rates; A Recent Case Study	227
9.6	Coal; Unbalanced Expansion of a Key Industry	235
9.7	Summary	244
9.8	Climatic Change and 19th Century Economic History	248
	Tables 9.1 to 9.16	254
	Notes to Chapter 9	268
	Figures 9.1 to 9.5	306
10.	*Conclusions*	311
10.1	On the Methodology of Conclusions	311
10.2	Changes in the British Regional System	314
10.3	Future Directions For Research	324
10.4	Full Employment in a Free Society?	331
	Appendix Tables A.1 to A.10	342
	Bibliography	387

Tables and Figures

Chapter 1 No tables or figures.

Chapter 2 Tables (pp.181-196).

2.1 Annual Growth Rates in Four Major Industrial Economies, 1830-1984
2.2 Economic Growth in a Post-Slump Recovery; International Comparisons, 1932-1937
2.3 Sequences of Business Cycles in the UK, 1881-1982
2.4 Years in which U.K. GDP and GNP Growth Rates differed by 0.4 percentage points or more, 1870-1913
2.5 GDP Annual Changes on Five Measures, U.K. 1920-1938
2.6 International Unemployment Rates in the Post-1979 Slump
2.7 The Decline of Unemployment, 1932-1951; advanced capitalist economies
2.8 The Return to Full Employment, 1932-1951, in two non-combatant countries, Sweden and Switzerland
2.9 The Post-1843 Long Cycle; some characteristics of growth
2.10 Main Price Movements, 1870-1914
2.11 Cyclical Movements in British Industry and Agriculture, 1815-1830
2.12 The Railway Boom of the 1840s; some key statistics
2.13 The Timing of Major Innovations, 1830-1940, according to Mensch
2.14 Medium Term Growth Rates in Three Major Economies, 1870-1911
2.15 The Acceleration of Productivity Growth in the Post-War Long Boom

Figures (pp.227-234)

2.1 The Long Cycle; the basic form
2.2 Economic Growth and the Rate of Basic Innovation, 1830-1940
2.3 The Diffusion of Car Ownership, U.K. and U.S.A., 1900-1983
2.4 The Rate of Radical Innovation in Post-War U.K. Industry after Freeman, Clark and Soete 1982.
2.5 Inflation and Unemployment in the U.K., 1966-1984.
2.6 Long Term Price Shifts in the U.K.
2.7 The Disintegration of the Phillips Curve
2.8 British Foreign Trade in the 18th Century

Chapter 3 Tables (pp.277-293)

3.1 Unemployment Levels and Inter-Censal Population Changes in North West England, 1971-1981
3.2 Unemployment Levels and Inter-Censal Population Changes in Great Britain, 1971-1981
3.3 Population Levels in Ireland, 1821-1911
3.4 The Distribution of the Population of Great Britain; North, Midlands, South, 1801-1981
3.5 Measured Employment Change by Region, 1841-1911
3.6 Employment Growth by Region, 1851-71 and 1871-1911
3.7 Number of Insured Employees (Employed plus Unemployed) 1923-1935
3.8 Employment East of the Pennines, 1929-1936
3.9 A Comparison Between Figures for the Annual Rate of Employment Change in the UK, According to Beck (1951) and the *Historical Abstract*
3.10 Changes in Numbers of Employees in Employment by Region in Great Britain, June 1978 to September 1981; Census of Employment and Unrevised Quarterly Estimates
3.11 Unemployment Between the Wars; Feinstein's Estimates

3.12 Male and Female Unemployment Rates, Selected European Countries, 1984 average
3.13 Changes in the Size of the UK Workforce, 1971-1980
3.14 Estimates of Increments in Concealed Unemployment, 1979-1984
3.15 Male and Female Employment, 1979-1984
3.16 Unemployment Estimates, 1979-1984, Allowing for Concealed Unemployment
3.17 UK Unemployment Rates, 1921-1938 and 1966-1984 on an Attempted Comparable Basis
3.18 Measures of Regional Unemployment Inequality at Different Levels of Regionalisation (hypothetical example)

Figures (pp.308-311)

3.1 The North-South Distribution of Population in Great Britain, 1801-1981
3.2 Annual Rates of Employment Change, North and South, 1923-1988
3.3 The Size of Workforce in the UK, 1970-1984
3.4 The UK Birth Rate, 1918-1987

Chapter 4 Tables (pp.372-404)

4.1 Annual percentage employment change by region, 1923-1931 and 1931-1939
4.2 Index Rates for Employment in the Regions of Great Britain, 1929-1939, with (a) 1929 base (b) 1932 base
4.3 The Post-War "Boom" in the UK, 1918-1920; chief statistical indicators
4.4 Regional Unemployment Rates in Engineering, Selected Months, 1920-1922
4.5 Regional Unemployment Rates in Construction, Selected Months, 1920-1922
4.6 Male Unemployment by Industry, August 1922
4.7 Changes in Unemployment by Sector, 1921
4.8 Male and Female Employment in Engineering, Great Britain, 1914-22
4.9 Male Unemployment (August 1922) in Towns With Unusual Increases in the Male Population, 1911-1921
4.10 Employment Growth by Period, North, Midlands, South, 1923-1939
4.11 Annual Estimates of Net Inter-regional Migration 1923-1936
4.12 Employment figures for the Coal Mining Industry, 1922-1925
4.13 Regional employment figures in Coal Mining, 1924-25
4.14 Quantity of Work (Full Time Equivalents) in Coal Mining by Region, 1924-25
4.15 European Output of Hard Coal, 1922-1925
4.16 Changes in Coal Mining Employment and Changes in Unemployment by Region, 1924-25
4.17 Coal Mining Employment as a Proportion of Total Employment; 1921, Selected Areas
4.18 Annual Employment Change by Sector, 1929-1933
4.19 Employment Change and Unemployment Rates by County, 1929-1932
4.20 Employment and Unemployment in the Lancashire Cotton Industry 1929-33
4.21 A Shift-Share Analysis of Regional Employment Change in 30 Sectors, June 1929-June 1932 (Summary)
4.22 A Shift-Share Analysis of Employment Change by Region, 1929-1932, with the Effects of Employment Change in Coal Mining Excluded
4.23 Regional Unemployment Increases During Various Phases of the 1929-33 Slump
4.24 Employment Growth by Region, 1932-1939
4.25 New Factory Opening by Region, 1932-1937

4.26 Employment Growth by County, 1932-1937
4.27 Post-Slump Employment Change in Southern England, 1931-1937
4.28 Post-Slump Employment Change in the Midlands, 1931-1937
4.29 Employment by Region in the Construction and Repair of Motor Vehicles, Cycles, and Aircraft, 1932-1939
4.30 Post-Slump Employment Change in the Peripheral Regions, 1931-1937
4.31 Employment Growth by Year, Counties in Peripheral Regions, 1931-1937
4.32 Key Labour Market Statistics by County, 1932 and 1937
4.33 Depletion Rates through Migration of Surplus Labour in the Periphery, 1932-1937
4.34 Employment and Unemployment Change in the Most Depressed Counties, 1936-37

Figures (pp.421-426)

4.1 Changes in Employment and Unemployment by County, 1929-1932
4.2 Unemployment Rates by County, June 1932 and June 1933
4.3 Unemployment Rates by County, June 1933 and June 1934
4.4 Unemployment Rates by County, June 1934 and June 1935
4.5 Unemployment Rates by County, June 1935 and June 1936
4.6 Unemployment Rates by County, June 1936 and June 1937

Chapter 5 Tables (pp.66-81)

5.1 Rates of Employment Growth in the North, Midlands and South During the Long Cycle Upswing, 1932-1939 and 1948-1963
5.2 Annual Rates of Employment Growth by Region, 1948-1963
5.3 Regional Employment Changes During Cyclical Downswings 1952-1963 (Annual Averages)
5.4 Regional Employment Changes During Cyclical Upswings 1952-1963 (Annual Averages)
5.5 Annual Rates of Employment Change, North, Midlands and South, 1932-1939, subdivided by periods
5.6 Comparison of Rates of Employment Change in the North, Midlands and South, in Three Cyclical Upswings, 1933-1961
5.7 Percentage Change in Employment by County, 1951-1961
5.8 The Decline of Employment in Coal Mining, Textiles and Shipbuilding, 1948-1966
5.9 Net Internal Migration of the Workforce by Region, Great Britain 1954-1966
5.10 The Break in Regional Employment Trends: Changes in Employment by Region, 1951-63 and 1963-1972
5.11 Gross Fixed Investment in New Building and Works in Manufacturing Industry, 1955-1984
5.12 Migration Quotients by Region, 1954-1966
5.13 Regional Unemployment Rates, Cyclical Peaks and Troughs, 1948-1968
5.14 The Cyclical Conditions for Emigration from the Outer Periphery, 1954-66
5.15 Employment Change and Unemployment Change by Region, 1972-73
5.16 The Regional Accumulation of Unemployment During the Long Cycle Downswing, 1966-1982
5.17 Rates of Natural Increase of Population by Region 1961-1984
5.18 Unemployment Rates in the Main Northern Cities, 1966-1979
5.19 Employment Change by Conurbation, 1973-1979

No figures in chapter 5

Chapter 6 Tables (pp.237-299)

6.1 Employment Change by Region, 1966-1978 (annual figures)
6.2 Industrial Employment Change by Region, 1966-67
6.3 Industrial Employment Change by Region, 1967-68
6.4 Industrial Employment Change by Region, 1968-69
6.5 Industrial Employment Change by Region, 1969-1970
6.6 Industrial Employment Change by Region, 1970-71
6.7 Industrial Employment Change by Region, 1971-72
6.8 Employees in Employment in Manufacturing, Construction and Coal Mining 1923-1987
6.9 Sectoral Composition of Manufacturing Job Loss, 1966-67, Selected Regions
6.10 Employment Change in the Vehicles Industry by Region, 1966-68
6.11 Employment Change in Mechanical Engineering by Region, 1966-1968
6.12 Employment Change in Instrument and Electrical Engineering by Region, 1966-68
6.13 Employment in Construction by Region, 1966 and 1970
6.14 Employment Changes in Recessions and Recoveries, 1948-1967
6.15 Sectors of Manufacturing Employment Decline in the South East, the South West and the North West, 1968-69
6.16 Employment Change in the Engineering Sectors by Region 1968-69
6.17 Sectors of Manufacturing Employment Growth, Selected Regions, 1968-69
6.18 Major Shifts in Manufacturing Employment by Region, the Outer Periphery 1969-70
6.19 Major Shifts in Manufacturing Employment by Region, Southern England 1969-70
6.20 Changes in Employment by Region in Three Declining Manufacturing Sectors, 1969-70
6.21 Employment Change by Region in Electrical Engineering and Aerospace, 1969-70
6.22 Employment Change by Region, 1966-1976 (total period)
6.23 Manufacturing Employment Change by Sector, 1970-72, United Kingdom
6.24 Change in Employment by Region in Three Declining Manufacturing Sectors, 1970-71
6.25 Manufacturing Job Loss in Regions of High Job Loss (WM, NW, SE, Sc) 1971-72
6.26 Manufacturing Employment Change in London, 1971-72
6.27 Manufacturing Employment Change in Greater London, 1971-77
6.28 Components of Change; Manufacturing Employment, Greater London, 1966-74
6.29 Manufacturing Employment Change in the Conurbations, 1971-78
6.30 Manufacturing Employment Change by Region, Sectoral Composition, 1971-72
6.31 Employment in the Periphery in the Mechanical Engineering Sector, 1971-72
6.32 Industrial Employment Change by Region, 1972-73
6.33 Industrial Employment Change by Region, 1973-74
6.34 Manufacturing Employment Change in Greater London, 1972-74
6.35 Private Sector Housing Land Prices by Region, England and Wales, 1972-74
6.36 Manufacturing Employment Growth by Types of County, 1972-73
6.37 The Structure of Manufacturing Employment, The South Wales "Regional Policy Belt" 1972-74
6.38 The Structure of Manufacturing Employment, Northern Region, 1972-74
6.39 Manufacturing Employment Change by Sector, UK, 1974-76
6.40 Industrial Employment Change by Region, 1974-75

6.41 Industrial Employment Change by Region, 1975-76
6.42 Employment Change by Region in Electrical Engineering, 1974-76 and Earlier Trends
6.43 Manufacturing Employment Change by County in the West Midlands, 1974-76
6.44 Manufacturing Employment Decline in the West Midlands Industrial Conurbation (Metropolitan County and Warwickshire combined) 1974-76
6.45 Employment Change in the Vehicles Sector by County 1974-76
6.46 Manufacturing Job Loss, Aggregate Figures, Scottish Regions, 1974-76
6.47 Manufacturing Employment Change, Wales and the Northern Region, 1959-1981
6.48 Manufacturing Employment Decline in Wales, 1974-76; aggregate figures by County
6.49 Manufacturing Employment Change in the Northern Region, 1972-76
6.50 Manufacturing Employment Change in Cleveland and Tyne and Wear 1974-76
6.51 Manufacturing Employment Decline by County, the North West and Yorkshire and Humberside, 1974-76
6.52 Industrial Employment Change by Region 1976-77
6.53 Industrial Employment Change by Region 1977-78
6.54 Manufacturing Employment Change by County, 1976-78, the Northern Region
6.55 Manufacturing Job Loss and Employment Growth by Minimum List Heading, Counties in North East England, 1976-77
6.56 Manufacturing Job Loss and Employment Growth by Minimum List Heading, Counties in the North West Region, 1976-77
6.57 Employment in Companies Wholly Related to the North Sea Oil Industry 1973-1985
6.58 Manufacturing Job Loss and Employment Growth by Minimum List Heading, Counties in North East England, 1977-78
6.59 Employment Change in the Service Sector, 1948-1987

Figure 6.1 (p.300)

Employment Change in the Service Sector, 1948-1984

Chapter 7 Tables (pp.410-434)

7.1 Forecasts and Outturns of Unemployment in the Early 1980s
7.2 The Phases of Slump, 1929-1937 and 1979-1988
7.3 Travel to Work Areas in Great Britain with over 8½% Unemployment, June 1979
7.4 Changes in Employment and Unemployment by County, June 1978 to September 1981
7.5 Profiles of Unemployment Following a Major Job Loss; Three Steel Closure Towns 1980-81
7.6 Increases in Unemployment by Region, 1979-1983
7.7 Changes in Employment by Industry, Production Industries, 1979-83 (Estimates)
7.8 Employment Change in Production Industries by Region, Quarterly Estimates, 1979-1985
7.9 Person Week Equivalents Worked in Manufacturing Industry, 1979-1983 (Great Britain)
7.10 Quarterly Rates of Decline in Manufacturing Work, Great Britain, 1979-1983
7.11 Employment Profiles in the "Early Shock" Industries, 1973-1983
7.12 Changes in Output, Employment and Output per Head, by Broad Industry Sector, 1979-1981

7.13 Rates of Redundancy by Region, 1977-1984
7.14 Key Indicators in the Construction Industry, Great Britain, 1978-1982
7.15 Changes in Employment and Output in the Motor Vehicles Industry, 1979-1983
7.16 Jobs Lost in Production Industries, September 1980 to March 1981
7.17 Increases in Unemployment by Travel to Work Area, County Durham and Cleveland, September 1980 to December 1980
7.18 Seasonal Variability of Unemployment in Conurbations in a Pre-Slump Year, 1978-79
7.19 Industrial Job Loss During 1981
7.20 Employment Change in Production Industries by Region, Annual Estimates, 1979-1985
7.21 Unemployment in London and the South East, Annual Averages, 1976-1984
7.22 The Effects of Various Changes in Measuring Unemployment on the Unemployment Rates of Various Counties, 1982-1985
7.23 Economic Growth Rates, Quarterly Figures, 1982-1985
7.24 Changes in the Unemployment Rate by County, 1979-1985

Figures (pp.466-473)

7.1 UK unemployment rates during post-1966 business cycles
7.2 Unemployment rates in two slumps; the 1930s and the 1980s
7.3 Changes in employment and unemployment by county, 1978-81
7.4 Changes in unemployment by county (histograms) for short periods, 1979-1985
7.5 Changes in unemployment by county (histogram) for 1979-85, taken as a whole
7.6 Industrial Output and Employment, 1979-1983
7.7 Industrial Employment and Productivity (two measures) 1978-1983

Chapter 8 Tables (pp.105-133)

8.1 Official Estimates of Numbers of UK Employees in Employment, June 1978 to September 1981, before and after publication of the 1981 Census of Employment
8.2 Author's Own Estimate of Number of UK Employees in Employment, June 1978 to June 1981, Calibrated Using Changes in the Unemployment Rate
8.3 Total Employment Change by County, 1978-81, as Percentage of 1978 Employment; a Shift-Share Analysis
8.4 Changes in Employment by County, 1977-81, for Counties with Increases in Employment Between 1978 and 1981
8.5 A Five Category Grouping of Counties According to Response to Slump
8.6 Unweighted Average Shifts for the Five Groups of Counties Shown in Table 8.5
8.7 A Shift-Share Analysis of Employment Change by County, 1978-81, Subdivided into 16 Groups
8.8 Shift-Share Analysis of Employment Change by 16 Sub-Groups, 1978-81 (Unweighted averages)
8.9 Patterns of Employment Decline in Steel Counties, 1978-81
8.10 Industry-Service Multipliers in Towns with Major Job Losses in Steel, 1978-81
8.11 Industry-Service Multiplier by Region, 1978-81

8.12 Patterns of Employment Decline in Non-Steel Counties in Groups 1a and 1c, 1978-81
8.13 Major Industrial Job Losses in Mid Glamorgan, 1978-81
8.14 Manufacturing Jobs Created in South Wales, 1966-1975, by Firms New to the Area
8.15 Apparently Anomalous Differential Shifts in the Education Sector, 1978-81
8.16 Employment Change by County, 1978-1984
8.17 A Shift-Share Analysis of Employment Change in the Conurbations 1971-1978
8.18 A Shift-Share Analysis of Employment Change in Conurbational Subregions, 1959-1971
8.19 Elements of Manufacturing Employment Growth, Industrialised Counties, 1978-1981
8.20 Differential Shifts in Manufacturing, Industrial Britain
8.21 Manufacturing Employment Change by County 1978-1981
8.22 A Shift-Share Analysis of Southern England, Excluding Differential Shifts in the Educational Sector
8.23 Employment Change in the South of England, 1971-81
8.24 Employment Growth and Decline in London and Surrounds, 1978-81
8.25 Employment Growth and Decline in Manufacturing and Services in London and Surrounds, 1978-81
8.26 Differential Shifts in Employment Change in Scotland 1978-1981
8.27 Employment Changes in Scottish Rural Regions and in Various Combinations of Travel-to-Work Areas in the Rest of Britain, 1978-81
8.28 UK Balance of Payments, 1977-1988

Figure 8.1 (p.180)

Classification of Counties According to Degree and Structure of Job Loss (map)

Chapter 9 Tables (pp.254-267)

9.1 Population of the Main Urbanised Areas of Great Britain 1801-1881
9.2 Net Migration in England and Wales by Type of Town, 1841-1911
9.3 Major Changes in Net Migration Patterns Between 1871-81 and 1881-91, England and Wales
9.4 Net Migration to Colliery Districts, England and Wales, 1841-1911
9.5 Net Gains of Population by Migration in Eight Large Northern and Midland Cities, 1841-1911
9.6 Landed Wealth-Holders by Date of Death, 1809-1939
9.7 The Occupational Distribution of Non-Landed Millionaires and Half-Millionaires by Date of Death, 1809-1939
9.8 The Ratio Between the Number of Manufacturing Wealth Holders and Other Types of Wealth Holder, by Date of Death, 1809-1939
9.9 Number of Non-Landed Millionaires and Half-Millionaires by Geographical Origin and Date of Death, 1809-1939
9.10 Employment Structure in Major Centres of Urbanisation, 1881
9.11 Employment in Miscellaneous Services by Region, 1881 and 1911
9.12 The Place of Birth of the Populations of London and Main Extra-Metropolitan Suburbs, 1881 and 1891
9.13 Coal Production and Exports in the UK, 1873-1913
9.14 Productivity in Main UK Coalfields, 1873-1913
9.15 Employment in Coal Mines in Major Coalfields, 1886, 1913, 1924 and 1936
9.16 The Creation of Surplus Employment in the Coalfields, 1886-1913

Figures (pp.306-310)

9.1 Net Emigration from the UK, 1855-1938
9.2 Measures of Price, Physical Productivity and Revenue Productivity in the British Coal Industry, 1880-1913
9.3 Average Temperatures in Central England, 1680 to 1960 (from Manley 1964)
9.4 Longer Term Climatic Changes in the UK
9.5 Annual Average Temperatures in Central England, 1800 to 1939 (2-, 3- and 4- year moving averages)

Chapter 10 No Tables or Figures

Appendix Tables (pp.342-386)

A.1 Initials Used as Abbreviations for UK Regions in Text of Thesis
A.2 (includes figure) Approximate Composition of Regions, 1923-1985, in Department of Employment, etc., Statistics
A.3 The Distribution of Population of Great Britain Between Regions, 1701-1981 (percentage figures)
A.4 Number of Insured Employees in Employment, Mid-Year by Region, 1923-1988
A.5 Annual Percentage Employment Change by Region, 1923-1988
A.6 Annual Percentage Employment Change, North, Midlands, South, 1923-1988
A.7 Monthly Unemployment Rates by Region, 1912-1988
A.8 Index of Regional Unemployment Inequality, 1912-1988
A.9 Trade Union Unemployment Rates, 1851-1914
A.10 Increases in Unemployment by County, 1976-1985

The material contained in this thesis is solely the work of the author, and has not been previously submitted for a degree at Durham or any other University. The copyright of this thesis rests with the author. No quotation from it should be published without his written consnet and information derived from it should be acknowledged.

The funding of the early part of this research was from an SSRC studentship lasting for three years from October 1979. Without that funding the present work would never have been started, let alone finished. My particular thanks also to my mother for moral support and, where necessary, for financial assistance. Without this support the thesis might well have been finished, but not until well into the 1990s. I wish also to acknowledge the firm support of my father, who died in the early years of the research project.

Special thanks must go to Madeleine Hughes for her patience in typing this thesis in weekly instalments over a period of two years. Also to George and Joyce Schlesinger for providing a comfortable domestic atmosphere over a span of nearly five years.

My intellectual debts are many, but have been mainly via the medium of the written word rather than via the spoken word. Inevitably though my thanks must go to my supervisor, Alan Townsend, for facilitating access to information and for advice, even when, for good or bad reasons, this advice has not necessarily been taken.

1. Introduction

1.1 Content of the Thesis

The following dissertation presents an analysis of regional patterns of employment change in the United Kingdon, examining both the recent slump and earlier periods in an attempt to understand how particular sets of economic conditions influence inter-relationships between component parts of the space economy over the short, medium and long term. The primary aim of the research has been to gain a detailed understanding of the economic geography and historical structure of slump, and this task has been approached fairly directly in chapters 7 and 8 below. It is not possible, however, to understand the slump by examining only the slump; there are some very important questions of context which need to be considered. The most important of these questions are listed below.

(a) Why do slumps occur?

(b) How does the economic geography of the slump of the early 1980s differ from the economic geography of preceding non-slump periods?

and

(c) How does the economic geography of the slump of the early 1980s differ from the geography of earlier slumps, most particularly the slump of the early 1930s?

Each of these questions is itself highly complex, requiring detailed analysis of events in periods prior to the 1980s. The dissertation which follows is, as a result, considerably longer than is normal for a doctoral thesis, but it did not seem possible to do full justice to the complexity of the subject matter in any substantially shorter piece of work.

The question of why slumps occur is addressed in chapter 2 below, the argument of which was developed primarily in 1981 and 1982, with various modifications being made later. The work "slump" is used in a technical sense to mean the last and most severe recession in a series of unusually severe economic recessions. Following the slump, which is distinguished from other recessions by being both unusually long and exceptionally severe, it is generally to be found that there will be a prolonged period of fast and relatively smooth economic growth. The slump is thus a pivotal phase in economic history; before the slump there is a long period, lasting perhaps ten to fifteen years, of generally depressed economic

UNIV DUNELM

conditions, while after the slump there is a much more expansive period, lasting perhaps thirty years or thereabouts. If one calls the depressed pre-slump and slump phases the "downswing", and the post-slump period the "upswing", then one has identified the two arms of the so-called 50 year "long cycle".

The existence of this long cycle has been a matter of intermittent controversy for a long time, with proponents of the long cycle theory tending to suggest that empirical regularities in economic time series of the last 150 years are significant;[1] and opponents of the long cycle theory tending to suggest that any such seeming regularities are spurious, given the small number of alleged cycles under consideration.[2] The argument of chapter 2 below is based not on the traditional question of whether economic time series show sufficient significant regularities to indicate the existence of the long cycle, but rather on the question of identifying the *internal* structure of the long cycle. It is argued that there is a systematic succession of phases of economic growth, in which a slump is followed by a period of fairly vigorous economic recovery (less strongly marked in the mid-1980s than in earlier post-slump phases), which in turn is followed by a prolonged period of steady economic growth, which itself fades away into a period of slower economic growth with recessions tending to become successively more severe, with a slump representing the culminating phase of this series of recessions. The question of the existence or otherwise of the 50 year long cycle depends, it is suggested, on whether this succession of phases, this internal structure, can accurately be identified in the historical record over a prolonged period, rather than on whether certain major economic time series may be shown to incorporate a statistically significant 50 years periodicity.

It is perhaps to be expected that any theory of the long cycle developed in such unusual years as 1981 and 1982 would tend to emphasise the importance of the slump, but this emphasis still seems fully appropriate despite the passage of a few years of post-slump recovery. While chapter 2 is presented as a theory of the long cycle, it is equally a theory of slump; any adequate theory of the long cycle needs to incorporate a theory of slump, and vice versa. Without a theory of the long cycle, it would be difficult to indicate why slumps should occur at certain times, generally following a long phase of economic depression, and not at other times.

The theory of the long cycle provides an important framework

for the analysis of regional patterns of employment change, and of unemployment, in the United Kingdom in the 20th century. Chapters 3 to 8 attempt to build on this framework. The most convenient presentation of this work is for phases of economic change to be discussed in chronological order, even though this means that the discussion of the slump of the early 1980s, perhaps the central focus of research, is deferred to a late stage in the presentation. The late placing of the discussion of the 1980s slump means that it is possible to compare patterns of change in that slump with patterns of change in earlier periods without awkward cross-referencing to *later* chapters.

Chapter 3 sets the scene by collecting regional labour market data across long time spans, with the main tables connected with this chapter being presented in appendix form (Tables A1 to A10).

Chapter 4 presents an analysis of employment change in the turbulent inter-war years, during which time unemployment was generally high. It is shown that regional differences in the rate of employment change were extremely sharp in the downswing and slump phases prior to 1932, with the differences being most strongly marked in years of recession. There was fairly steady employment growth in Southern England, briefly checked by the slump, but there were occasional sharp falls in employment, particularly in coal mining and textiles, in the North of England, Wales and Scotland. These dynamic contrasts were to become far more muted after the slump, when industrial decline was halted and there was widespread expansion of employment across all regions. Behind the relative evenness of aggregate change, however, it is suggested that the growing dominance of newer industries in the South and Midlands secured a long-term advantage in these regions. Furthermore, while there was substantial employment growth in all regions after 1932, this growth was not nearly sufficient to absorb all the unemployment in the depressed regions, which had essentially been created prior to 1932. This led to a persistent problem of *long-term* unemployment, even though the general unemployment rate was falling.

Chapters 5 and 6 cover the post-war period, with chapter 5 discussing the "long boom" from the late 1940s to the mid-1960s, and also the patterns of accumulation of unemployment between 1966 and 1979, while chapter 6 examines in detail year to year patterns of employment change in the long cycle downswing from 1966 to 1978. In effect, chapter 5 asks what happened after the vigorous post-slump recovery of the mid-1930s, and in the earlier years after the Second

World War, while chapter 6 concentrates on the events closely preceding the post-1979 slump. Industrial employment grew steadily, though with cyclical fluctuations, between 1945 and 1966, but declined substantially after 1966. Perhaps the single most startling statistic of the post-1966 long cycle downswing was that industrial employment (including employment in mining and quarrying and construction) had declined from 12,000,000 to 7,000,000 between 1966 and the mid-1980s, with much of this decline taking place outside the slump.[3]

The geography of employment change since the mid-1960s has been extremely complicated. In the 1920s and the early 1930s one could suggest that the geography of employment decline reflected the spatial concentration of vulnerable industries in particular areas, but the overall geography of employment change since the mid-1960s represents a changing geography of employment within individual economic sectors as well as simply the employment decline in particular industries. A notable feature of the late 1960s and 1970s was a strong urban-rural shift in employment, with industrial employment tending to decline particularly sharply in large cities and to increase, often substantially, in less urbanised areas; the "greenfield" site became the favoured site for any industrial expansion because of relatively low costs (once start-up costs had been accounted for) and because of the greater flexibility of such unconstricted sites in allowing a wide variety of types of expansion.[4] In many respects the most favoured greenfield sites were in the prosperous parts of Southern England, close to London, but without London's exceptionally high costs. There was also significant expansion, encouraged by various regional policy subsidies, in the peripheral regions, but as chapter 6 shows, this expansion was often unstable, and "branch plants" set up in the peripheral regions were often vulnerable to job losses and closures in the highly adverse economic conditions from the mid-1970s onwards.

Chapters 7 and 8 consider the slump itself, with chapter 7 examining patterns of change at specific phases of the slump, and chapter 8 using the results of the 1978 and 1981 Censuses of Employment to examine detailed spatial patterns of employment change through some highly critical years. In every chapter of this thesis the material incorporated into the final version is considerably less than the total information collected; in no case is this more true than in the two chapters on the slump. Much of the early research work for this thesis was essentially based on keeping up

with events as they happened during the slump, with a continuing examination of spatial patterns of industrial job loss (as reported in the *Financial Times* and elsewhere) and changes in unemployment. Useful as this material was, it could provide only a partial picture of the geography of slump; it was not until 1984, when results of the 1981 Census of Employment became available, that a more detailed picture could be produced. Chapter 8 is very closely based on this data source, while chapter 7 has been extensively revised in order to make use of the information provided by the Census of Employment.

Throughout the period discussed in chapters 4 to 8, there has been a strong and persistent tendency for employment to grow more quickly in the "core" regions (Southern England and the Midlands) than in the "peripheral" regions (the rest of the UK). Furthermore, unemployment has persistently tended to be lower in Southern England than in the peripheral regions. This has not always been the case. Discussion of the sharp post-war recession of 1920-21 shows, for example, that whereas after the recession unemployment rates were lower in the core than the periphery, regional patterns of unemployment *before* this recession contrasted strongly; Southern England had relatively high rates of unemployment. Furthermore, one could hardly suppose that the great industrial cities of Northern England developed at a time when employment growth in the North lagged substantially behind employment growth in the South. There are thus some indications of a powerful "reversal of polarity". The growing Northern cities of the 19th century were to become the depressed conurbations of the late 20th century, while the distressed agricultural areas of Southern England in the 19th century were to become areas of fast economic growth in the late 20th century. Chapter 9 attempts to outline the economic geography of Britain before the "reversal of polarity" triggered off in the early 1920s. The central question, perhaps, is why the rapidly industrialising coalfield areas of the 19th century should become the depressed industrial areas of the 20th century. It is argued that the only consistent explanation is that coalfield industrialisation was a far less central component of the development of the British economy than the "visible" evidence of Northern industrialisation would suggest, and that during the 19th century as well as the 20th century, the London economy has been economically dominant, in terms of wealth creation if not necessarily in terms of job creation. The tendency towards a strong market orientation in the location of industry in the 20th century, even as early as the 1920s and before, indicates, it is

suggested, that the locus of economic advantage already lay in the South, and that the financial basis of Northern industrialisation was not sufficiently strong to provide a complete counterweight. The problems of the coalfield regions after 1918 were compounded, moreover, by the extent to which labour had been sucked into coal mining prior to 1914 as a result of a rising price of coal, and despite falling productivity. This created a peculiarly vulnerable structure of employment, and resulted in intense job losses when the market for coal shrank after the First World War. Intense unemployment in South Wales and North East England resulted.

1.2 Interpreting the Slump

Any analysis which attempts to keep up to date with economic events in the context of rapid economic change will inevitably be subject to changing perspectives as time passes, the direction of analysis quite often deviating considerably from any original stated intention.

The initial focus of attention, as specified in the terms of an SSRC postgraduate award starting in 1979, was on geographical patterns of industrial employment change in the post-1976 period, using as a basic source *Financial Times* press reports on major industrial employment cutbacks. From this point of departure, research could have proceeded in any of a number of directions, some of which would move on to uncharted territory, requiring new methods and dealing with new information, while others would involve using fairly traditional methods, such as interview programmes with corporations and/or unions, in order to provide insights into a new and rapidly changing situation. The choice of approach here was made on the basis of what to me seemed theoretically interesting, namely an examination of those longer-term economic-geographical structures which led to the slump having a spatially uneven rather than spatially even impact.

This theoretical inclination, however, went hand-in-hand with more pragmatic considerations. One of these was how to analyse a rapidly changing situation as efficiently as possible, trying to achieve the high level of research output needed to gain a broad overview without being overburdened with research practices which represent ineffective use of time. In particular, the question of building up a series of research interviews soon became problematic given that the gathering pace of recession made the information gained rapidly obsolescent. Thus, a series of interviews with head office management in ten manufacturing corporations was conducted in the period April-July 1980[5] at a time when job loss was particularly rapid, and it was found that at the end of this period a large majority of these firms had announced further factory closures or major redundancies. This led to the problem of deciding whether to update information, and if so, then how. Associated with this was the problem of how much to extend the coverage to other firms. The interview programme, originally based on attempting to gain interviews with all corporations involved in a major redundancy anywhere in the

country since 1976, *which also owned* a factory in the Northern Region with over 500 employees in 1973[6], would have covered over 50 firms by late Summer 1980 (when the first round of interviews had been assessed) and would probably have covered the complete target pool of 117 firms by late 1981, when it was planned to bring the interview programme to a close. Such a programme clearly proceeds from being ambitious to being effectively impossible. Emphasis therefore soon switched from research by interview towards a more theoretical and statistical approach, making considerable use of aggregate employment and unemployment data. By this time, however, the interviews with corporations and study of newspaper cuttings had provided important insights into the processes of change, with two strands clearly emerging.

Firstly, large numbers of cutbacks and closures had taken place in factories which had opened, often with regional policy aid, in the 1960s and early 1970s, and which were involved in the routine production of fairly standardised products in factories designed to meet rising demand. Research and development tended to be under-represented in such factories, which were thus of relatively low strategic importance to the firm. These factories and in turn the "assisted areas" of the UK, which were the main hosts to these factories, suffered disproportionately when economic growth contracted severely in the mid-1970s[7]. It was not uncommon to find factories which had opened in the last tremors of long boom expansion in the early 1970s, had failed to achieve anything like their projected employment and had closed down in the later 1970s or early 1980s.

Secondly there were many recorded instances of cutbacks in older plant within densely urbanised areas. Given the prevailing economic conditions this could not plausibly be attributed to a direct shift in industrial location from urban to greenfield areas, with explicit decisions being made to undertake major investment projects on new greenfield sites at the expense of older urban plant. An indirect effect might be hypothesised as important, however, with newer vintages of investment at existing "greenfield" sites being maintained more readily in slump conditions than older vintages of investment in urban locations. The interview programme when terminated had not reached the stage when such a hypothesis could be directly tested.

In addition to this, there was extremely rapid employment decline concentrated in a few weak sectors, some of which (e.g. steel, vehicles) were characterised by a large nationalised segment, while

the textile industry was characterised,overall, by major employment cutbacks in high wage countries and shifts of production to low wage countries in the third world. As far as the nationalised industries were concerned, the problem was probably not that of any alleged automatic inefficiency of nationalised concerns[8] but rather the joint problem that firstly, industries have historically tended to come under the nationalisation net primarily as a result of some form of pre-existing sectoral vulnerability;[9] a factor which remains important post-nationalisation, and secondly that it was a critical part of the incoming Conservative Government's economic strategy to reduce the role of the state in industry, with the result that rationalisations and job losses in nationalised industries were actively *encouraged* rather than discouraged. The extremely severe job losses in the steel industry at this time resulted from a combination of declining markets and a new-found commitment to reduce capacity sharply in British Steel.[10]

The pace of events in 1980, and the necessary existence of considerable time lags in setting up interviews with industrialists, created considerable difficulties in making an up to date analysis of the slump. Attention turned instead to the question of the accumulation of unemployment which resulted from industrial job loss on a large scale. It was recognised that this implied dealing with the *effects* rather than the *causes* of economic decline. As a result, the emphasis of research switched from explaining geographical patterns of job loss in terms of corporate industrial strategies in an unfavourable economic climate, to explaining the geography of unemployment in terms of geographical patterns of job loss.

There can be little doubt that there were strong and systematic spatial variations in the rate of increase of unemployment in 1980, although as chapter 7 below shows, these differences became less sharply pronounced in 1981. The peripheral regions (NW, YH, Wa, Sc, NI)[11] all tended to have higher than average rates of unemployment at the beginning of the slump, reflecting a greater than average degree of accumulation of unemployment in previous recessions, and also tended to have faster than average rates of increase of unemployment during the early part of the slump. In contrast, unemployment increased relatively slowly in Southern England, where unemployment had been low before the slump. In the West Midlands, however, unemployment increased sharply during the slump, even though the region could have been regarded, until relatively recently, as one of the more prosperous regions.[12]

What could not have been detected at the time was the extent to which the underlying patterns of employment change marked an even greater disparity in spatial economic trends than indicated by the unemployment figures. A basic "mental map" of recession evolved in which major cutbacks in employment in less favoured areas led to large increases in unemployment, while relatively small decreases in employment in the prosperous South (with possible increases in oil-based local economies in Scotland) led to relatively small increases in unemployment. When data for local employment became available in 1984 (for 1978 and 1981) it became clear that employment across large parts of the South of England (and also rural Scotland) had actually been increasing during the slump, with any increases in unemployment being due to natural demographic increase in the size of the workforce and, more importantly, to shifts in net migration patterns among the workforce. A closer recognition of the importance of such factors meant that the analysis of the geography of slump which developed after 1984 was in many ways considerably more sophisticated than the analysis made in 1980 and 1981.

Since this section is concerned mainly with discussing some of the research problems faced in analysing the slump, it is unnecessary for the present to discuss the evolution of the analysis of a more distant past contained in the research programme. A few notes on the effects of monetarist economic policy in the slump should be made, however, even though this topic is not examined in depth in later chapters.

Unemployment has risen by over 2,000,000 since the Conservative Party came to power in 1979, with the bulk of the rise taking place in 1980 and 1981. During 1981, the effects of slump were clearly international in scope, and indeed in some industrialised countries unemployment was rising faster than in Britain.[13] It would be inappropriate to blame monetarism, or the Conservative Government, for this round of job losses; severe recessions will cause severe job losses whichever political party is in power. 1980 is a different matter, however. Around a million jobs were lost *in advance of* the world slump.[14] Monetarist economic policy is an obvious culprit, and yet one would hardly expect a mere shift in economic policy to result in the loss of a million jobs in a year without some fundamental pre-existing weakness in the structure of the economy. It might well be suggested, for example, that a monetarist policy in the UK in the 1950s would probably have been little different in its effects from the Keynesian policies which were actually followed, yet under conditions in which Britain's "deindustrialisation" was already

a matter for serious concern,[15] a misconceived economic policy could have serious adverse effects.

There is a fundamental defect in the monetarist strategy which is clearly identifiable. The quantity theory of money states that

$$P = \frac{MV}{T}$$

Thus the price level, P, is equal to the volume of money, M, multiplied by the velocity of circulation of money, V, divided by the volume of transactions, T.[16] The basic monetarist thesis is that a policy induced change in the money supply will have a strong influence on the price level, with little autonomous effect on either the velocity of circulation or the volume of transactions. In accordance with this theory, the incoming Conservative Government introduced a severe monetary squeeze, which made money more expensive, thereby pushing up interest rates, in turn discouraging industrial investment. The problem with a monetary squeeze is that by a variety of routes it squeezes income, output, and, by extension, the volume of transactions.[17] This, as the algebraic identity above shows, places *upward* pressure on prices. The out-turn of events in 1980 was that instead of a monetary squeeze leaving output unaffected and reducing inflation, as the Government expected, there was a slump in which output fell sharply and prices rose sharply, with a rate of inflation touching 20%. The price level responded to the rate of change of output rather than to the rate of growth of the money supply. The later decline in the rate of inflation resulted, it would seem, not from monetarist policies finally being successful, as argued by the Conservative Government, but rather from the normal stabilisation of rates of output growth following a slump, which reduces the abnormal upward pressure on prices.

The economic tragedy of the early 1980s was that an incautious and mistaken economic policy was followed at precisely the conjuncture at which an incautious and mistaken economic policy would have the most damaging effects. As a result, unemployment by late 1982 was perhaps three-quarters of a million higher than it need have been. Furthermore, the absence of any coordinated policy to reduce unemployment has meant that over a period of several years opportunities to reduce unemployment by perhaps a million have been foregone. Unemployment is currently, in the late 1980s, nearly twice as high as it need have been, although even a figure for unemployment of 1½ to 2 million would still be, by historical standards, extremely high.

1.3 The UK Experience; An Outline of the Literature

It should be clear from even the brief outline so far that this thesis covers a wide range of topics in order to attempt to derive some reasonably coherent picture of British regional development in the long term, and how this is reflected in the economic geography of slump. Inevitably, large parts of the material have been presented in highly compressed form, with discussion of past historical periods tending to restrict itself to those aspects of economic change which are of central importance for the thesis being discussed. Such a skeletal presentation gives rise to obvious difficulties, the most serious from the writer's point of view being that there is the danger that significant misconceptions about any particular detailed topic will arise from the need to provide a broad overview. The detailed analysis of regional patterns of employment change in the 20th century, presented in chapters 3 to 8, has been tied as closely as possible to reliable published statistics, so that the problem of distortion through limited coverage should not arise. The problems are more acute in the historical discussions of the long cycle in chapter 2, and to a lesser extent in the discussion of 19th century labour markets in chapter 9. In chapter 9 the problem is one of poor data quality. Before the start of the Unemployment Insurance scheme, just before the First World War, there is no way of empirically deriving even approximate percentage unemployment rates for particular areas. In the one attempt which has recently been made to derive such percentages (Southall 1983, 1986) the rather far-fetched assumption is made that there was no real unemployment in existence outside the industrial sector, whether in rural areas or in the casual labour markets of London and other cities.

In chapter 2, the problem is that the analysis is, of necessity, at least partially speculative. The broad theoretical scheme appears first, and has to be filled in. This is a more risky method of analysis than painstakingly building up an overall picture from the accumulation of empirical details, but it is also a method which, if successful, is extremely effective in developing a broad perspective of events. Obviously, the attempt has been made, in chapter 2 and in all chapters, to eliminate logical inconsistencies, factual errors and untenable historical interpretations, but the usual disclaimers apply; responsibility for for any deficiencies in what is written lies solely with the author.

If what is written is necessarily, through reasons of compression, and other reasons, only a partial view of the subject, it is the writer's duty to the reader to provide outline information on some of the more comprehensive literature on particular subjects. Three main subject areas are to be reviewed: (i) British economic development after 1914; (ii) British economic development before 1914; (iii) Britain's economic geography.

(i) British economic development after 1914

The bulk of the current work is concerned with the U.K. economy since the First World War. Pollard (1969) provides probably the best and most reliable basic reference for the development of the British economy up to the mid-1960s, and provides a wealth of compressed detail. This work provides the clearest historical background against which the sketches of economic history in subsequent chapters may be placed. A revised edition of this work (Pollard 1983) was recently published, updating the coverage to the beginning of the 1980s, but at the expense of the abridgment of coverage of the early part of the period.

The period from 1918 to 1967 was of course economically far from homogeneous. The simplest picture is that the period between the wars (1918-1939) was dominated by high unemployment while the period from the end of the Second World War until the mid-1960s was dominated by full employment. There is thus an obvious temptation to discuss modern economic history in terms of a clearly identifiable "inter-war" economy and a separate "post-war" economy. Undoubtedly the Second World War marks a convenient break point in any historical narrative,[18] yet it is a point which needs to be strongly emphasised (chapters 2,5 below) that there is a high degree of continuity between the trends of the inter-war period and the trends of the post-war period. The steady expansion with full employment of the late 1940s and early 1950s is regarded as a logical successor to the fast growth with falling unemployment of the years between 1932 and 1939. In terms of economic trends, the real turning point was at the trough of the slump in 1932; before 1932 the predominant tendency was one of depression and rising unemployment, while after 1932 the economy was back on the long path to full employment. Not all authorities accept the interpretation of the inter-war years in terms of a sequence of "depression" and "recovery"; Alford (1972), for example, dissents, largely on the basis of the argument that there was nothing

particularly exceptional about the economic recovery of the 1930s. Clearly the question of what can, or cannot, be regarded as "exceptional" might well depend on fine shades of meaning. The treatment of the inter-war period as one of depression and recovery is now, perhaps, dominant; Aldcroft (1986) for example presents a sequence of a "chequered decade" (the 1920s) followed by "depression and financial crisis" (1929-32) and "recovery" (1932-1939).

In assessing the historiography of any past period, there is the problem that the writings about such a period reflect the fundamental economic concerns at the time at which the writer is writing at least as much as they reflect what was happening in the period being discussed. Inter-war Britain is no exception. Contemporaries were well aware of the extent of the problems of mass unemployment in the industrial areas,[19] problems which were far less significant in the years before 1914. This is the "traditional" view of the inter-war years. During the 1960s, however, the persistence of full employment made it far easier to see economic change in terms of continual progress, and a "revisionist" school of economic historians, led by Aldcroft and Richardson, attempted to interpret the inter-war years in terms of such progress. From a 1980s perspective, works such as Richardson (1967), Aldcroft and Richardson (1969) and Aldcroft (1970), while being undoubtedly important contributions, appear somewhat lacking in penetration. These works emphasise the technological developments of the period, and yet it is hardly a surprise that in a period of twenty years there should be technological progress. There is very little indication, moreover, in the "revisionist" works of any lurch towards economic crisis; more attention is given to measuring growth and fluctuations in economic activity than to measuring the depths of depression.[20]

As the economic optimism of the 1960s faded during the chequered decade of the 1970s and the depression of the early 1980s the plausibility of the revisionist thesis declined. More attention came to be given to the problem of indicating the lineaments of crisis in the inter-war years. This changing perspective is most strikingly illustrated in Aldcroft's more recent works (Aldcroft 1984, 1986) in which the problems of depression and unemployment move to the forefront.[21]

The period from 1932 to 1939 was, as emphasised by Richardson (1967), one of fast economic growth, but also one of high unemployment and sharpening political tensions. War broke out in 1939, and ended in 1945. The immediate post-war years were ones of considerable

social reform, maintained full employment and yet still considerable economic austerity, with severe balance of payments problems and pressures on sterling. Both Pollard (1969) and Aldcroft (1986) include the late pre-war years, the war period and the immediate post-war years in their surveys.

There is a vast literature on the post-war British economy, which cannot be detailed adequately in a brief survey such as this. Cairncross (1981) and Wright (1979) provide introductory texts,[22] without examining short periods in depth. There are however various surveys which provide detailed coverage of the British economy over relatively short time spans, and these may usefully be consulted for background information.

Worswick and Ady (1952) edited a volume covering the development of the British economy in the first five years after the War, and a subsequent volume (Worswick and Ady 1962) covered the 1950s. In addition, Dow (1964) edited a volume describing the development of economic policy during the years from 1945 to 1960. This was a period of full employment, steady growth and modest inflation, a "long boom".[23] There were undoubtedly considerable steering problems in the transition from war to peace, but "accustomed as we have become since the war to tales of economic crisis, the chart (of economic growth) may come as a shock. Above all, industrial production was rising with extraordinary steadiness at a rate of about 8 per cent per annum throughout the whole period (from 1945 to 1950)" (Worswick 1952 p.6). Once the various crises of the early post-war period had been overcome, a period of unusually smooth economic growth followed. Of course there were recessions[24] but these were relatively slight by earlier and later standards, and were sandwiched between periods of fast growth and full employment.

The period of full employment continued until the mid-1960s. Unemployment increased during the 1966-68 recession, as in previous recessions, but then failed to fall subtantially during the subsequent cyclical recovery. The period of full employment was at an end. Two questions need to be considered; firstly why there was full employment, and secondly why full employment came to a halt.

During the 1950s and 1960s, the conventional wisdom[25] in economics was that full employment had come about, and been maintained, as a result of Keynesian economic policies.[26] In retrospect, this proposition seems unconvincing, as substantial increases in unemployment came about when Keynesian policies were still being followed. It now seems more appropriate to regard full

employment as having been generated by a substantial investment boom. Matthews (1968) took this approach at an unusually early stage in a highly influential paper which provided an important corrective to the "simple Keynesian" view of events. The main difference, he argued, between the inter-war years of mass unemployment and the post-war years of full employment, was the unusually high rate of investment in post-war years compared with earlier years. There is little evidence that this high rate of investment was primarily generated by Government policy; instead, it would seem, high rates of investment and an acceleration of technical progress, resulted from the fact that there was already an economic boom in place, with the presence of spontaneously expansive economic conditions providing a stimulus to expansion in later years.

There can be little doubt that there was a powerful "long boom" in the UK, which was even stronger in other advanced industrial economies. There can be little doubt, either, that Keynesian economic policies were dominant during the long boom. It is unlikely, however, that the long boom was the *result* of Keynesian economic policies; the role of such policies was probably more to modify the form of the long boom than to create it.

Blackaby (1978), in a sequel to Dow's (1964) work, covered British economic policy in the more turbulent period from 1960 to 1974. The early part of this period was marked by a substantial economic boom, with full employment and unusually high growth rates, even in the context of the earlier post-war years. This boom was weaker than in other countries, however, and attention was given to the need to restructure the British economy in order to catch up with competitors. The commitment to planning and faster growth was a priority of the Conservative administration of the early 1960s,[27] but the Labour Government of 1964-70 had an even stronger commitment to "planning". A collection of essays edited by Beckermann (1972) sets out the economic policies followed by Labour during this period, and gives a very useful account of the thought behind the commitment to planning. Unfortunately, discussion of the out-turn of economic events is far more sparse than discussion of economic objectives.

The boom broke in the mid-1960s. Why this should have happened is not totally clear. The central feature, in the UK at least, was a decline in industrial employment, implying a deceleration in the industrial growth that had carried the boom previously. This leads to the need to consider questions of industrial investment and industrial output.

There are two aspects of the problem which need to be considered, the question of the macro-economic limits to investment, and the more specific question of damand saturation.

Matthews (1968) suggested that a large part of the reason behind the strength and duration of the post-war boom was that investment had, for a variety of reasons (depression, war,etc.) been unusually low in previous periods, creating a substantial backlog of investment opportunities. One can add that this backlog was at its greatest in those countries whose economies were most severely affected by the Second World War. The long boom could then be regarded as being generated by the presence of considerable scope for new investment resulting from this backlog. This process of catching up would also set into motion a secondary wave of substantial technological progress. At some stage, however, the catching up process could be regarded as complete. When this happens, a deceleration in the rate of growth of investment would take place, reducing the rate of growth of national income, and pushing unemployment upwards. The full employment relationship will then have been ruptured, and future investment decisions will have to be taken on the basis that the level of effective demand is less than the full employment level. This created secondary depressive tendencies; the long cycle downswing is in motion.

Another aspect to this problem, emphasised by long cycle theorists[28] is that of demand saturation for particular products. During the boom of the late 1950s and early 1960s, the level of ownership of various consumer products (cars, telephones, televisions, refrigerators, etc.) increased sharply (chapter 2.7 below). Once this process of diffusion of ownership has taken place, however, it became much more difficult to expand the level of demand for these and other products, and growth would tend to decelerate substantially. A tendency towards industrial recession will have set in.

There is still much work which needs to be done before the economic downturn of the 1960s can be fully understood. From the point of view of the economic policy maker, steering decisions became more difficult in the 1960s and early 1970s. In earlier years it was possible to boost the economy when unemployment was getting too high, and to depress the economy slightly when inflation became too high, or when there were balance of payments difficulties.[29] From the mid-1960s onwards, however, a more typical situation would be one of undesirably high unemployment, undesirably high inflation and an adverse balance of payments. The simultaneous existence of these problems, which required fundamentally conflicting solutions, meant that it became impossible to steer the economy along a smooth growth

path. Of course, the basic problem was that the economy as a whole was on a downswing; the inflation problem, the unemployment problem and the balance of payments problems reflected forms that the downswing took.

Throughout the 1970s it was becoming clear that the problems of the economy were severe and fundamental, with the oil price rises of late 1973 adding a severe shock to an already unbalanced economy.[30] In policy terms, the presence of very high rates of inflation and high rates of unemployment, despite Keynesian policies, left the way open for competing, non-Keynesian interpretations of economic management. This was a particularly strong tendency in the Conservative Party;[31] the evident lack of success of Keynesian policies in the Heath Government paved the way for Mrs. Thatcher's monetarism.

As the 1970s wore on, increasing attention was given to the problem of "deindustrialisation", a term which came to be fashionable, but which was interpreted in different ways by different writers. Bacon and Eltis (1976) were perhaps the first to bring the problem to the forefront, emphasising the seriousness of Britain's industrial decline. Their *explanation* of the decline, which focused on the extent to which state expenditure as a proportion of national product had increased through time, appears fallacious. The increasing proportion of state expenditure in the national product is not the cause of industrial decline, but the *effect* of industrial decline; a sharp deceleration in industrial growth will tend to lead to the state share in national product rising, except in the unlikely case in which state expenditure is retarded as severely as industrial output.[32]

The question of Britain's industrial decline was taken up by other writers, with the series of conference papers edited by Blackaby (1979) representing the state of discussion at the onset of slump. Other important contributions came from Singh (1977) and in the various issues of the *Cambridge Economic Policy Review* in the late 1970s which emphasised that without radical shifts in economic policy, including various systems of import controls, historically very high levels of unemployment could be expected. It should be emphasised that the *Cambridge Economic Policy Review* predictions were *not* simply predictions of disaster should monetarism be adopted, but rather were predictions of extremely severe recession under *either* orthodox Keynesian or monetarist policies. The prescription for improvement could be regarded as involving a far more "socialist" form of economic

policy than was hitherto in existence, even though not all members of the Cambridge Economic Policy Group regarded themselves as socialists.

Conditions deteriorated sharply in 1980. Clearly the slump has been much discussed at a variety of levels of sophistication, but the definitive analysis of the slump of the early 1980s has yet to appear.[33] Important aspects of the slump are discussed in chapters 2,7 and 8 below, but it would be incorrect to pretend that these discussions provide a complete discussion of slump.

(ii) British economic development up to 1914

The period from 1918 to 1932 may be seen as one dominated by economic decline, but the identification of a phase of decline implies the existence of an earlier phase of growth. This draws attention to the period before 1914.

One can draw a heroic picture of the industrial revolution, in which a generation of inventors and entrpreneurs came together in the late 18th century and started an "Industrial Revolution" which led to Britain becoming "the workshop of the world" in the 19th century.[34] Later, it might be suggested, industrial dominance was translated into imperial dominance, and the largest empire in the history of the world came into being.[35]

This outmoded "heroic" view contains large elements of truth, but is far too over-simplified to be convincing. Indeed, recent research has shown that many of the relationships implied in the heroic view did not exist. If one attempts to indicate the directions of evolution of the ruling class implied by the heroic view, the basic picture would be one of an industrial ruling class replacing, in the "industrial revolution", a landed ruling class. This new ruling class, in order to extend its power, diversified its attention into imperial gain. In the meantime the balance of economic power shifted sharply from south to north during the industrial revolution.

This traditional view can be criticised on a number of counts.

The industrial revolution of the late 18th century was firmly embedded in existing economic structures, and represented an intermediate stage in the evolution of the modern economy and not, as Rostow (1971) appears to suggest, the *start* of the evolution of the modern economy. Mantoux's early classic work on the industrial revolution,[36] emphasised the importance of England's growing commerce throughout the 18th century in setting the preconditions for the later growth of industrial activity, while Deane (1979) schematises the

preconditions for the industrial revolution in terms of a "demographic revolution", an "agricultural revolution" and a "commercial revolution". Britain had already developed a complex network of foreign trade by the mid-eighteenth century, as Deane emphasised, while the possibility of importing raw cotton and exporting manufactured cotton added to the opportunities for import and export. If however industrialisation represented an extension of commerce rather than a new, wholly revolutionary, activity, then it might well be held to follow that economic dominance did not pass to the industrial capitalists, and that the industrial areas did not dominate other urban areas. Indeed, it seems highly feasible that a major effect of the industrial revolution was to bolster the economic position of commercial and financial centres such as Liverpool, Glasgow, and, above all, London. The industrial areas undoubtedly grew quickly, and drew in very large numbers of migrants, but it is open to debate whether they were economically dominant. Indeed, recent empirical research by Rubinstein (1977, 1981) suggests that through the 19th century London, rather than the industrial areas, held the dominant concentrations of extreme, non-landed wealth. A re-examination of Rubinstein's data suggests that the gap in wealth between London and other *major* urban centres was not perhaps as sharp as Rubinstein indicates, but it still seems likely that London was the leading growth centre in the 19th century British economy.[37]

If one relaxes the assumption that nineteenth century British capitalism was predominantly *industrial* capitalism, various interpretations of the imperial push in the 19th century are materially altered. Cain and Hopkins (1986) criticise the notion that imperialism was an outgrowth of industrial capitalism, and suggest instead the importance in this respect of a more traditional "gentlemanly capitalism" headed by the landed interests with financial interests later becoming important. Within such "gentlemanly capitalism" ethics of honour, rather than the ethics of maximising efficiency became dominant; such a system of ethics is clearly more suited to running an empire than to running a factory.

While one can doubt whether industrialism ever completely dominated the British economy, industrial growth in the 19th century, covered in more detail by Checkland (1964), was certainly an extremely important factor. Industrial growth started to slow down considerably from the 1870s, a much discussed feature of the British economy,[38] but political imperialism, and the exports of capital and labour, became extremely important towards the end of the century.[39] The relationship

between these sets of trends is undeniably highly complicated. A feature which must be emphasised however is that improvements in transportation had vastly increased the economic potential of the temperate lands outside Europe, leading to large periodic influxes of capital and labour into such countries as the USA, Canada, Argentina and Australia. These factor flows have been described in detail from a British perspective by Cairncross (1953) and Thomas (1973), while for obvious reasons the topic is a central feature of the economic histories of the countries of the "white periphery".[40] It is probable that economic motives were less dominant, and political motives more dominant, in the imperial push into the "black periphery", but the precise balance between economic and political motives in this form of the imperial push remains a matter of controversy.[41] It would seem, however, that the development of mechanisms to open up the white periphery would have fostered the development of institutions to conquer the black periphery; there are obvious points of complementarity.

In domestic terms, imperialism clearly gave a considerable economic impetus to Southern England, and especially to London, while the industrial areas would be less favoured. Industrial development in the coalfield regions continued, but mainly through the expansion of traditional "staple" industries, such as coal, cotton, steel and shipbuilding rather than through the emergence of new industries. These staple industries of the late Victorian and Edwardian years were precisely the industries whose decline was at the centre of the regional problem and mass unemployment in the inter-war years, a linkage which is made in those texts which cover the period from 1870 to 1939 as a whole, such as Ashworth (1960) and, even more clearly, Sayers (1967). The export industries were able to expand their foreign markets in the wake of imperial expansion, but a turn-around in economic conditions would tend to lead to deep depression in such industries.

(iii) The Regional Problem in Britain

The attempt has been made to show, in outline, how the regional problem emerged from various facets of structural change in the British economy. The acute regional differences in levels of prosperity in the 1920s and 1930s can be seen to result from a combination of the pre-existing economic dominance of the South over the North (which meant that new industries were more likely to be

attracted to the South) and, as a triggering factor, an exceptionally severe recession in the older industries of the North. This argument has been derived, initially, more from a consideration of historical structures of economic change than from a detailed consideration of spatial structures in the British economy. The question of Britain's industrial geography is, however, of critical importance, and needs to be reviewed.

Rawstron (1964 p.307) notes that:

"Regional *specialisation* of manufacturing is the dominant fact to emerge from a study of the nineteenth century industrial geography of Britain. Regional *diversity* of manufacturing has in contrast been the dominant evolutionary development during the twentieth century". (emphases in original).

This gives a good general impression of the dominant patterns, although the term "specialisation" is not adequately defined. There are two aspects of specialisation which need to be considered; the *specialisation* of a particular area in a particular industry (glass in St. Helen's, cotton in Bolton, etc.) and the degree of *concentration* of a particular industry in a particular area (the cotton industry being concentrated in the North West). The difference between these two concepts may be seen in the development of the electrical industry, which up to the late 1950s, was strongly concentrated in the London area, even though London did not *specialise* in the electrical industry, as this industry employed only a relatively small percentage of the local workforce.

The nineteenth century industrial geography of Britain was thus characterised by both specialisation and concentration. Furthermore, it needs to be emphasised that the industrial urbanisation which developed was situated almost exclusively in coalfield areas, given the dominant role of coal as a source of energy at that time, and given the tendency for production costs to increase sharply if coal has to be transported a long distance to the centre of production (see chapter 9 below). At the regional level, this meant that 19th century industrialisation was largely concentrated in Northern England, the Midlands, Scotland and Wales, while the London economy was turning its back on industrialisation.[42] At the sub-regional level, lowland areas in Northern England which were not situated on coalfields tended to escape 19th century industrialisation and remained largely rural. North Yorkshire and Northumberland (away from its south eastern tip) provide further examples east of the

Pennines.

Different industrial specialisations developed around different coalfields. Rawstron (1964 p.307) notes the general tendencies:-

"Regional specialisation ranged from heavy industry in central Scotland and South Wales, and on the northeast coast, for which access to tidewater for receipt of raw materials and more significantly for despatch to overseas markets was as important as the local availability of coal, to footwear manufacture which needed simply to concentrate in order to achieve locational economies, and did so at first in Northamptionshire where there is no local coalfield. Textile manufacture was obliged to seek interior locations: cotton on the Lancashire coalfield; wool on the West Yorkshire coalfield and knitwear in the east Midlands. All three could have succeeded equally well on coastal coalfields; but there they would have had to compete with heavy industries for resources especially of capital, management and labour .... As long as (the heavy industries) remained profitable they seem to have had the power to shut out or strangle other industries competing for resources".

In addition, Rawstron notes specialisation in Sheffield (quality steel goods) and north Staffordshire (potteries) while the West Midlands (centred on Birmingham) underwent early specialisation in heavy industry but switched to a variety of expanding lighter industries in the last part of the century. This can be seen in long cycle terms. Allen (1929), in his comprehensive survey of industrial development in the West Midlands, noted a sharp decline in employment in the region's traditional industries during what he described as the "long slump" of 1876 to 1886. The growth of the new industries, such as bicycles, light metal industries, and later the early car industry, took place mostly after this slump had passed by, when the long cycle upswing was in progress. The West Midlands was arguably the only coalfield industrial area in the British space economy to develop significant new industrial systems, rather than mere extensions of existing systems, during the late 19th century, and partly as a result of this came to be the only region to develop genuine regional specialisation, in the vehicles industry, in the 20th century. There are still, in the late 20th century, other large industrial areas with a high degree of specialisation, but these generally represent the persistence of 19th century industries in their specialised locations, rather than the development of new specialisations.

As Britain entered the First World War, there was a major contrast in economic geography between the densely urbanised coalfield

areas, which were the main seats of industrialisation, and the extensive rural areas, chiefly in Southern England, which had lagged behind economically, and in which the dominant form of urbanisation was the medium sized market town. There was an extremely important third component to Britain's economic geography; London. The backwardness of industrial development in London should in no sense be taken to imply that the London economy was falling behind the Northern economy. On the contrary, London's economic role expanded greatly during the 19th century, as the capital city bacame not just the administrative and financial centre of a single country, but the administrative and financial centre of an empire which stretched across the world. The extent of London's dominance has perhaps tended to be understated by economic historians,[43] who have concentrated on the processes of industrialisation, but recent work by Rubinstein (1977,1981) provides an important corrective. London was a centre of great poverty,however, as well as a centre of great wealth; the casual labour markets of London incorporated persistently high levels of unemployment which were not confined to depression years.[44] The expanding London labour market attracted very large numbers of migrants, but without being able to absorb the migration flow sufficiently effectively to provide full employment for both migrants and the existing workforce; chapter 9 examines the mechanisms more closely.

There is little doubt that the inter-war period, like all phases of long cycle downswing and early upswing, represents a pivotal period of change in economic structure, with changes in the geographical structure of the economy being unusually strongly marked. In periods of recession, old industries declined in the North while employment in the South was steady. In periods of cyclical upswing, newer industries grew rapidly in the South and Midlands, while the traditional industries of the North failed to show, in general, any strong expansive tendencies.

Despite the undoubted significance of the period, study of its economic geography has been remarkably sparse. The period tends to fall between two stools with "historical geography" tending to stop at 1900 or thereabouts (e.g. Darby 1973) and "contemporary economic geography" tending to start with the Barlow Report (1940) or later. Even a recent historiographical essay by Jones (1984) serves only to emphasise the gaps, as he notes that while historical geographers have tended to have a "blind spot" for the period, economic historians have tended to concentrate almost exclusively on national

trends. Neither can it be said that geographers of the inter-war period itself made much progress in understanding the economic geography of that period. The record is largely one of local reports, brief submissions to the Barlow Commission (Taylor 1938, Royal Geographical Society 1938) and a rather futile discussion on whether the zone of heavy urbanisation between London and Lancashire could be described as a "belt" of industry, and, if so, whether the belt was coffin shaped or hour glass shaped.[45] Fortunately some contemporary and semi-contemporary works from outside the realms of academic geography provide a more comprehensive economic geography of the period, even though very little attention is paid to studying the dynamics of change at particular points on the economic cycle. Particular attention is deserved for Political and Economic Planning (1939), Fogarty (1945) and finally the Barlow Report (Royal Commission 1940) which had a major significance in laying the foundations for post-war regional economic and land use planning. One point perhaps needs to be stressed, that the changing distribution of industry resulted not from a "drift" of existing industry to the South but rather from a combination of rapid expansion of newer industries located primarily in the Midlands and South with long term decline in the older industries of the North.[46]

There appears to be no integrated economic geography of the slump period itself (1929-1933), although a series of surveys commissioned by the Board of Trade (Board of Trade, 1932 a,b,c,d,e) provide much useful detail for the worst affected areas (South Wales, North East England, Lancashire, West Central Scotland) and Jewkes and Winterbottom (1933) published a report on the depressed Cumberland and Furness area in tandem with these. A follow-up survey of South Wales, whose economic contraction was especially severe, was published in 1937 (National Industrial Development Council of Wales and Monmouthshire, 1937).

After the War, the dominant position of the South and Midlands increased. The 20th century layer of industry was not only a diversifying layering; it also was a layering which favoured the core areas of the economy rather than the coalfield peripheral areas. As chapter 5 below notes, there was a tendency for employment to grow in the South faster than in the North by a fairly consistent rate. When economic planning came into fashion in the 1960s, there was a strengthening of regional policy measures designed to reduce this gap in employment growth. Ironically the net direction of industrial transfers, both spontaneous and with the aid of regional policy, was

from the traditionally under-industialised areas of the South to the traditionally industialised areas of the North. For a history of regional policy measures see McCrone (1969) and McCallum (1979).

The industrial geography of the U.K. was becoming successively more complicated for a number of reasons. Broadly it can be stated that technical constraints on location (for example, the need for coal) had loosened considerably, widening the range of possible locations,[47] while the increased concentration of production into fewer and larger firms (as detailed by Prais 1976)[48] meant that the multi-plant firm, with discretion to invest or not invest at a wide range of locations, became a more dominant factor in industrial geography. In later years the concentration of capital has advanced to such an extent that the geography of the multi-national corporation, with discretion to switch investment across national frontiers, has been an increasing focus of research. Dicken (1986) has attempted to draw together many of the strands of this research.[49] In many respects the "multi-national problem" in the U.K. is expressed not primarily in the presence of foreign-owned factories vulnerable to closure under changing conditions in the world economy, although this may have considerable significance at the local level,[50] but rather in the historically long-standing propensity for British investment to take place aborad, often through the direct investment of a British-owned multi-national, rather than at home. Such invisible lost growth is perhaps at least as much a component of domestic industrial decline as the more obvious closure of foreign-owned factories.[51]

Various geographical implications of increased industrial concentration may be noted. One of the most important is that the key strategic functions of the large industrial corporation tend to congregate in the core regions of the economy (the South of England and to a lesser extent the West Midlands) while the activities undertaken in the peripheral areas are often marginal to the continued functioning of the corporation. Goddard and Smith (1977) have noted that there has been an increasing concentration of head offices of corporations in London and its surrounds, partly as a result of larger London-based firms taking over smaller provincial firms. There are also a number of works[52] which point to the concentration of research and development activity in the core at the expense of the periphery. As a corollary, the picture builds up of a peripheral economy tending to be increasingly dominated by factories undertaking routine forms of production and controlled, in terms of major strategic decisions, from a distance rather than locally. Production and employment in the

periphery can be allowed to expand when the going is good, but employment in such peripheral branch plant factories may become more vulnerable than the average during periods of recession. Under conditions of mild recession this might mean a tendency to operate the factory at less than full capacity (leaving machines temporarily idle), but an increased tendency towards severe recession might well lead to *permanent* reductions of capacity (scrapping machinery). In extreme circumstances, this might require a complete closure of the factory. Townsend (1983) has noted a pronounced tendency towards high levels of cutbacks and closures in the peripheral branch plant factories during the late 1970s, and an intensification of this process during the slump.

For the most part, concern with aspects of dependency in the industries of the peripheral areas has been fairly recent, as indicated by the dates of the references above. This concern has been accentuated by the acceleration of the decline of the periphery in the later 1970s. Keeble (1976) provides the standard reference for earlier post-war trends. He notes, following Coates and Rawstron (1971), that during the 1950s manufacturing employment increased rapidly in the core regions but decreased in the periphery, especially in Lancashire and Scotland, and also in the more rural parts of the periphery. London showed a marked decline in industrial employment but this was clearly linked to a process of local decentralisation, since the surrounding counties showed substantial increases in manufacturing employment. Smaller scale features, not noted by Keeble, included modest increases in industrial employment in the coalfield areas of North East England and South Wales.

In general this suggests a direct continuation, through periods of full employment, of the types of trend noted for the inter-war period; this case is argued further in chapter 5. During the 1960s, however, Keeble notes a "dramatic reversal of these trends"[53] with concentration being replaced by increasing dispersion of manufacturing industry, both to relatively unindustrialised subregions and to the peripheral areas. Closer examination of Keeble's text and maps, however, shows that the reversal was not sudden, but phased through the 1960s. In the 1959-66 period, for example, manufacturing growth was still strongly concentrated in the core areas of the country, although the decline in London had become much greater with respect to the increase in the rest of the South East. In the periphery, industrial decline characterised highly urbanised sub-regions, while, in contrast with the 1950s, rural sub-regions showed employment growth.

In the 1966-1971 period, aggregate industrial employment started to decline, but this decline was almost exclusively concentrated in the main conurbations, with London losing 250,000 manufacturing jobs and four provincial manufacturing conurbations (the West Midlands, Manchester, West Yorkshire and Clydeside) losing in total about the same number of jobs. Less urbanised sub-regions still continued to show modest employment increases in the context of overall industrial decline. More recent work, notably by Fothergill and Gudgin (1979b, 1982),[54] has emphasised the significance of the urban-rural shift, and indeed has tended to deny the significance of specifically regional factors. This overstates the case, since systematic differences at the core-periphery level can readily be detected in detailed analysis of industrial employment change. The urban-rural shift is undoubtedly an important factor in contemporary British industrial geography, but it is far from being the *only* important factor.

Fothergill and Gudgin (1979b, 1982) emphasise the extent to which locations in large cities, and especially in the inner industrial areas of large cities, are spatially constrained, and present difficulties if new investment is planned in such locations. At the simplest, the problem is one of space; a factory surrounded by other factories might have very little room to expand. A closely related problem is that existing buildings in a constrained location might be architecturally unsuitable for housing new machinery, which presents a choice of installing new machinery in an alternative location, costly redevelopment of the existing buildings, or an abandonment of plans to invest in new machinery. There are of course other aspects of inner city locations which make them less favourable than greenfield locations for expanded industrial production. These would include various cost and transport factors. Fothergill and Gudgin concentrate their attention, however, on the question of space shortages in inner city areas.

An important feature of Fothergill and Gudgin's argument is that the physical constraints of inner city sites discourage expansion in growing industries, without necessarily being a major handicap in industries which are not expanding. Fothergill and Gudgin, in their studies of employment change in the 1960s and 1970s, note that there was a tendency in low investment industries for employment decline to take place at approximately the same rate in all size bands of urban areas, while high investment industries showed rapid *declines* in employment in cities and larger towns, but substantial increases in employment in spatially less constrained, more rural, areas.[55]

These analyses concerned themselves primarily with the pre-slump period. Clearly, during a slump there will be very few high investment industries and a large number of low investment industries. This would imply that the urban-rural shift would tend to get weaker during a slump, a conclusion which is on the whole supported by the analysis of chapter 8 below.

Fothergill and Gudgin (1982) provide some important insights into the geography of employment change, but their work is marred by a tendency to over-generalise in an attempt to construct a series of law-like statements. At the geographical level, doubts can be expressed as to whether a classification based on levels of urbanisation is truly independent of regional factors; the relatively unfavourable performance of London and the relatively favourable performance of "industrial non-city regions" is largely accounted for by employment switches within the South East.[56] At the historical level, no real attempt is made to establish precisely which periods the urban-rural shift can be said to have been important in. Fothergill and Gudgin (1982 pp.11-47) suggest that the urban-rural shift has been a dominant feature of the *whole* post-war period, though strengthening after 1960, and yet analysis of the 1950s (chapter 5 below) shows clearly that rural areas outside the London zone of influence were areas of unusually slow employment growth, not fast employment growth. The present author feels that it is more important to establish what has been happening in particular places at particular times than to attempt to construct law-like statements which may have highly limited historical validity.

Massey and Meegan (1982) have also attempted to expand discussion of industrial job loss, but in a different direction, relating job loss more closely to the detailed interplay and conflict between capital and labour under particular conditions of investment, productivity and output trends. There is undoubtedly much of importance in this work, particularly in opening up questions of what should be undertaken in any fresh work in the field of industrial geography, and yet there are also considerable theoretical and technical weaknesses.

Massey and Meegan use the results of the 1968 and 1973 Censuses of Production in order to identify sectors of job loss, and then to identify common features in sectors of job loss. No attempt is made to compare sectors of job loss with sectors of employment growth, and yet such a comparison is essential if one is to explain why certain sectors show job loss rather than job growth. For example, Massey

and Meegan note that certain sectors increased their output substantially during the period in question but still lost jobs, and argue that such jobs would have been lost as a result of productivity growth rather than as a result of lack of demand. It is highly unlikely that such an explanation could survive a comparison with sectors of employment growth. In such sectors, employment would have grown not through an absence of investment, or an absence of productivity increases, but rather as a result of output growth outstripping productivity growth. In the substantial majority of cases it is the rate of growth of effective demand, rather than the rate of growth of productivity, which determines whether an industry is gaining or losing jobs. If it were otherwise, one would expect industrial employment to rise during a recession and fall during a cyclical recovery, in inverse relation to cyclical fluctuations in investment.

Part of the problem is that Massey and Meegan (1979, 1982) implicitly make the highly unrealistic assumption that increases in productivity have no effect on levels of output, but have an effect on levels of employment. A more realistic treatment would be to suggest that increasing productivity creates the possibility of increasing production levels, and furthermore decreasing the relative price of the product, while the state of the market determines whether or not demand for the product,and hence output, reaches a level at which employment stays stable.

Another unusual feature of Massey and Meegan's work is that very little consideration is given to identifying the economic conditions under which jobs are lost. The preponderance of job losses take place during cyclical recessions, when demand is growing slowly, but the linkage of job loss to recession is not adequately made in Massey and Meegan's work. At the simplest, there is obvious scope for cross-referencing Census of Production figures and the annual series for employment produced by the Department of Employment.

Moving to more recent events, the geography of the post-1979 slump has been touched upon in the academic literature but still not as thoroughly examined as one would wish. Townsend (1983) has provided the most detailed study to date, with welcome emphasis on corporate aspects of employment change, which cannot readily be studied from official statistics. The work was published before employment statistics for 1981, by minimum list heading and travel-to-work area, became available, and so inevitably will be superseded to some extent by later work. As a progress report, Townsend's work is useful,although

perhaps rather too agnostic in terms of theoretical approaches.

Various shorter papers have appeared, covering such aspects of recession as regional redundancy data (Martin 1982, 1984),[57] for which statistics are compiled at monthly intervals, or local employment change.[58] The geography of unemployment during and after the slump is a subject which has been much discussed at the popular level, but there is a surprising lack of academic work of substance dealing with this issue. Gillespie and Owen (1981) attempted an early study of local unemployment data during the slump, but unfortunately chose a misleading method of data analysis (cf. Crouch 1982a). More recently, various attempts have been made, in the press and elsewhere[59] to provide "snap-shots" of regional differences in unemployment and unemployment increase, but it would seem that chapter 7 below provides the first attempt to have been made to consider in detail spatial differences in unemployment change at different phases of the slump.

The Regional Studies Association (1983) published a report into regional problems in the United Kingdom. The analysis made of the geography of slump was unfortunately not very detailed, with the bulk of the attention being given to discussions of possible new directions in regional policy, rather than to a detailed assessment of the regional problem. It is open to debate whether such a distribution of effort is appropriate.

This survey has outlined some of the key literature which impinges on the areas of empirical research undertaken in this dissertation. Before providing an outline of the theoretical concepts used in later analysis, it remains only to mention the few texts which have attempted to cover British regional economic development over a long period, and also those which have attempted more detailed outlines of regional economic structure, region by region.

Lee (1971) covers regional economic growth in Britain since the 1880s from the perspective of an economic historian. While much of the discussion is useful there are several points at which Lee's interpretation of questions of economic geography seem faulty. It is inappropriate to conclude, for example, that in the future (from 1971) "growth seems most likely to be based on the major urban conurbations where consumer markets and agglomeration economies meet" (Lee 1971 p.207) when precisely the opposite was happening, with the major conurbations and other cities being already in decline and growth being based primarily on small urban centres. Also, more attention should perhaps have been given to the question of the development of light manufacturing industries in the 20th century; the discussion of market

orientation in the consumer goods industry arguably focuses too much on retailing and too little on manufacturing.

Law (1980) provides a more soundly based approach, and provides a useful straightforward introduction to the subject of British long-term regional development. The statistical presentations are perhaps rather too strongly oriented to decennial Census figures, at the expense of more frequently produced Ministry of Labour/Department of Employment statistics on employment and unemployment. As a result, various dynamic perspectives (for example, the effect of slump on the evolution of regional systems) have been lost, since short-term changes are not readily amenable to analysis by inter-censal comparison.

Dunford, Geddes and Perrons (1981) attempt to place U.K. regional development in the long run in the context of the rise and fall of various phases of capital accumulation, defined in terms of the dominant forms of industrial work process. Unfortunately, history becomes submerged in "theory" and the critical question is largely unanswered of to what extent various forms of the regional problem result from the rise and fall of particular industrial *systems* (e.g. "machinofacture", "Fordism") as emphasised by Dunford et al., and to what extent the result from the rise and fall of particular *sectors* (e.g. agriculture, coal-mining, vehicles).

Massey's reinterpretation (Massey 1984) of Britain's industrial geography and regional problem is of some interest, but needs to be treated with caution in that very little of the argument is backed up by empirical detail. The overall picture presented is one of various complex patterns of decline, and of class conflict expressed in geographical terms, in the context of a laggardly British capitalism, but there is little close discussion of what forms of conflict and decline take place under which precise economic conditions.

As far as detailed region by region description of the economic geography of Britain is concerned, Manners, Keeble, Rodgers and Warren (1980) provides the most comprehensive single-volume source, concentrating almost entirely on the post-war period. Various useful region-by-region studies have been published in a series entitled "Industrial Britain", although generally at too early a date to allow for much coverage of the recessionary trends of the downswing. This series includes studies of North East England (House 1969), South Wales (Humphrys 1972), North West England (Smith 1969), Humberside (Lewis and Jones 1970) and the West Midlands (Wood 1976).[60]

There has recently been published a collection of essays on "The geography of deindustrialisation" (Martin and Rowthorn 1986). The discussion in these essays has mostly been on thematic issues. It is hoped that the more detailed analysis of the geography of employment change at particular conjunctures, presented in chapters 6 to 8 below, will supplement the discussion.

Finally, just before this manuscript was sent for typing, a work by Marshall (1987) appeared, on long waves of regional development in the British economy. One is reluctant to pass comment on what is necessarily only a preliminary reading of the book, especially if that book covers territory which is in many ways much the same as one's own territory: it is rather too easy to find gaps in someone else's writing and regard them as crucial, while arging that aspects which another writer has considered, and which one has not considered oneself, are irrelevant! Despite the overlap in basic subject matter, however, Marshall's approach differs strongly from the approach presented below. Marshall argues that long waves are best seen not in aggregative terms but in the rise and fall of individual regions, with particular regions tending to grow strongly in particular long cycle upswings, thus in a sense dominating the long cycle upswings. The discussion below suggests instead a far greater core-periphery dynamic in British regional development, with the importance of the London-based core region increasing with each long cycle upswing. Various peripheral regions might develop significant new industrial systems at particular critical phases, but much depends on the pace of development set by the expansion of the core economy; if for example there is substantial diversion of investment from the core into overseas railway building, a sizeable market for the domestic steel industry is created. During a long cycle upswing there is almost certainly going to be significant structural change and economic evolution in the core regions; it is less certain that this will happen in the periphery, and if for some combination of reasons it does happen, it would still be unlikely that the periphery leads the upswing. This difference of approach perhaps explains why Marshall, in 1987, still considers it to be doubtful whether there will be a future long wave upturn in the British economy (Marshall 1987 pp. 230-231) while the present writer considers that the upswing has been in place for several years, with the dramatic changes in the London financial economy, combined with stagnation in the periphery, indicating the basic form of the upswing.

1.4 Some Questions of Economic Theory

In order to discuss theory adequately, in the context of a piece of empirical research, it is necessary to have some clear conception of the logical relationships between theory and observation. This is in itself a highly contentious issue, on which polarised positions are often taken. The uncompromising empiricist argument would tend to suggest that the facts are there waiting to be observed.[61] In reaction to this position, it is almost a commonplace now to note that observations are necessarily theory-laden and that theory therefore has primacy.[62] Taken to extremes, the argument for the primacy of theory may lead to such a stage that it becomes irrelevant for the practitioner whether the theory can be empirically justified or not; the theory itself is taken as knowledge.

This issue is one which has been discussed in various forms, over a period of millenia rather than decades; nothing that is fundamentally new can be added here. Two comments need to be made, however, in order to clarify the type of argument presented in later chapters, and in order to indicate how this argument fits in with existing economic theory.

The first point to be made is that throughout the research work presented here there has been a continual two-way relationship between empirical observation (often at second hand, through the use of official statistics) and theory. Thus the theoretical understanding held at time t might well suggest the usefulness of making particular types of observation at time t + 1, while close examination of these observations might well lead to the theoretical understanding at time t + 2 being more sophisticated than at time t. The research method in this thesis has been dominated by this iterative procedure to such an extent that it is difficult to know whether to describe the final work as a piece of empirical research with strong theoretical underpinnings, or as a theoretical work in which the attempt has been made to provide detailed empirical evidence for any theoretical statement. One important consequence of this method of working is that realism, rather than mathematical elegance or predictive ability, is taken as the most important criterion in assessing the validity or otherwise of a theoretical argument.[63]

The second point, which concerns the question of the primacy of theory, requires more detailed discussion. One can accept the argument, with certain reservations, that any scientific observations

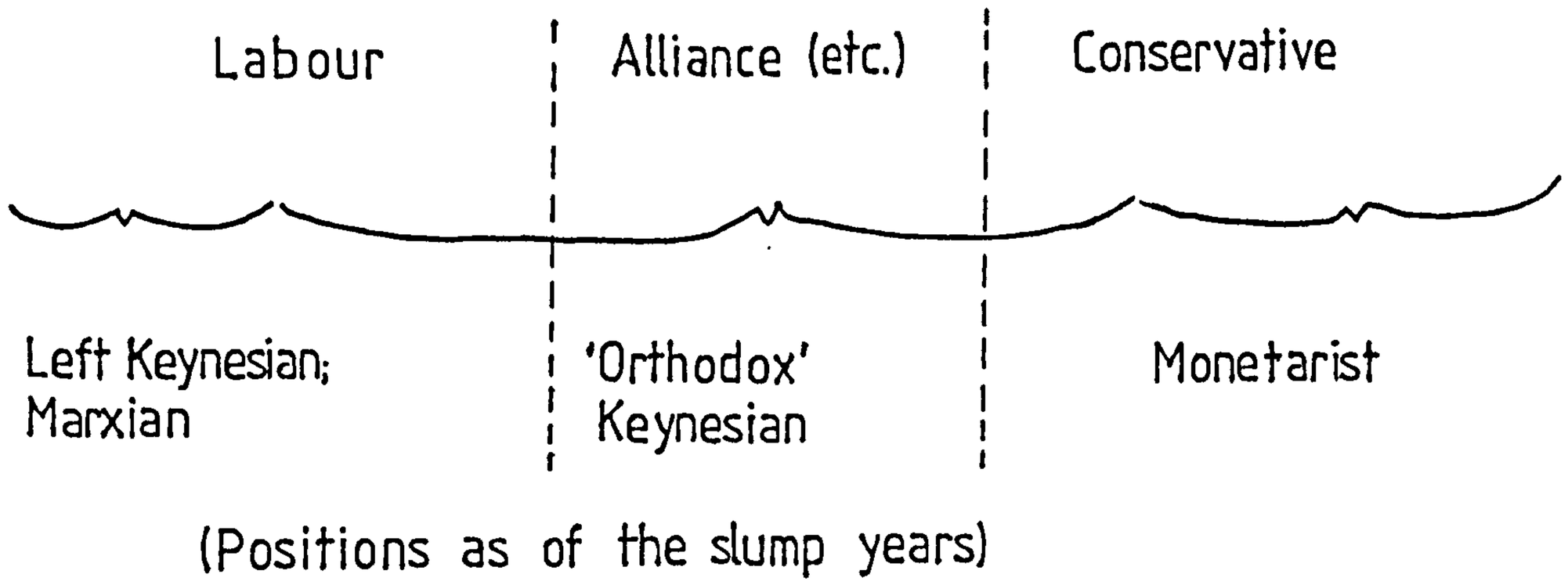
made are dependent on a pre-existing theoretical structure, even if that structure may sometimes be nothing more than "common sense". This can be taken to mean, in discussions of the philosophy of science, that theory in some sense is liberating.[64] There is, however, an obverse side to this, in which theory may *obscure* understanding. If the theoretical apparatus is defective, then there are important observations to make which it becomes impossible to make, while there may also be a systematic tendency towards incorrectness in the observations actually made. To illustrate this, the reader is asked to consider how a discussion of the British economy in the 1980s or 1930s would be conducted by someone holding the theoretical proposition that systematic involuntary unemployment is impossible in a capitalist system.[65] This proposition is central to traditional neo-classical economics, and its monetarist offshoot, but is one which, if held, would make the empirical research in the following chapters impossible to conduct. It would be meaningless for a monetarist to try to explain empirically regional differences in unemployment rates in terms of regional differences in the rate of industrial job loss, and similarly it would be meaningless for the present author to attempt to explain these differences in terms of assumed regional differences in the degree of preference for leisure rather than work.

Theoretical approaches do not wither away simply because they provide an incorrect view of the world. Indeed, the durability of a particular type of approach may often be conditioned by the extent to which inconvenient observations can be marginalised. If economists, of whatever persuasion, make empirical observations that are clearly incorrect to an outside observer with a theoretical apparatus of informed common sense,[66] then the situation arises in which outsiders view the economics discipline as being in a state of crisis, whereas insiders tend to see nothing as being wrong. This, it seems, reflects at least part of the current position.[67]

It is tempting to see the major schools of economics in terms of Kuhnian paradigms; a theoretical structure develops, and is used to generate research, but when problems occur which cannot be solved in terms of the existing paradigm, and which *need* to be solved in terms of the existing paradigm, then the conditions are ripe for a scientific revolution. Kuhn's (1970) analysis, at least when applied to the social sciences, tends to leave out a very important factor, namely the extent to which the acceptability of social science research depends more on the state of intellectual battles in the

wider political sphere than on scientific-empirical grounds or on the battle of ideas within the narrower sphere of an academic discipline. In Britain in recent years, the funding or otherwise of social science research has depended as much on whether a particular direction of research is approved or tolerated under the Thatcher Government as on whether it has a wider intellectual or scientific validity.[68]

It would not be unreasonable, in the British context, to describe the main schools of economics on party political lines. Diagrammatically, one would have:



From this diagram, it can be inferred that orthodox Keynesianism, with substantial cross-party support, is likely to remain the most widely held viewpoint amongst professional economists, while monetarism will tend to be politically the dominant school when the Conservative party is in power. This simple diagram is taken to refer to the conditions of the late 1970s and 1980s; in earlier years orthodox Keynesianism would have been dominant throughout the political spectrum.

Most of the attention, in media and academic debate, has been on the battles of economic theory fought at the centre and right of the political spectrum. The focus has been on the clash between Keynesianism and monetarism, a clash which has taken place at academic, political and journalistic levels. Without entering into the details of this debate,[69] one can suggest that the two sides have emerged fairly evenly in terms of debating points, without either side having been responsible for any decisive scientific breakthrough in developing an understanding of current predicaments. It is an easy target for orthodox Keynesians to attack the monetarists for the emergence of mass unemployment in Britain,[70] but it should be remembered that monetarism became a potent political force in the Conservative Party, and later, in the running of the national economy, only after the Keynesian policies of the 1970s had failed to retard

an accelerating inflationary spiral, or to maintain full employment.[71] Moving back a few years further, Friedman (1968) anticipated the likely development of an inflationary spiral combined with possibly rising unemployment unless Governments renounced the Keynesian policy of reflating to attempt to control depressions. Keynesian policies, Friedman argued, would tend to lead to permanent increases in inflation without securing any long term reductions in the unemployment rate. Thus the failures of the Keynesian years present the monetarists with an easy target.[72]

The view from the left places far less emphasis on the theoretical debate between Keynesian and monetarism. Orthodox Keynesian and monetarism tend to be regarded, not as wholly competing systems, but as differences of emphasis within the politically dominant framework of neo-classical economic thought.

The "left Keynesian" version of this argument, associated in particular with the name of Joan Robinson,[73] would suggest that Keynes, with his theory of demand deficient unemployment, made a major break with pre-existing neo-classical orthodoxy, which argued as a matter of principle that the capitalist economy spontaneously tended towards an equilibrium of full employment. Keynes' *General Theory*, it was argued, has a revolutionary effect, and the best way for neo-classical orthodoxy to diffuse the revolution was to attempt to incorporate the Keynesian theory *within* the "neo-classical synthesis".[74] This new synthesis admitted theoretically that "imperfections" in the capitalist economy could lead to unemployment, but argued that minor state intervention could correct for these imperfections and re-create a full employment equilibrium in the economy. According to the "left Keynesian" argument, orthodox Keynesian economics, in the form in which it dominated post-war economic discussion, was already heavily tainted with neo-classicism, while monetarism simply discarded what remained of Keynes's thought in the neo-classical synthesis, and attempted to return economic theory towards a more primitive form of neo-classicism.

Clearly, the "left Keynesian" argument is in part an argument over who is the "true" successor to Keynes. Politically, Keynes's argument, along with Beveridge's analyses,[75] could be regarded as an important modification, in times of slump, of liberal principles.[76] The presence of mass unemployment itself entails a considerable loss of individual freedom, and furthermore undermines the social basis on which liberal capitalism depends. If the ideology of liberal capitalism indicates that the best results come when free men are

allowed to pursue their own economic interests, the mass unfreedom of unemployment is a considerable impediment to the working of the system. A degree of state intervention in the economy, with the implication of some curtailment of the freedoms of the propertied classes, is a small price to pay, the Keynesian liberals argue,[77] for the perpetuation of the liberal capitalist system and the economic freedom of the masses.

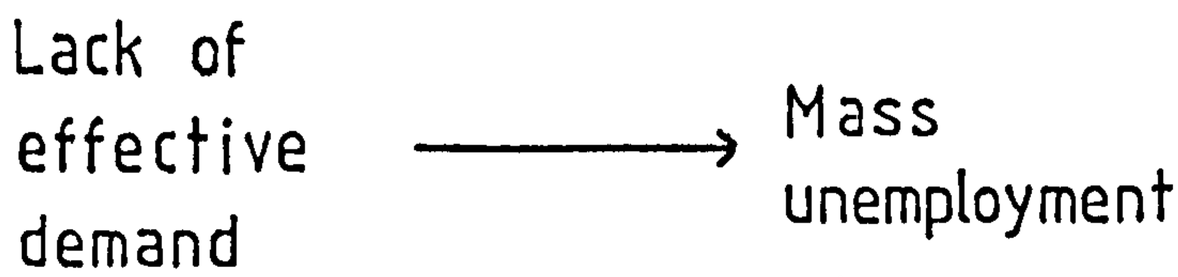
There are clearly aspects of Keynes's political arguments which can be found sympathetic by the political left, and which are liable to be viewed with horror by the political right, although the extent to which full employment was maintained internationally after the Second World War muted the criticisms from the right.[78] It is not, however, a contradiction in terms to be politically "left Keynesian". Whether the term has analytical meaning is another question.

The most distinctive aspect of any "left" analysis of the current situation, and of the recent past, is the notion of "crisis".[79] Mass unemployment is seen as resulting not from past policy mistakes, from the workers being too greedy, or from unemployment benefit being too high relative to wages, but rather from an identifiable crisis of the capitalist economy, and furthermore one which it is beyond the capabilities of economic policy makers to resolve satisfactorily. This notion of crisis is central to contemporary Marxist writing, although it is perhaps less than clear that it was central to Marx's own work, at least if one takes the notion of crisis as meaning something stronger than simply the periodic downswing of the business cycle.[80]

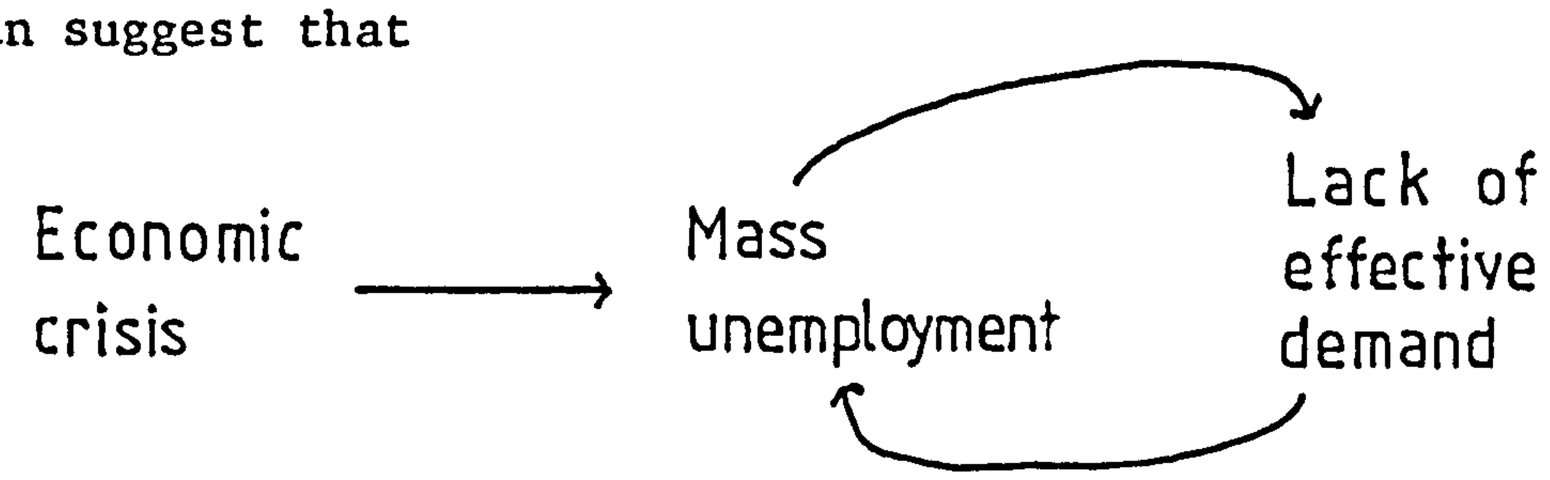
The orthodox Keynesian view, however, tends to reject the notion of an objective economic crisis; this would seem to apply both to Keynes himself and to later writers. A Keynesian might accept that involuntary unemployment could result from a disequilibrium in the economy which is not corrected, or is exacerbated, by Government action or inaction,[81] but this is a far weaker statement than that unemployment results from an economic crisis which it is *beyond* the power of Government to resolve. Furthermore, the standard Keynesian argument, that unemployment results from a lack of effective demand, is potentially tautologous.[82] If enough is being spent to maintaining only 90% of the workforce in employment, rather than 100%, this is more likely to be the *result* of 10% unemployment, with 10% of the workforce having severely curtailed possibilities of expenditure, rather than the *cause* of 10% unemployment. A close textual analysis of Keynes's *General Theory* shows that Keynes did not use his theory of effective demand to explain the *onset* of mass unemployment, but

instead used it to help explain why reductions in unemployment might be slow once mass unemployment was already present.[83] Keynes did not *explain* mass unemployment; he merely made projections from a situation with pre-existing mass unemployment.

Instead of the orthodox Keynesian notion,



one can suggest that



In a time of crisis, the priority of an effective economic policy ought, it is suggested, to be to attempt to minimise the effects of crisis, while after a crisis the priority should switch to considering ways of helping the economy pick itself up by the bootstraps, and ensuring that mass unemployment does not persist simply as a result of a low level of effective demand.

The diagram linking economic crisis, mass unemployment and lack of effective demand, is central to any coherent left view of unemployment. Such a diagram can be reached by either a Keynesian or a Marxist route, but is neither wholly Keynesian nor wholly Marxist. To reach it via a Keynesian route, it is necessary to accept that Keynes dealt with a relatively limited range of concepts, and that a concept of crisis needs to be added to the Keynesian framework. From a Marxist point of view, however, the introduction of Keynesian notions of effective demand in any strategy of reconstruction is liable to be regarded as a concession to Keynesianism; this is uncomfortable if it is believed that Marx had all the answers to the problems of the modern economy.[84]

The range of economic debate on the left revolves around various post-Keynesian and post-Marxist notions, which have as yet not been fully integrated to provide a coherent "left view" as a counter-balance to monetarism and the orthodox varieties of Keynesianism.[85] This is unfortunate, not only because of the implications for the range of political-economic debate, but also because the notion of crisis provides the elements, it seems, for a

theory of employment and unemployment which is more broadly based than, and *scientifically* preferable to, existing theories.

The notion of crisis, as Smith (1984) emphasises, implies more than simply the existence of a problem. There is also the implication that there is an important malfunctioning of the system as a whole. This does not automatically mean that the system is in imminent danger of collapse. The notion that there will one day come a slump which is so severe that the capitalist system will collapse has mythological resonance, but no more.[86] The capitalist system can survive comfortably enough on 10% or 20% unemployment; it is the integrity of the working class and not the capitalist system that is endangered by slump.

The system malfunctions badly under conditions of crisis, but does not collapse. The effects of the malfunctions tend to be displaced from the economic system into the political system. Thus, while mass unemployment is caused by the crisis in the economic system, the existence of mass unemployment does not in turn threaten the possibilities of stable growth in the economic system, but on the contrary *secures* the possibility of future economic growth through providing a large reserve of readily available labour. The presence of mass unemployment is more a threat to the smooth functioning of the democratic political system than to the capitalist economic system. If the right to work is taken as one of the basic elements of a fully democratic society, then unavoidable mass unemployment is necessarily a threat to democratic practices. A Government can either take the problem of unemployment seriously, and risk the possibility that it will threaten its own position by failing to solve the problem, or, as in the Thatcher Government, it can attempt to ignore the implications of the unemployment issue, and in so doing weaken the ties of democracy.[87] There has been, in recent years, a tendency in Government to regard unemployment and industrial conflict as policing problems, rather than as political problems, indicating a further shift in the crisis displacement mechanism.

The notion of a displacement of crisis, from for example the economic system to the political system, is an important one, which has been discussed in theoretical terms by Habermas (1975). In any detailed discussion of recent social trends, the question needs to be discussed of whether the economic crisis is *displaced*, so that the crisis is felt primarily within the political sphere, and by the various fractions of the old and new working classes, or whether the

economic crisis *spreads*. At root is the question of whether continued, or even accelerated, economic growth can take place after a crisis. Post-slump society, whether now or in the 1930s, has its distinctive and rather unpleasant features. The capitalist, professional and managerial classes, and those in the working class with relatively well-paid and secure jobs, find themselves in a position of renewed prosperity, increasing wealth and greater security than in pre-slump years; these are the beneficiaries of the displacement of economic crisis. There are, however, very large numbers of people who find themselves the victims of the displacement of economic crisis. These include the permanently and the intermittently unemployed, those in low wage jobs and indeed anyone whose economic security has been threatened by the crisis and its displacements. The reference to *individuals* being affected in this way, rather than to *classes*, is deliberate. The crisis is displaced on to individual people, rather than on to organised groups, leading to anomic social forms, rather than to collective class consciousness.[88] The organised labour movement, the primary political expression of the working class, is, after all, geared primarily to promoting the interests of those in work rather than those who have been displaced by crisis.[89]

There is clearly much analytical work which can be done within the border territory between "economics" and "sociology", and much useful work has already been done.[90] The origins of the crisis, however, are to be found in the malfunctioning of the economic system. Attention turns to this question.

When the economic system is operating normally, the various institutional structures and mechanisms within the economy are geared towards the preservation of a stable growth rate, along with various adjustment procedures if the growth rate should temporarily depart from its optional path. It may happen that there will be temporary over-investment in the economy, for example, but when this happens and over-capacity appears, a mild recession will ensue, reducing the rate of investment and allowing a later return to full capacity operation in the economy. Opinions differ about the use of the term "crisis" in business cycle analysis, with continental European writers being far more ready to use the term than writers in the English language.[91] In the definition being used here, however, a mild recession of the type just described should not be described as a crisis, since the problems generated within the economic system can also be resolved within the economic system, although only after

a time lag. The crisis comes when various forces push the growth rate in the economy below its optional level for a prolonged period of time. Then problems occur which are not readily resolved.

Technically, the maximum sustainable growth rate from a position of full employment is Harrod's "natural rate" of growth,[92] given by the rate of growth of productivity and the rate of growth of the labour force. If, for example, productivity is increasing by 3% per annum, and the labour force is growing by ½% per annum, the natural rate of growth is 3.5% per annum. A faster rate of growth cannot be absorbed other than by extending the labour force or by inducing a faster rate of productivity growth. Being a maximum, this figure is also an optimum, and various economic norms are set by the natural rate of growth, with for example real wages tending to increase in line with productivity.

The critical question is whether this rate of growth is sustainable. If not, crisis is imminent. If, however, such a rate of growth is sustainable in the long term, then perpetual full employment is possible. Empirically, smooth growth systems have always broken down in crisis sooner or later; whether this is logically necessary is another question.

Three main mechanisms by which crisis might enter the system can be listed:

(1) Over-investment/over-production; a chronic tendency for the system to produce more than can reasonably be consumed.

(2) Under-consumption; a chronic tendency for the economy to suffer low levels of production as a result of an unduly low level of effective demand.

(3) Imbalances in the economic structure; a concentration of employment in a particular sector in a particular country may leave that country highly exposed to changes in trading conditions, which depresses the economy of that country and in turn depresses world trade.

Mechanisms (1) and (2) might appear at first sight to be similar in that they each lead to a situation of crisis in which more can be produced than can be consumed. The *origins* of crisis are different in each case, however. Keynes's "*General Theory* may be regarded as proposing a mechanism of under-consumption;[93] market imperfections leave the rate of aggregate consumption (and investment) too low to maintain full employment. The bracketed clause indicates that the under-consumptionist thesis, in its Keynesian if not its pre-Keynesian form, shows that a crisis would tend to follow if

investment is too *low* rather than too high.

The over-investment, over-production thesis is both more ancient and more modern than Keynes. It is central to current Marxian theories of economic crisis, and indeed has been much emphasised in Mandel's works.[94] Domar,[95] building on Keynes and Marx, suggested the possibility that full employment might break down since while investment is necessary macro-economically, to generate income, it also creates *physical* capacity which it might not be economically viable to use. Over-capacity results, forcing down the rate of growth of investment, and hence also the rate of growth of income, and hence creating unemployment. This type of mechanism has already been noted in the context of the business cycle. If however the long term rate of growth of investment required to avoid chronic over-capacity is lower than the rate of growth of investment required to maintain full employment, then a tendency towards chronic under-employment of the labour force results. This then sets the under-consumption mechanism in operation, since under-employment of the labour force implies an inadequate level of effective demand, which pushes down further the rate of investment that avoids overcapacity.

Matthews (1968) suggested that the persistence of full employment since the Second World War was largely the result of an investment boom made possible by the backlog of investment opportunities created by the Second World War and the inter-war depression. This suggests both an unusually high rate of investment, and also that the various institutions and mechanisms of the economy were geared towards the continuance of this high rate of investment. Once the investment backlog has been cleared, however, there arises the need to adjust to conditions where lower rates of investment are all that is possible. Such a transition is not smooth; the attempt to keep the economy running as before creates considerable danger of over-heating and over-capacity.

Another form of potential crisis was emphasised by Lewis (1949,1978) in his discussions of the historical relationship between core manufacturing economy and peripheral primary producers. Geographical specialisation of production at the world scale implies a definite structure to trade. The industrialisation of Europe, and of Britain especially, generated a trading system in which core coutries sold manufactures to peripheral countries, and peripheral countries sold primary products (agricultural produce, raw materials, etc.) to the core countries.[96] An important exception to this 19th century pattern of trade, however, was that Britain, a core country,

was the world's major exporter of coal before the First World War.

When such geographically divergent patterns of production are in operation, there is no simple mechanism by which a world recession in primary commodities in the periphery will lead to a compensatory increase in manufacturing production; equilibriation does not take place. Weakness of demand for primary products will lead, therefore, to a decrease in the world demand for manufactures, as real incomes stagnate or decline in primary producing countries, rather than increase. This decrease in demand will in turn create recessionary tendencies in manufacturing economies, which in turn weakens demand for primary products.

Such a scenario may be recognised in the world economy in the depressed inter-war period, during which time the prices of primary commodities fell sharply with respect to the price of manufactures.[97] In the industrial countries, two types of economic activity were particularly depressed; firstly, primary production, such as coal-mining in Britain or agriculture in the U.S.A., and secondly those activities, such as shipbuilding, in which demand increased sharply in the First World War, only to decline sharply in peace time.[98] Otherwise, manufacturing industry tended not to be exceptionally depressed during the inter-war years, although the changing geography of world production in textiles, and in cotton particularly, was a force for recession in industrial Britain.[99]

Disproportions in trade have been an important factor in the economic crises of the 1970s. A sharp reflation in the industrialised countries, in response to recession, led to a sharp increase in demand for commodities in the early 1970s, and led to sharp increases in prices.[100] For example, oil prices quadrupled in late 1973. The weak state of demand in the industrial economies in later years, however, led to steep declines in non-oil commodity prices, although oil prices remained at their high levels.[101] Such a situation led to extremely severe crisis in many of the peripheral economies, especially those without oil and with a relatively undeveloped manufacturing base, in which national income was squeezed both by the depressed state of demand for primary products in the advanced industrial economies, and by the very high price of oil, an essential import.[102] Many countries tried to escape the trap by expanding and diversifying their economic base, but this required substantial borrowing from the more wealthy countries. The high interest rates and the slump in demand of the early 1980s added a major debt crisis as well as a trade crisis.[103]

There are clearly several interlocking features in any crisis of the world economy, and monocausal explanations are inadequate. The form of the crisis in an advanced industrial economy will differ substantially from the form of crisis in a third world primary producing economy; in one case, over-production will be the main direct problem, with it becoming successively more difficult to find economically viable uses for new investment, while in the other case the problem of trade is at the forefront. Parochially, perhaps, but necessarily, this thesis concentrates on periods of growth and crisis as they affect a single industrial economy, Britain. There are, however, several excellent works which have attempted to delineate the recent economic crisis on a global scale, but with particular attention to the third world; the works of Frank (1980, 1981a) deserve close attention.[104]

At the general level, an economic crisis comes about when the relationships necessary for smooth economic growth are disrupted. Complex equilibriating mechanisms cease to work, and pressures which cannot satisfactorily be released build up at some points in the system, while the lack of pressure is a key failing at other points in the system. There is then multiple malfunctioning in the economic machinery, sending shock waves throughout the world economy. The notion of crisis is fundamental, but the notion of crisis-proneness is equally important. There can be little doubt that amongst the advanced industrial economies, Britain is unusually crisis-prone, and that within the British economy, manufacturing industry has been especially vulnerable.

The question of British "deindustrialisation" thus gets raised (Blackaby 1979) during a period of economic crisis; crisis-proneness meets its crisis. The basic problem is long-standing; Britain's relative decline can be traced in various forms, as far back as the 1870s.[105] In more stable economic conditions, however, the problem would tend to be seen as one of slow growth in the economy,[106] requiring significant industrial restructuring to cure the weakness, rather than of deindustrialisation. There is as yet no real agreement as to the interpretation of the historical origins of Britain's "industrial disease". The interpretation favoured by the present author would be as follows:

(1) That the possibilities of industrial advance in the 19th century Britain, although genuine, were limited by the continued dominance of "City interests"

(2) That industrial development played a subsidiary role in the late 19th century British economy, while the leading sectors of the

British economy became more closely linked with various forms of imperial development. Britain thus became an imperial economy, while other countries, notably Germany and the U.S.A., caught up industrially

(3) That the First World War, with its devastating effects on Europe, allowed clear industrial leadership to pass to the U.S.A.

(4) That despite this, Britain's industrial progress in the inter-war period was relatively favourable, compared with competitor countries, as a result of having large protected imperial markets.[107]

(5) That the loss of imperial markets in the post-war years removed an important prop from British industry, leaving it less able to compete with other European economies. Furthermore, the Second World War imposed definite economic costs on Britain, in contrast with the U.S.A., without causing the political and economic havoc, characteristic of continental Europe, which required a thoroughgoing post-war reconstruction effort. Institutional conservatism, in combination with an erosion of traditional protected markets, led to an uncompetitively low rate of growth of industrial production being regarded as acceptable. An important aspect of this institutional conservatism has been the persistently high level of military expenditure by the U.K., which diverted research and development away from civilian uses and into military projects; this probably had quite severe adverse effects on Britain's competitiveness in civil industrial production.[108]

In broader terms, deindustrialisation, or the crisis-proneness of British industry, may be seen to be an aspect of the historical process in which Britain had lost an empire but failed to find a role.[109]

The question of British deindustrialisation is a concrete historical question, but one which can be linked to a theoretical notion of crisis-proneness. It is, however, debatable whether theoretical notions can be satisfactorily discussed without at least implicit reference to concrete situations. The present section has been difficult to write, partly because of this; earlier attempts to ground the theoretical content of this thesis in "pure theory" were unsuccessful. Furthermore, when one looks retrospectively at the construction of a research edifice, one becomes aware of a distinction between theoretical "structure", which is an integral component of the final edifice, and theoretical "scaffolding", which although a vital help during the construction progress should be speedily dismantled afterwards. The two most important elements in the

structure of later discussion of Britain's economic geography are the theory of the economic long cycle, discussed in chapter 2 below, and Myrdal's notion of cumulative causation, discussed in the next section.

1.5 Myrdal and the Question of Cumulative Causation

The discussion above has tended to concentrate as much on the dangers of excessive theorising than on the theoretical framework adopted in the body of the thesis below. It is considered that theoretical awareness is important in any research, and that a vital component of a genuine theoretical awareness is the ability to recognise the need for important modifications to existing theoretical structures if these structures make it impossible to assimilate relevant factual information. It is argued that a certain degree of theoretical eclecticism is required, and that rigid adherence to a pre-ordained theoretical structure is a weakness rather than a strength.[110]

As far as economic geography is concerned, perhaps the central macro-scale theoretical debate is between what might be called the "equilibrium" school, and what might be called the "cumulative causation" school. The equilibrium school tends to regard spatial differences in the level of economic activity to be converging towards some equilibrium point which is macro-economically stable, with for example any regional differences in income levels or rates of unemployment tending to converge through time. The cumulative causation school tends to deny this process of convergence towards an equilibrium, and to suggest that, on the contrary, unstable divergent paths of growth tend to be followed, with there being pronounced tendencies, under many circumstances, for richer regions to get relatively richer and poor regions to get relatively poorer. Clearly this distinction parallels the distinction between neo-classical economics, which asserts the automatic tendency for the economy to tend to full employment, and Keynesian economics, which denies this assertion. It is perhaps not coincidental that Myrdal, the main pioneer of work on cumulative causation in the 1950s, had been undertaking work in the 1930s which had in many respects paralleled that of Keynes, relating the question of unemployment to the existence of monetary disequilibrium and to the structural changes in the economy which are required to restore monetary equilibrium.[111] A notion of cumulative causation was already present, though in a different form, in Myrdal's work in the 1930s.

Within academic geography, both viewpoints have been adopted. The "locational analysis" approach, which was on the upsurge during the 1960s, had many features which predisposed analysis to be directed towards an equilibrium approach. Most particularly, in reaction to an

earlier, and often highly descriptive approach, which tended to see places in terms of their "uniqueness",[112] the locational analysis approach tended to argue that analytically there was no fundamental reason why places should be treated differently.[113] Indeed, concepts such as the "random space economy"[114] emerged, which clearly tend to downgrade the role of *systematic* regional differences in economic structure. Perhaps the main question asked by the locational analysts about spatial differentiation was that of why settlement sizes differ; various versions of central place theory were resurrected and developed in order to attempt to explain the range in size of central places, from cities to villages, within a region.[115] This form of spatial differentiation can be encompassed within an equilibrium framework without creating obvious anomalies; regional differences, and international differences, provide more difficult problems. More recent research work in economic geography has tended to discard many of the more rigid interpretations generated by locational analysis, and to consider more directly regional and international differences in the level of economic activity. Such approaches have often been constructed in terms of a specifically Marxist political economy,[116] but both Marxist and non-Marxist approaches to the question of regional inequality rely, directly or indirectly, on some notion of cumulative causation.

Myrdal's (1957) work on cumulative causation can still be regarded as extremely important in this context. The significance of this work lies not so much in the proposition that market forces work in such a way that rich regions or nations become relatively richer and poor regions or nations become relatively poorer (although comparisons between the African famine belt and the American sun belt show that such an assertion still has much validity), but rather in the theoretical framework which provides for connections to be made between dynamic economic movements and the development of patterns of economic inequality (growth versus no growth, increasing per capita incomes versus static or declining per capita incomes, etc.) at a variety of spatial scales. Although the analysis is directed primarily towards spatial problems of development in less developed countries, both internally (relation of region to nation) and externally (relation of nation to world economy), it may readily be adapted to the more developed countries. With respect to these, Myrdal makes the important points that regional inequalities, most specifically in income levels, are liable to be stronger and to show a greater tendency to widen in poor countries than in prosperous

countries since the greater economic power of a state to influence events in a prosperous country will allow more effective egalitarian policies than would be possible in a poor country,[117] and since the "spread effects" of growth in a richer region encouraging growth in a poorer region, will be stronger the greater the national prosperity.[118] If there is a limitation of the validity of the Myrdal thesis it lies not so much in its concentration on a particular group of countries but rather in the implicit assumtion that more prosperous regions will tend to grow more prosperous indefinitely,[119] a proposition which would have appeared reasonable during the middle stages of long boom, when the book was written, but looks less likely under more recent conditions in which economic crisis has hit prosperous countries as well as, but not as much as, poorer countries. Adjustments are made readily enough to broaden Myrdal's context. One very important point, emphasised by for example Wallerstein (1979), is that when the dynamics of expansion become less favourable for an economically more powerful area, or country, there is an intensification of direct economic *competition*, which tends to be resolved at the expense of the previously less favoured area or nation, and which intensifies the disequilibriating spiral of cumulative causation. In the meantime, competition between economically powerful nations also intensifies, leading to an acceleration of differentiation of levels of economic power amongst these nations.

Myrdal (1957) starts his argument by suggesting that the "vicious cycle" is a pervasive aspect of social affairs.[120] This he counterposes to the notion that harmony of interest and stable equilibrium are the norms. He suggests that a static accommodation of forces is generally fortuitous and does not represent a stable equilibrium. Should forces acting in a particular direction be added or intensified, "the whole system would move in the direction of the primary change, but much further", and even the removal of the original pull or push factors would not then be sufficient to neutralise the effects of the disruption. Secondary effects tend not to dampen any disequilibriating force, but rather to reinforce it.

Such a notion is clearly not unique to Myrdal, but Myrdal's formulation is of particular interest in the way it presents destabilising "cumulative causation" as a dominant trend in economic and social processes. Disappointingly, Myrdal made little mention of how attempted homeostatisation within an institution in response to a force can cause an intensification of the effects of that force outside the scope of that institution (example: firms shedding labour

to maintain profits, worsening an economic crisis), but this perhaps is another topic.

Myrdal proceeds to use "the drift towards regional economic inequalities in a country" as an illustration of the process of cumulative causation. He starts by using the device of supposing a significant accidental change; the example he chooses is of a factory burning down.[121] He argues that there will be obvious immediate effects of this primary change, in the case of the factory not being rebuilt, in that workers become unemployed, decreasing local income and demand. This leads to various secondary effects in that "the decreased demand will lower incomes and cause unemployment in all sorts of other businesses in the community which sold to, or served, the firm and its employees". Myrdal then states that a "process of circular causation" has been started with effects which cumulate in the fashion of the "vicious circle".

As stated, Myrdal's explanation of cumulative causation is incomplete in that it fails to distinguish between the finite series of repercussions arising from the simple local income-employment multiplier,[122] which is all that the above illustration shows, and the far broader set of changes implicit in the notion of cumulative causation at the inter-regional and international scale. A purely local depression might result from causes which could be regarded as random, or exogenous, but systematic regional differences require a more systematic form of explanation.

Myrdal's illustration can be extended to show more convincingly the type of factors which lead to a process of cumulative causation. Suppose that a factory burns down, costing 100 jobs locally, and that in each time interval, t, one fifth of the number of jobs lost in the previous interval disappear through local contraction of demand. The sum of jobs lost will be

100 + 20 + 4 + 0.8 + ..., summing to 125.

t_0 t_1 t_2 t_3

If however there is another factory in the locality, also with 100 jobs at t_0, which uses the produce of the first factory as an input to production, and if the factory was set to expand employment at 10% per time period for the forseeable medium term future, in the absence of the other factory closing down, and if instead employment remains static following the fire (with the firm perhaps shifting increases in production elsewhere), then the following series for the sums of job opportunities lost will arise:

$$100 + (20 + 10) + (4 + 11) + (0.8 + 12) + 13 + 14 \ldots.$$
$$t_0 \qquad t_1 \qquad t_2 \qquad t_3 \qquad t_4 \quad t_5$$

For simplicity this series ignores upward multiplier effects foregone through the failure of the second factory to expand. The essential feature to note is that this second series does not converge towards a finite sum; at t_0 the job effect of the factory closure is 100 while by the end of t_6 it will have passes 200 and will continue to increase. The locally visible effect of the later "job losses" is not that actually existing jobs will disappear but rather that the local economy will tend to stagnate, with expected new jobs not materialising. The employment effects of the factory closure will continue to dog the local economy long after the factory closure, through a variety of secondary effects *going beyond the effects of the local income multiplier.*

The British regional problem can be regarded as an example of this process on a grand scale. Between the wars, jobs were lost on a very large scale in coal mining and in cotton especially, and also in a large number of other industries. The regionally highly uneven location of these industries ensured that under conditions of world economic recession the North of England, Scotland and Wales went into exceptionally deep recession through direct job losses in industry, and through associated local income multipliers. When the slump ended, and recovery had set in, these peripheral regions showed a tendency, sustained for over 40 years, from one slump to the next, to grow in employment terms at about one percentage point per annum more slowly than the core regions. The analogy with the small scale example described earlier is clear. In either case a catastrophic event of job loss alters the dynamic properties of the local economy in such a way that for a long time afterwards the local economy involved grows more slowly than the rest of the economy by a fairly steady amount.

The British regional problem is of course more complex than this simple outline suggests. There have been considerable currents, counter-currents and eddies in the detailed course of British regional economic development, which the empirical analysis of chapter 3 onwards attempts to identify. The *dominant* feature, however, is arguably the apparently stable tendency for employment to grow in the core more quickly than in the periphery, with the size of the difference fluctuating, but tending neither to increase nor decrease in the long run.

The attempted clarification of Myrdal's concept of cumulative

causation suggests that a primary change in the local economy changes *the local economic environment* in such a way that subsequent economic forces bearing on the local economy will tend to reinforce the shifts (favourable or unfavourable) occasioned by the primary shift. This does not preclude the possibility, however, that later sets of primary changes may operate in a different direction to the trends brought about by cumulative processes, and may thus modify existing broad structures of economic geography.

Myrdal suggested that with tendencies of cumulative causation predominating over equilibriation tendencies, there is a tendency for regional inequalities to increase through time. This notion is not as unambiguous as it may at first appear. It is quite possible to conceive of a situation in which employment is increasing faster, in percentage terms, in a more prosperous region than in a less prosperous region, even though regional unemployment rates and average income levels were converging. For the purposes of this dissertation the rate of employment change is taken as the key indicator of regional convergence or divergence, although Myrdal, thinking more in terms of third world circumstances, placed far more emphasis on income levels. It should be noted that the presence of relatively stable differentials in regional income levels does not (as is implied by, for example, Hallett 1973 p. 7) refute the notion of cumulative causation; the opening up of regional differentials is often clear only in rates of employment change.

Myrdal suggested that the effects of a prosperous core on a less prosperous periphery could be divided into backwash effects (the core diverting resources from the periphery) and spread effects (growth in the core inducing growth in the periphery), and that the balance between the sets of forces involved determined whether regional inequality was increasing or decreasing. He emphasised, however, that a temporary balancing of spread effects and backwash effects in no way established valid foundations for an equilibrium analysis, since a shift in forces would tip the balance one way or the other. He did, however, suggest that spread effects are stronger in relation to backwash effects in conditions of prosperity, with two important implications, firstly that regional inequalities are likely to be smaller in more prosperous countries than in less prosperous countries, and secondly that regional inequalities are likely to be of greater intensity in cyclical recessions than in cyclical upswings and peaks.

The question of cumulative causation, posed by Myrdal,

dominates much of the empirical discussion in later chapters. Myrdal concludes his chapter on regional economic inequalities by suggesting that there should be closer integration of research on "the business cycle problem" and research on spatial differences in the rate of economic development.[123] The body of this thesis attempts such an integration.

Notes to Chapter 1

1. Kondratieff (1926/1978) is the key early work. For more recent works, see Imbert (1959), van Duijn (1983), Glismann, Rodemer and Wolter (1984). Cleary and Hobbs (1984) suggest that the Kondratieff cycle is readily detectable in price series, but much less clear in output series. See chapter 2 for the present author's own assessment.

2. The basic problem is stated by, amongst others, Robertson (1952 p. 193): "My own feeling is that we had better wait a few centuries, until there are more of these objects under the microscope, before making up our minds whether there is anything 'cyclical' about them". Amongst those who can be said to have made a serious attempt to see if the statistical evidence could support a long cycle theory, but then rejected the case, one may cite the works of Garvy (1943) and Maddison (1982).

3. Based on Department of Employment statistics for index of production industries; see table 6.8. Rowthorn (1986 pp. 1-8) provides some international comparisons.

4. See especially Cambridge Economic Policy Group (1980 pp. 17-28), Fothergill and Gudgin (1979b, 1982).

5. I wish to express my gratitude to those in senior industrial management who granted my request for an interview at what was a time of pressing industrial crisis, and regret that it has not been possible to make more direct use, subject to agreements on confidentiality, of the results of the interviews. Unquestionably these interviews were highly useful in helping me in my attempt to understand what was going on in manufacturing industry at a time of severe recession; any errors in analysis are, of course, my own responsibility.

6. Information on redundancies taken from the *Financial Times*. Information on ownership of large factories in the Northern region based firstly on an unpublished list, compiled by the Department of Employment, Regional Employment Office, Newcastle-upon-Tyne, of factories in the region employing over 500 people in 1973, and secondly on the information on company ownership published annually in *Who Owns Whom*.

7. See chapter 6 for analysis of this phenomenon from another perspective. The "assisted" areas were those in which industrial development was encouraged by various regional policy subsidies.

8. The contrary has of course been argued; for example Cottrell (1981).

9. Kelf-Cohen (1969 pp. 315-316) suggests that the time interval between the Labour Party first talking about nationalisation, and the first real opportunity to nationalise, was so long that at nationalisation the target industries (notably coal and railways) were long past their heyday. The result was thus "that the two most significant nationalised industries are being propped up by the state as they decline". Pryke (1981 pp. 237-266) has suggested that there have been considerable problems of misallocation of resources, and poor use of capital equipment, in the British nationalised industries, but

emphasises (pp. 265-266) that the same industries in private ownership abroad show similar weaknesses. He concludes (p.266), "I suspect that nationalised undertakings function efficiently when economic conditions are generally favourable, *but particularly badly when the economy is in difficulties*" (emphasis added).

10. Pryke (1981 pp. 205-209) reviews the situation towards the end of the 1970s. Demand had been severely depressed during the mid-1970s recession, and had failed to recover properly in the subsequent upswing; substantial employment cuts were made between 1977 and 1979. Despite this, Pryke argues, BSC remained remarkably complacent, doing little to improve efficiency other than by cutting jobs, and awaiting an upturn which would eliminate losses. Instead of an upturn there was a slump, and also a new Government pressing hard on the BSC to eliminate losses by a process of rationalisation.

11. For a more detailed indication of the spatial extent of the regions indicated by the initials (NW, YH, etc.) see Tables A1, A2.

12. See Townsend (1983 pp. 21-24).

13. Unemployment in the UK increased by 1.9 percentage points, from a base of 10.0%, between January 1981 and January 1982, compared with +3.2 points in the Netherlands, +2.6 points in West Germany, and +2.2 points in the USA, each of these countries having a lower base figure for unemployment, and a much smaller increase in unemployment than the UK in the previous year (see ILO *Bulletin of Labour Statistics*).

14. Unemployment started to increase significantly in the UK from May 1980, compared with early 1981 dates for France, West Germany and the United States (ILO *Bulletin of Labour Statistics*). Care needs to be taken in dating the start of any upward trend in unemployment because of international differences in the seasonal regime of employment, resulting in part from climatic differences. Even so, there is little real doubt that unemployment in the UK rose sharply far earlier than in other countries.

15. See for example the conference papers collected in Blackaby (1979).

16. Fisher (1920), also Friedman (1970). There have been various attempts to recast the quantity theory in more sophisticated form, but in terms of the present argument, all that is required is to note that the price level depends on the level of output *as well as* the quantity of money.

17. See for example Keegan (1984 pp. 131-151, especially pp. 147-148). Instead of allowing the public sector borrowing requirement to rise, the normal response in a recession, the Government operated a very tight monetary policy, which required interest rates to be high, which in turn attracted foreign money to London, keeping exchange rates high. Some element of deflation of demand was doubtless expected by the Government, but the deflationary tendency was much worsened by the severe effect the squeeze had on manufacturing industry, as a result of dear money discouraging investment and, more critically according to Keegan (p. 148), as a result of unusually high exchange rates making British manufactures very expensive relative to foreign

manufactures.

18. As, for example, in the essays collected in Floud and McCloskey (1981, vol. 2).

19. See, for example, Astor (1923), Liberal Industrial Inquiry (1928, especially pp. 23-24), Clay (1929), Board of Trade (1932a,b,c,d,e), Jewkes and Winterbottom (1933), British Association (1935), Beveridge (1936), Champernowne (1937, 1938), Singer (1938, 1939).

20. See especially Aldcroft (1970 pp. 23-76). In Aldcroft's chronology of cyclical fluctuations, the 1918-20 boom is covered in 3 pages, the sharp 1920-22 depression receives a single page, the 1922-29 upswing gets 3½ pages, the 1929-32 slump two pages, with it being emphasised that the depression was not as severe as unemployment figures suggest, and the subsequent recovery gets three pages. Even a crude content analysis suggests that much more attention is given to upswings than to downswings, a feature which is common to much of the "revisionist" work on the inter-war years.

21. See for example Howson (1981) and, for international perspectives, the papers in Berend and Borchardt (1986). Recent discussions in British inter-war economic history appear to concentrate not so much on an evaluation of structural change in the British economy, but rather on the question of the development of economic policy (see especially Middleton 1985a), with debate centring on the Keynesian revolution, whether it existed or not, and how important it was if it did exist; see, for example, the debate in the February 1985 *Economic History Review* and the references cited therein, also Booth and Pack (1985).

22. Also Pollard (1969, 1983), Hackett and Hackett (1967).

23. The term "long boom" was often used retrospectively in the 1970s and 1980s to describe the more stable economic conditions of the 1940s, 1950s and early 1960s, and by implication to highlight the severity of depression thereafter. See for example Glyn and Harrison (1980), Gamble and Walton (1976), and, for an earlier use, Hobsbawm (1968).

24. Exceptionally severe weather conditions and fuel shortages in early 1947 led to unemployment temporarily approaching 2,000,000, but this was short-lived, and a temporary aberration in a period of full employment. In January 1947 unemployment stood at 433,000, in February 1,912,000, in March 806,000 and in April 457,000 (*Historical Abstract*, Table 162). The 1947 crisis led to perhaps 2,000,000 person-months of work being lost, or roughly the equivalent of a single percentage point rise in unemployment sustained over a year. Thus the depth of recession in 1947 should not be exaggerated. After 1947, unemployment remained continuously below 750,000 until 1971.

25. The phrase "conventional wisdom" is used in the sense used by Galbraith (1958) to describe a broad set of *theoretical* constructs which may be regarded as common sense in various power groups, and which also inform professional research.

26. This view of events is stated articulately by Stewart (1967). Freeman (1982 p. 209) points out, however, that just after the war Keynesian economists and policy makers were highly

uncertain whether full employment could in fact be maintained, and that the doctrine that Keynesian policies created and maintained full employment developed only *after* there was full employment.

27. Blackaby (1978 pp. 21-28).

28. Notably van Duijn (1983).

29. Whether this "stop-go" cycle was desirable is another question. The problem was not so much that, as argued by Smith (1984 pp. 47-49), the balance of payments acted as a binding constraint on British economic growth, but rather that the balance of payments was *perceived* as representing a binding constraint by policy-makers, and thus perceived as necessitating periodic reversals of expansionary policy. Action was taken *in anticipation of* constraints, rather than *in response to* constraints. Blackaby (1978 p. 27) notes that "the standard argument was that it was better to take mild deflationary action early rather than severe deflationary action late", but Dow (1964 pp. 364-393) (also Hackett and Hackett 1967) has suggested that this type of policy has tended to sharpen fluctuations rather than to dampen them down. Dow concluded that policies should be directed more explicitly towards creating faster sustainable growth, rather than towards fine-tuning the economy.

> The question of stop-go management is of more than historical interest; for "the balance of payments", read "inflation", and several current steering problems come into view. In particular, the policy of holding back economic growth for fear of future inflation is likely to be counter-productive, both in the short run and in the long run.

30. See for example Cairncross and McRae (1975), also Mandel (1978).

31. For an unsympathetic account of the "monetarist revolution" in the Conservative Party, see Keegan (1984). There appears to be no corresponding account from a pro-monetarist perspective, covering both the years before and after 1979, no doubt partly because it is felt that the Thatcherite revolution has not yet run its course. The various papers published by the Institute of Economic Affairs provide in effect a running commentary on the monetarist counter-revolution in Britain.

32. This case is argued in more detail in chapter 6.9 below.

33. There are various useful interim analyses of the slump, for example Sinfield (1981) and Showler and Sinfield (1981), which concentrated on the sharp increases in unemployment in 1980. Friend and Metcalf (1982) extended their research on concentrations of unemployment in the inner cities in the mid-1970s to cover the new political and economic dimensions of slump.

34. It would be an interesting historiographical exercise to examine in depth the origins of the "traditional" concept of "industrial revolution". Bezanson (1922) noted that the term was in fairly common use in early 19th century France, although perhaps largely to develop an idea of economic revolution to match the political discontinuity of the French Revolution. Bezanson

emphasises that the term "industrial revolution" would have been familiar to Marx, via Engels. Marx, in volume 1 of Capital, linked the Industrial Revolution to the development of large-scale machinery around 1780: "The steam-engine itself, such as it was as its invention during the manufacturing period at the close of the seventeenth century, and such as it continued to be down to 1780, did not give rise to any industrial revolution. It was, on the contrary, the invention of machines that made a revolution in the form of steam engines necessary" (Marx 1867/1976 pp. 496-497). Toynbee (1884) is often given credit for popularising the term "industrial revolution", and even for inventing it, yet when he notes that "the essence of the Industrial Revolution is the substitution of competition for the mediaeval regulations which had previously controlled the production and distribution of wealth" (Toynbee 1884/1908 p. 64) he clearly confuses the development of capitalism and the development of industrialism. Cunningham (1892), in the second edition of his *Growth of English Industry and Commerce*, emphasised continuous industrial progress rather than revolution, although the word "revolution" was at times mentioned. By the fourth edition (Cunningham, 1907) the heroic conception was firmly in place. Cunningham starts a chapter entitled *The Workshop of the World* with the ringing phrase "The period, which opened with Arkwright's mechanical inventions, has been the commencement of a new era in the Economic History, not only of England but of the whole world" (Cunningham 1907 p. 609). This would seem to suggest that the heroic conception of the industrial revolution took root at the turn of the century. It is probable that throughout the bulk of the Victorian era, the idea of *progress* was sufficiently dominant to drive out the idea of economic revolution, while fear of the upheavals caused by the French Revolution had earlier dissuaded the writing classes in England from developing any firm conception of an industrial revolution.

The heroic picture of the industrial revolution seems to have become dominant at precisely the point where Britain reached her imperial peak; in the decades since then research has been chipping away at this view. For a recent review, see Cameron (1985).

35. This particular part of the heroic view is strongly criticised by Cain and Hopkins (1986, 1987).

36. Mantoux (1928/1961); the first edition of this work was published in 1906.

37. When, in preparing this thesis, attention was turned to the economic geography of late 19th century Britain, it was a rarity to find statements that the London economy was more dominant, more dynamic than the coalfield industrial economies. Rubinstein (1977, 1981) was at that stage the main proponent of this view. It would seem that a 1980s awareness of the extreme vulnerability of the British industrial base, and the relative strength of Britain's financial base, has led to a substantial re-examination of the question of the structure of Britain's late Victorian and Edwardian economic geography, with for example Lee (1984) asserting London's dominance, and Ingham (1984) implying it. Cain and Hopkins (1987) provide perhaps the most sophisticated statement of this view, paying full attention to the imperial dimension. This is perhaps one of the more subtle examples of how current concerns lead to the past being seen in a new way.

38. There is little doubt that the rate of economic growth in Britain took a downturn in the 1870s (see for example Table 2.1); the problem is one of interpretation. It is considered here that this deceleration in growth represented a classic Kondratieff cycle downswing, and that in the subsequent upswing the most attractive investment opportunities were in new lands abroad rather than at home. This interpretation does little to resolve the question of whether or not British industry was slow to take its opportunities (see for example the review of the "entrepreneurial failure" debate in Payne (1974), also Sandberg (1981)). It is important to note, however, that from the 1880s fast growth *outside* the industrial sector offset slow growth in the industrial sector; it is not sufficient to argue that the British economy as a whole entered a period of relentless relative decline after 1870, simply because of slow growth in the industrial sector. Kirby (1981) has attempted this form of explanation, with the years from 1870 to 1913 being marked as a "descent from hegemony"; the imperial boom, which did much to consolidate London's role as a finincial centre, is treated not so much as an integral part of Britain's economic development, but rather as a cause of weakness in the internal economy. Undoubtedly the imperial project was on such a large scale that distortions were created in the domestic economy, but the existence of these distortions does not mean that Britain's economy was losing its hegemonic position.

Much of the discussion on Britain's long term decline has been based on a false biological analogy in which the organism British industrial capitalism is seen as going through a vigorous youthful phase until a mid-life crisis ensues, after which everything is downhill. Phelps Brown and Handfield-Jones (1952) brought this analogy to the forefront, arguing that there was a "climacteric" in the 1890s, while Coppock (1956) dated the climacteric as being in the 1870s. Yet for a social or economic system, though not for a biological organism, there is always the possibility of "rejuvenation", of the replacement of a downswing by an upswing. The 1870s saw a sharp cyclical downswing, not the beginning of the end of British capitalism. See also the discussion in Floud (1981). While it may well be the case that retrospectively the growth record of the British economy since the 1870s may be seen as patchy, this certainly does not necessarily mean that there has been an *inexorable* process of decline starting in the 1870s.

39. For recent outlines of patterns of capital exports, see Cottrell (1975) and Edelstein (1981). Towards the end of the foreign investment boom, in the years before the First World War, around 6 or 7% of UK gross national product was accounted for by net income from abroad (Cottrell 1975 p. 48, based on figures from Feinstein 1972, Table 3), a remarkably high proportion. Imlah (1958 pp. 59-60) suggests that these British foreign investments were in effect like a revolving fund, with British assets abroad being the main source of funds for new British investment abroad. The links between high levels of capital exports and the political controls of imperialism were strong, but complicated and often indirect; the countries which received most inward investment, such as Argentina, Canada and Australia came under less political control than many countries, for example in Africa, which were ruled more directly from Britain. For a recent discussion of the various controversies surrounding the economic aspects of imperialism see Cain (1980). Substantial inter-continental labour migration to the expanding new territories was also highly important; see for example Thomas (1973), and the detailed migration statistics collected in Willcox (1929).

40. For Canada, see Pomfret (1981). For Australia, see Butlin (1964), Cochrane (1980). For New Zealand see Hawke (1985). For attempts to compare international patterns of development in the "white periphery", including Latin America, see Denoon (1983), Duncan and Fogarty (1984) and the conference papers collected in Platt and di Tella (1985). Obviously the development of these countries involved more than simply an influx of British capital; there also needed to be present the natural resources to allow for economic development in the white periphery, and the substantial tracts of temperate land with the potential for agricultural use represented an important resource base.

41. Fieldhouse (1961), in noting the separation between areas where Britain exported capital on a large scale (Argentina, Canada, etc.) and areas where Britain asserted political control without much economic expansion (large parts of Africa and Asia), suggested that political factors were presominant in the imperial push of the late 19th century; "imperialism may best be seen as the extension into the periphery of the political struggle in Europe" (Fieldhouse 1961 p. 205). Later, Fieldhouse (1984) modified his conclusions, and suggested that the economic factor was important, but not the only factor. He suggested (see especially pp. 460-463) that there was a form of "crisis" in the relations between Europe and the less developed world in the 1880s in which the nearly simultaneous emergence of a number of problems, often non-economic in nature, at various places *in the periphery* goaded the imperial nations into taking more direct political control. An important missing dimension, however, was that the rash of imperial annexation in the 1880s took place at a time of *European* economic crisis. Hynes (1979) pays considerable attention to the relationship between domestic cyclical movements and the course of imperial annexation. Hynes suggested that in the relatively favourable economic conditions up to the 1870s, there was relatively little desire to capture new markets beyond Europe, but that in the depressed economic conditions of the mid to late 1870s and the early 1880s, there was considerable pressure on commercial interests to expand demand by opening up new markets in hitherto neglected areas, notably in Eastern Asia. These commercial pressures led to political pressures, and the pace of annexation became especially fast in Africa, when various European powers were seeking to capture new markets, often in competition with each other. Possibly Hynes oversimplifies the extent to which commercial lobbying could influence political decisions; Hyam (1976 p. 374) emphasises that territory could be annexed only when political and commercial interests *interlocked*. Even so, the introduction of a business cyclical mechanism by Hynes would appear to be an important development in the debate on imperialism.

The expectation of economic gain was an important factor, even though it might well be the case, as commentators from Hobson (1902/1938) to Porter (1984) have suggested, that the costs of maintaining an imperial administration in the "black periphery" outweighed any gains. That the overall economic gains from expansion into the black periphery were ultimately questionable is of course no disproof of the argument that imperial expansion was partly or mainly *motivated* by the quest for economic gain.

42. On the backwardness of London's *industrial* development in the 19th century, see Hall (1962), Jones (1971). Chapter 9 below suggests various parallels between the decline of London's "inner industrial perimeter" (Stedman Jones' phrase) and the more recent manifestations in the 1970s and 1980s of the "inner city problem".

43. An extreme example of this tendency is that of Perry (1975), whose *Geography of 19th Century Britain* concentrates disproportionately on developments in the coalfield regions. Chapter 9 below emphasises the point that the "visibility " of 19th century industrialisation, in terms of changes to the physical environment (cotton mills, coal mines, railways, etc.) and in terms of physical output (millions of tons per annum of coal, iron and steel, etc.), has tended to divert attention from the "invisible" economy, concentrated in London, of trade, finance, administration, etc. It is a fairly standard textbook approach to see 19th century economic development in terms of a coal industry plus a cotton industry plus an iron industry, with commerce occupying merely a chapter in this sequence; Smith (1949) provides an example from a geographer, covering the 19th and early 20th century. Recent work by Lee (1981, 1984), in studying patterns of *employment* change rather than the growth of particular *industries*, comes closer to the interpretation favoured in the text. "For long run prosperity, therefore, the service/consumer economy must be judged to be clearly superior to the industrial export-oriented economy. Thus we should interpret Victorian Britain in terms of the South-East being the most advanced region in the British economy, and making a commensurate contribution to the development of that national economy" (Lee 1981 p. 452).

44. Thus Table A7 shows that in 1913, at a cyclical peak, registered unemployment in London persistently remained at around 7 to 8%. Matthews, Feinstein and Odling-Smee (1982 pp. 81-84) emphasise the distinction between industrial labour markets, especially for skilled labour, in which there is high unemployment in depressions but labour shortages at cyclical peaks, and markets for unskilled urban labour, notably in London, where there was a chronic surplus of such labour. It is an unnecessary piece of special pleading, indicating unawareness of this distinction, to suggest, as Southall (1983) does, that 1913 figures for unemployment, based on the new unemployment insurance scheme, should be disregarded because 1913 was a business cycle peak, and because high measured unemployment rated in London reflect large numbers of casual workers, who Southall regards as being, as a matter of definition, never unemployed, merely "underemployed".

45. Baker and Gilbert (1944), plus discussion. The paper and discussion tended to concentrate on the side issues, rather than the main issues of the rather more useful discussion of Taylor (1938).

46. Dennison (1939 pp. 138-156) argues this point in greater detail.

47. As noted by Pollard (1969 p. 99), and as discussed in chapter 4 below.

48. See also Evely and Little (1960), covering the period between 1935 and 1951, Utton (1970, 1982, 1986), Aaronovitch and Sawyer (1975), Hannah (1976), Hannah and Kay (1977), Hart and Clarke (1980). Traditional neo-classical economics, up to the 1920s, suggested that after firms had reached a certain size, diminishing marginal returns set in, placing limits to the expansion of firms. As the theory of imperfect competition developed (Sraffa 1926, Robinson 1933, Chamberlin 1933/1962), partly in response to the increasing concentration of production which was already apparent (cf. Hannah 1976 p. 105, Prais 1976 p. 5), it became clearer that the distribution of firm sizes was determined less by a hypothetical point of diminishing marginal returns than by degrees of access to

capital (Kalecki 1954 pp. 91-95). Large firms find it easier to raise the capital to expand, although as Utton (1982, 1986) notes, this does not necessarily mean that large firms tend to be more profitable than small firms. In practice, the trend towards increasing concentration of industrial production has been dominated by mergers and take-overs (larger firms with greater finincial resources swallowing up smaller firms) rather than by any slight tendency for larger firms to generate faster internal growth than smaller firms (Hannah 1976, Hannah and Kay 1977).

49. See also Clarke (1985), based on a detailed examination of the chemicals firm ICI. Various papers collected in Taylor and Thrift (1982, 1986) and in Hamilton and Linge (1981) examine aspects of the recent increasing internationalisation of production, often channeled through multinational firms, from the viewpoints of a variety of countries. Froebel, Heinrichs and Kreye (1980) pointed to the emergence of a "new international division of labour" in which the increased degree of fulfilment of various technical preconditions (improved transportation, greater sub-division of the production process, etc.) have made it increasingly possible for large corporations to establish routine production facilities in low wage countries, rather than in the high wage countries which represent the final market. As Dicken (1986) indicates, however, this process is sectorally uneven, being concentrated mainly in "light" industries, such as electronics and textiles, in which it is technically relatively easy to switch production, rather than in the more immobile "heavy" industries. Analysis of employment change in Britain in the mid-1970s (chapter 6 below) suggests that the peripheral industrial regions of Britain were starting to suffer considerable employment problems by being outcompeted on cost terms by newly industrialising countries in the internationally mobile sectors. In assessing changes in Britain's employment structure, the increasing internationalisation of production is a feature which cannot be ignored. Neither, however, should the importance of this feature be exaggerated; Britain's problems of industrial job loss since the mid-1960s still need to be explained primarily in terms of international economic recession, and in terms of declining competitivity with respect to other *advanced* industrial nations. Furthermore, even if a foreign multinational closes a factory down in Britain, this would usually be due to recession, rather than to external control as such. Clarke (1982 p. 93) suggests with respect to multinationals that "what needs to be asked, therefore, is not only why jobs are lost in the UK, but also *where* production is going to" (emphasis in original); one suspects that in a context of deep international recession the answer is often, but not always, "nowhere". The impact of *recession* is primarily to retard production, rather than to accelerate the geographical transfer of production.

50. Hood and Young (1982) provide an account of the events leading to major job losses, and in some cases complete factory closure, in factories owned by six major foreign employers in Scotland. The scale of the "retreat" of the multinationals can be gauged by the fact that over a period of several years very nearly 40,000 jobs were lost in these firms (Hood and Young 1982 p. 41). The multinational question has perhaps been of particular significance in Scotland because of the extent, emphasised by Hood and Young, to which US corporations had earlier used Scotland as a first staging-post in European expansion; earlier industrial expansion through regional policy in other development areas (Wales, North East England etc.), which were closer to main *national* markets, depended more on decentralisation in British industry rather than on industry coming in from abroad. Townsend (1983)

identifies major job losses by various foreign-owned multinationals in other areas.

Undoubtedly some areas can be deeply affected by the geo-economic strategies of multinationals, and their advances and retreats in particular areas, as Hood and Young (1982) note, but there is still a need for caution in assessing the nature of job losses in a multinational firm.

It is relatively easy to point to particular factory closures or job losses during a recession and to state that these job losses occur in multinationals or non-multinationals; the question of assessing the *significance* of multinational control poses some difficult analytical problems, as indicated in the debate between Hillier (1985a,b) and Townsend and Peck (1985b); see also Townsend and Peck (1986). This debate centres on the implications of research findings showing that during the slump job losses in Bristol were concentrated in foreign-owned multinationals and British-owned multinationals, but relatively slight in "indigenous" firms. Townsend and Peck interpret this as suggesting there is no real tendency for foreign-owned firms to shed jobs more quickly than British-owned firms, and that if anything the rate of job loss in foreign owned plant has been less than in British-owned plant. Hillier argues that instead the critical distinction is between indigenous firms and *all* multinationals, arguing that there is in principle no difference between British-owned multinationals and foreign-owned multinationals. This interpretation is perhaps questionable in that firstly no account is taken of the *degree* of multinationalism of British firms (there is a lot of difference, for example, between a predominantly British firm with relatively small-scale operations abroad and a fully multinationalised firm), and secondly that a factory in Britain owned by a British multinational is part of the core country production, while a factory owned by a foreign multinational is by definition an *outpost* of production; this might lead to systematic differences in economic performance.

There are clearly several definitional problems which need to be sorted out. One suspects, along with Townsend and Peck, that *size* rather than degree of multinationalisation is the critical factor; Townsend and Peck (1985b p. 328) note that in the UK as a whole, using figures from all private employers in manufacturing, employment declined by 9.2% between 1977 and 1982 in establishments with between 20 and 49 employees, by 20.5% in establishments with 50-99 employees, and by as much as 39.8% in establishments with over 1,000 employees. Size of establishment is of course positively correlated with size of firm, and with degree of multinationality; establishing which is the critical causal factor is difficult.

51. Perhaps the clearest statistical indicator of this is in the balance-of-payments statistics on direct investment (*Economic Trends*, various). In 1985, for example, foreign direct investment in the UK stood at £3,370m (£2,393m at 1980 prices) while UK direct investment overseas stood at £7,307m (£5,187m at 1980 prices). Thus the net direct investment balance stood at £-2,794m in 1985 (1980 prices) compared with an average of £-2,309m between 1977 and 1985, and a much smaller balance in earlier years. UK direct investment overseas doubled between 1977 and 1979, halved between 1979 and 1982, and increased by a third between 1982 and 1985, matching the phases of the business cycle. The *fall* in direct investment overseas during the slump, as opposed to the rise in earlier years, suggests that the major job losses in the slump were due primarily to recession rather than to firms transferring production abroad. In the longer term, however, the growing tendency to place investment

abroad rather than at home must inevitably slow down the growth of employment at home.

52. See especially Buswell and Lewis (1970) and Howells (1984). Buswell and Lewis (1970 p. 301) note that within the manufacturing firm the locational requirements for research establishments "resemble those of central office activities rather than manufacturing, in that the inputs and outputs are principally informational in character". Thus a core location, rather than a peripheral location, is indicated, although Howells (1984) notes a strong tendency for R & D establishments to be decentralised to less urbanised areas *within* the South East. There is a likelihood that industrial innovation, as well as research and development, will tend to be concentrated in core regions. Oakey, Thwaites and Mash (1982) suggest that there is a particularly strong tendency for product innovation, which is often dependent on highly confidential in-house research, to be concentrated in core regions, while process innovation, usually taking the form of purchased machinery, is far more spatially diffused. Thus productivity tends to increase in both core and periphery, while new products tend to be developed in the core regions.

53. Keeble (1976 p. 15).

54. Also Keeble (1980c),Cambridge Economic Policy Group (1980 pp. 17-28).

55. Thus, in the East Midlands between 1968 and 1975, employment in high investment industries *fell* by 16.9% in the cities and *rose* by 17.5% in rural areas, while employment in low investment industries fell by 15.1% in the cities and by 12.8% in rural areas, a much smaller range of performance (Cambridge Economic Policy Group 1980 p. 23; Fothergill and Gudgin 1982 p. 96). Fothergill and Gudgin emphasise if industrial floor space in a city can be regarded as fixed, or at least not readily expandable, and if new investment requires an increase in the amount of floor space per employee, there is a technical necessity for industrial employment in the city to decline, even in an expanding industry (Cambridge Economic Policy Group 1980 p. 22; Fothergill and Gudgin 1983).

56. The full classification is given in Fothergill and Gudgin (1979 p. 182). The inclusion in a single group of the Outer Metropolitan Area (the area immediately surrounding London), and such "industrial non-city" areas in the periphery as Cumberland and Westmorland, Yorkshire Coalfield, Central and East Welsh Valleys, West South Wales, etc., suggests the identification of two separate regional circuits of urban-rural shift; a core circuit based on the expansion of the London economy in "greenfield" areas and a peripheral circuit based more on long-distance decentralisation of industry.

57. See also Townsend (1982). Meager (1984) provides some cautionary notes concerning the use of redundancy figures as an indicator of net employment change in a particular area during a recession, with compulsory job loss through redundancy representing but one component of net job loss. The general position is likely to be that redundancies will tend to represent a higher proportion of total net *industrial* job loss in areas which are industrially depressed, because of the greater urgency of shedding labour on a large scale than in an undepressed area, but that redundancies will possibly tend to represent a higher proportion of total *net* job losses in *undepressed* areas where job growth in services to some extent counteracts job losses in manufacturing. This, it is suggested, explains some of the patterns noted by Meager (1984 p. 463).

There are various technical difficulties in the interpretation of redundancy data, but two substantial advantages; firstly a broad, if imperfect, profile of the geography of job loss in recession can be produced without having to wait for Census of Employment results, and secondly, as in Martin (1982), the time profile of major job losses in total and by industrial sector, in a particular area on a month-by-month basis may be charted, providing a level of detail which can be matched by no other source. In this context, it needs to be noted that redundancy figures provide a far more accurate indication of patterns of job loss than do unemployment figures, a point emphasised in chapter 7 below.

58. For a general picture, see Townsend (1983), where use is made both of redundancy figures and *Financial Times* press reports to outline spatial patterns of employment change in the slump. For various uses of the 1978 and 1981 Censuses of Employment, see Owen, Coombes and Gillespie (1986) and Champion et al. (1987 pp. 60-75). These sketch out the main patterns of change without entering into great detail, although the important point is made that in the post-1979 slump job loss was not concentrated primarily in the larger cities, as appeared to have been the case (Fothergill and Gudgin 1982, but see also chapter 6 below) during the 1970s. Chapters 6 and 8 below appear to be the first real attempt to provide a comprehensive and detailed account of the geography of employment change across relatively short time spans using Census of Employment data.

59. It is genuinely puzzling why so little academic work has been done on the geography of unemployment during the 1980s given that maps of unemployment by region have been a fairly standard feature in newspaper reporting. One gets the impression that the patterns are regarded as being so well known that little comment is required. Thus, despite the centrality of unemployment as part of British social life, and despite the obvious connections which can be drawn between the geography of unemployment, the geography of job loss and the geography of industrial decline, the question of unemployment is treated very casually in the papers on the geography of deindustrialisation in Martin and Rowthorn (1986); only one map or table of unemployment is produced (Hudson 1986 p. 204), and that for a single region. Similarly, unemployment is hardly touched upon in the papers in Danson (1986), other than for a brief discussion of unemployment in a single relatively prosperous county (Adams and Kraithman 1986).

Various aspects of the geography of unemployment during the slump have been covered in Frost and Spence (1983), Green (1985, 1986) and Armstrong and Taylor (1985). It is a matter of considerable surprise, however, that the month by month evaluation of published regional and local unemployment statistics, conducted by the author throughout the slump and worked into a more concise and more coherently argued form in chapter 7 below, appears not to have been conducted by anyone else. In 1980 it was the obvious thing to do!

60. See also, for South Wales, Manners (1964). The annual meeting of the British Association for the Advancement of Science was, for many years, marked by the publication of detailed geographical surveys, including coverage of economic and industrial aspects, of the host area.

61. This extreme position now appears rather old-fashioned. As Lakatos (1973 p. 2) notes, "One can today easily demonstrate that there can be no valid derivation of a law of nature from a finite number of facts". He suggests that the basic reason why "we still keep reading about scientific theories being proved from facts"

results from a need, historically particularly important in the scientific debate with theology, for scientific statements to be proven *beyond doubt*. Yet an element of doubt necessarily still remains, and this level of doubt can be very significant in the social sciences.

62. Harvey (1969 p.87) lists some statements of this basic position while, more recently, Johnston (1983 p.49) asserts that "all description, however sophisticated, must be theoretically led." For this statement to be true, however, "theory" needs to be defined so broadly as to make the usefulness of the definition questionable. In effect, anything which involves the use of language (description) would be classed as a theoretical statement, while anything which does not involve the use of language (direct experience) remains at a pre-theoretical level. A man notes that the grass is green and is making a theoretically led statement, while the sheep simply eats the grass without recourse to theory.

It seems more sensible to regard the start of theory as lying not in description but rather in *thinking about* description. One starts off by experiencing and describing, as in the empiricist model, but the human mind is not simply a blank tablet on which experiences are inscribed, but instead actively reconceptualises the experiences. When the attempt is made to fit descriptions of experiences into a pattern, to find rules of description to fit a large number of experiences, the process of theorising has started. When attention is turned to the question of finding methods of establishing the validity or otherwise of particular types of descriptive statement, the theoretical process is well advanced. It is only when description has already become sophisticated that it is necessarily theoretically led.

It needs to be recognised (see note 64 below) that empirically derived observational theory is not the only possible, or the only important, type of theory. Indeed analysis would be severely impoverished if it had to base itself solely on the processing of observation. Recognition should also be given to what might be called "mythological theory" in which the ability of the human mind to conceptualise and reconceptualise is focused not on the accumulation of observation but rather on trying to establish the meaning of the world (physical, social) as a whole.

63. This is an explicit rejection of Friedman's (1953) position in his *Methodology of Positive Economics*. Friedman argues that the degree of realism, or otherwise, in economic analysis is irrelevant so long as "predictions" can be made. This "instrumentalism" denies the search for truth or understanding as a valid criterion of social science and sees theories as devices; it has for long represented a major component of "mainstream" economics and has also been influential, as Gregory (1978 pp.40-42) notes with regret, in human geography. Gregory cites and criticises the following passage from Haggett, Cliff and Frey (1977 p.517): "From a theoretical point of view, it might be argued that the ability to forecast accurately should represent an ultimate goal of geographical research, in that this ability ought to imply a fairly clear understanding of the processes which produce spatial patterns." Forecasting is thus placed above understanding, yet forecasting methods basically rest on curve-fitting rather than on the identification of underlying causes. The production of accurate forecasts by curve-fitting, and without detailed *prior* understanding of causal factors, is a matter of *luck* as much as anything else, and depends largely on whether or not the forecasting period covers a critical phase in which changing background conditions disrupt the smooth curves, often based on moving averages, which are being extrapolated. Trusting to chance rather than to

understanding is not the way towards scientific progress. Neither does an accurate prediction imply understanding of the basic processes. A gambler could have considerable predictive success through backing the favourite in every horse race without knowing much about horses. Time series in socio-economic data can be even easier to predict, even without an understanding of processes, because of the existence of several smooth or regularly cyclical time series to aid extrapolation; the critical question is whether background conditions are stable enough to keep the curve smooth in perpetuity.

64. The idea of theory being "liberating" might be regarded as a strange conjunction, especially if theory is built up from finding the links between inter-connected observations, as in the empiricist model. One could try to hold that there is an essential distinction to be drawn between fact and value, and that the attempt to base scientific theories on anything other than fact, or on hypotheses whose factual status could be tested, is an irrational deviation. In this framework of argument, if one wishes for a more just society, or for irreversible political change to bring about a "free" society, this is a matter for oneself as a private individual, but cannot be justified in terms of social science.

This form of demarcation does not seem particularly satisfactory. The question to be asked is not where to draw the line between science and non-science, but rather what type of human activity is science a part of. There are certain basic questions human beings ponder over in *any* society, whether organised science is present or not; mortality, the origins of the world, the origins of life, the origins of power in society, the question of the ideal society (in a past Golden Age, or in the future), and so on. The attempt is always made to try to provide an answer to these questions in order to assuage uncomfortable doubt, and bodies of thought build up in which to frame explanations for these questions in socially acceptable ways; myth, ritual, religion, early philosophy, and, more recently, science attempt to provide various forms of explanation to basic questions. *The significance of science is not that it banishes myth, but rather that it attempts systematically to produce well-validated myth.* Darwin, Marx, Freud and Einstein are all powerful begetters of modern-day mythology.

The bulk of theory, even at a sophisticated level, does not originate in "scientific method", and does not come from the empirical realm, but rather emerges from flights of imagination in which the attempt is made to make sense of the world at a very broad level. The old-fashioned empiricist view of the mind as a blank tablet on which experiences come to be inscribed does less than justice to the human mind; the important feature is that the human mind can reach realms beyond direct observation and experience. One can suggest that there are two main types of theory: myth theory, which uses the full faculties of human imagination to try to recreate the world in the mind, and observational theory. Science, and the philosophy of science, concentrates on the latter, regarding it as the source of all reliable human knowledge, provided account is taken of any imaginative leaps required to convert existing empirical theory into a higher-order empirical theory. It can be tentatively suggested, however, that myth theory is more basic than observational theory; science does not replace myth theory but changes it.

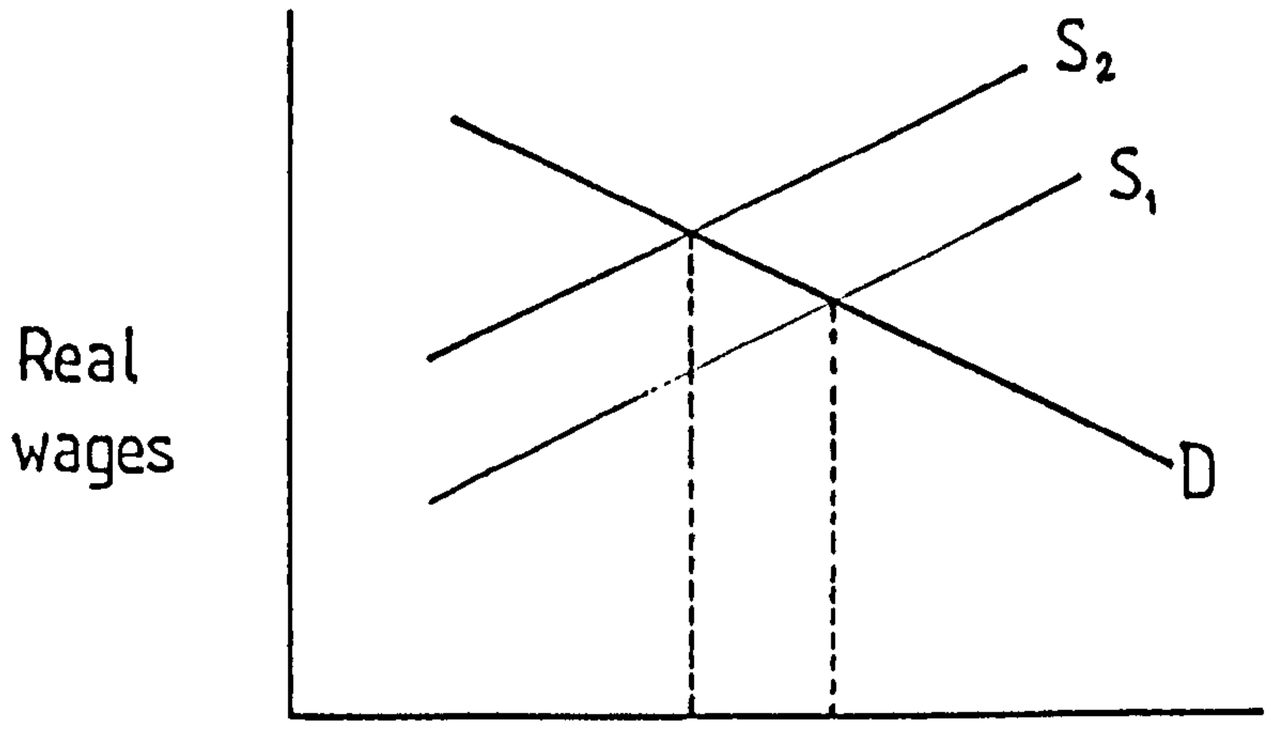
Now consider the question of values in social science. The notion of the centrality of myth theory places values right at the centre of the agenda; if social theory is to tackle the basic questions of society, it is impossible to ignore the myth questions

concerning the meaning of society, and the human ideals (freedom, dignity, justice, etc.) which weave the web of social thinking. Values are there, right at the start, and social theory always concerns questions of human emancipation, even if such questions are sometimes politely ignored. The scientific approach does not remove values or myths, but it provides the possibility of rigorously testing values and myths. Science can show, for example, that the myth that all life was created at a particular time is a refuted myth, while the myth that human life gradually evolved from lower life forms over a period of millions of years is provisionally acceptable.

In a complicated society, and particularly one in which class antagonism, rather than deference, prevails, competing mythologies in the form of opposing political world-views develop. What to some would appear as progress towards freedom might appear to others as descent into barbarism. The purpose of any committed social scientist, of whatever political hue, is to win the battle of ideas, attempting to refute scientifically the claims of the upholders of different and conflicting views, and attempting to create both a viable myth and a viable science to support one's own views. Marx's creative output, for example, can be much more readily understood in these terms than in "purely" scientific terms or "purely" mythological terms. So, certainly it is important for basic standpoints in social theory to be fully backed up by detailed and rigorous empirical analysis, otherwise one is making concessions to opponents. It is even more important to realise that all basic arguments in the social sciences are at root arguments over politics, over the debate on which way it is desirable that human society should proceed.

These arguments as they stand are provisional. No detailed references to back up this argument is provided, because the author is at present unaware of how far this type of argument has been pursued, and in what directions, by other writers. In puzzling over the argument in this note, the work of Feyerabend (1975, 1978), and its undermining of the claims of the methodologists of science, has been helpful. Feyerabend appears to be suggesting that the way forward in developing a philosophy of knowledge lies more in the realms of anthropological science than of physical science. Scientific method in Feyerabend's framework might be useful for what Kuhn (1970) described as puzzle-solving, and might be a useful propaganda weapon for the scientists, but cannot tackle broader questions, such as the question of the leap towards major discoveries, or the role of science in society. The "anthropological model" is, it seems, potentially far more subtle, and could go a long way towards upholding Harvey's claim (1973 pp.127-128) that the philosophy of social science is potentially far superior to the philosophy of natural science. There is undoubtedly scope for much detailed reflection on this point.

65. For works in this idiom, see for example Benjamin and Kochin (1979), who suggest that while there was some slump unemployment in the early 1930s, in other inter-war years unemployment was primarily voluntary, in that people preferred leisure to work, also Minford (1983) where trade unionism is seen as the villain behind mass unemployment. Hayek (1984) presents a similar view. It is now commonplace to attempt to explain mass unemployment in terms of "labour market imperfections", meaning basically that labour is (allegedly) pricing itself out of the market by charging excessively high wages, thus preventing the normal market-clearing mechanism from working. The gist of the argument may best be summarised with the aid of a diagram.



Curve S_1 represents the supply curve for labour in a totally competitive labour market, while curve S_2 represents the supply curve for labour in a monopolised (unionised) labour market, where organised labour forces up real wages. A unionised labour market, the supply-siders argue, reduces the equilibrium level of employment and thus creates unemployment which can be regarded as voluntary through being caused by workers rather than capitalists.

As matters stand, this is a rather crude interpretation of unemployment, as the historical dimension has been collapsed out of existence; there is no indication of the point that unemployment tends to come about as a result of job losses at particular times in particular industries. A more sophisticated version of the model, associated with Pigou (1933) and resurrected by Casson (1983),would suggest that in the first instance unemployment could be regarded as structural as a result of job losses in particular industries, and in the *second* instance as a result of the failure of the labour market to adjust to new conditions (wages being too high). The basic Pigovian picture (see also Pigou 1927) is for unemployment to be created during cyclical recessions, but for there to be a tendency towards *full* employment being regained in cyclical upswings, given wage rate flexibility in a free market. In this framework of analysis, at least part of the unemployment created during recessions could be attributed to a failure of wages to fall sufficiently in declining industries.

While obviously if labour is cheaper more labour is likely to be employed, it is doubtful whether the relationship is strong enough for increased wage flexibility to have *substantial* effects on the level of unemployment. The basic production decision is of how much to produce in the light of expected demand, and not of how many people to employ given a particular real wage rate. This being the case, the obvious reluctance of firms to produce an excess of goods for which there will be no market will tend, at the aggregate scale, to outweigh the incentive to increase employment that a reduction of wages would create.

66. This clause indicates the possibility of an empirical observation being *incorrect*, or at least distorted, as a result of an inappropriate theoretical structure guiding observation.

67. See for example a recent exchange in *The Guardian* (Milne 1987, Layard and Nickell 1987a). Marris (1987 p.38) suggest that Layard and Nickell were "replying to what appears to have been an inept

attempt by a reporter on *The Guardian* to survey the present state of economics", a form of phrasing suggesting more a closing of professional ranks than a reasoned refutation of a case. But then, later in the same paper, Marris (1987 p.44) suggests that left-wing economists talking about deindustrialisation are in effect beyond the pale!

68. The attempt by the Government in the early 1980s to cut the social sciences down to size is all too easily remembered. Contained within plans to cut back the university sector there were plans to create a substantial net shift of resources from social sciences, seen by the new Government as a form of organised dissent, and towards natural sciences, areas of research in which Government policy was less likely to be questioned.

69. Summaries of the basics of the Keynesian-monetarist debate are given in Chrystal (1979), Levačić and Rebmann (1982), Smith (1984) and Pratten (1985). The bulk of the debate on the academic levels concerns the interpretations given by the various schools on particular key issues (the causation of inflation, the interpretation of unemployment, the significance of money and of wages, and more detailed questions within these subject groupings). Technical papers and monographs advancing the debate on these issues are of course numerous; it would be pointless to try to detail all the debates in a single footnote. Any reasonably competent recent text-book on macroeconomics (for example Vane and Thompson 1982, Greenaway and Shaw 1983) would provide outline discussion of the main schools of thought on the more important issues.

70. Keegan (1984) provides perhaps the hardest hitting critique of this type, and is essential reading for anyone trying to understand the early Thatcher years. Keegan's work has a structural weakness, however, which is characteristic of most neo-Keynesian polemic on monetarism. Thus, discussion on the pre-1979 years concentrates almost exclusively on the "hi-jacking" of the Conservative Party by the "economic evangelicals", while discussion of the post-1979 years covers both economic policy and the rather disastrous out-turn of events. The critical missing component in the discussion was that economic performance was already very poor during the 1970s, with Thatcherite monetarism being in part a response to this; Britain's economic problems were already severe *before* 1979.

Keegan is surely correct, however, in arguing that Mrs. Thatcher's economic experiment made the slump far worse than it need have been. After the 1983 General Election, however, economic policy took a more pragmatic turn, with attention being concentrated on maintaining, in post-slump conditions, steady 3% growth and low inflation. It probably has not escaped the attention of the thinking sections of the Conservative Party after the 1987 election that an almost unbreakable political hegemony could be attained if unemployment were to be reduced substantially through a gentle acceleration of growth. One can suggest that monetarism, in its evangelical form of the 1970s and early 1980s, is already dead, and that a more pragmatic but still "right-wing" set of policies and ideas is in place, sheltering under the name of market economics rather than of monetarism. In a sense the question raised by Tomlinson (1986) of "monetarism: is there an alternative?" is already obsolete.

71. Thus in the mid-1970s recession, unemployment passed 1½ million (over 6% of the workforce) while the rate of inflation was around 20% for long periods; in the early 1960s, unemployment rates of less than 2% and inflation rates of less than 5% were characteristic.

72. See for example Joseph (1976), a collection of speeches and articles by a politician at the centre of the Thatcher revolution attacking the inflationary bias of Keynesian expansionism, noting that the inflation which was created was actively destroying jobs, and advocating the move towards a "social market" economy dominated by private enterprise.

73. These basic themes permeate all Robinson's work, as even a fairly brief examination of her collected papers (in five volumes) shows. See especially Robinson (1965, pp.92-124, 1979; pp.168-216, 1980 pp.96-134). In general, the Keynesian revolution on Keynes's home ground of Cambridge has not gone the same way as the Keynesian revolution elsewhere, where the neoclassical synthesis has been stronger. The "Cambridge view", expresses with great vigour by Joan Robinson over several decades, has tended to concentrate on the importance of Keynes' *break* with neo-classicism, and not with aspects of the *General Theory* which did not break with earlier traditions. Links tend to be made with the Polish economist Michal Kalecki who, independently of Keynes, derived a theory of effective demand based ultimately on Marx's analysis, and especially on volume 2 of *Capital*.

Basic introductions to *post*-Keynesian economics, not to be confused with neo-Keynesian economics, are presented in Robinson and Eatwell (1973), at the first year undergraduate level, and at a more advanced level in Kregel (1975), Eichner (1979) and Sawyer (1982). Feiwel (1975) has produced a comprehensive intellectual biography of Kalecki, while Sawyer (1985) provides a discussion of Kalecki's economic theories. The *Cambridge Journal of Economics* is the main vehicle for the publication of technical papers in the post-Keynesian school of thought.

74. Works such as Hicks (1937), at the technical level, and Samuelson (1980) at the text-book level were central to the neo-classical synthesising, which has tended to generate a "Keynesian" macro-economics and a "neo-classical" micro-economics. In recent years the "Keynesian" part of the neo-classical synthesis has come to be seen as discredited, and the "neo-classical" part has come to the forefront. It is, however, "Keynesian economics", in its synthetic form which has been seen to fail, and not the "economics of Keynes". The proposition that a limited degree of state intervention in the economy is necessary and sufficiant to maintain full employment has clearly been falsified by events, while the more basic argument of Keynes that the capitalist economy can reach an equilibrium position at substantially *less* than full employment has, if anything, been reinforced by recent events.

75. W.H. Beveridge (later Lord Beveridge) was an important figure in the empirical analyses of labour markets, and in the framing of social policies to deal with labour market problems, without ever having produced what could be regarded as a convincing *theoretical* analysis of why unemployment, and mass poverty,should be persistent features in a capitalist economy. This purely empirical bias can be seen very clearly in Beveridge (1936, 1937), although a strong Keynesian gloss is placed on events in Beveridge (1944). Despite these relatively weak theoretical underpinnings, Beveridge's main works (Beveridge 1910, 1942, 1944) had a very strong influence on practical policies, in the setting up of unemployment exchanges and unemployment insurance around the time of the First World War, and in the development of the "welfare state" after the Second World War.

76. See Cutler, Williams and Williams (1986 pp.1-36). A point which perhaps needs to be emphasised in discussing the welfare state is that its founding principles were based very much on the state

restructuring of the working class rather than on the redistribution of income *between* classes (see Cutler et al. 1986 pp.10-19). There is no intrinsic reason why this conception of the welfare state should become ossified; indeed a shift in emphasis from collective insurance (the working class paying into a common fund to insure against collective and individual misfortunes) to redistribution would seem to be an important step forward.

77. Keynes's "concluding notes on the social philosophy towards which the General Theory might lead" (Keynes 1936 pp.372-384) may perhaps be taken as the basic statement of his views, although it is of course possible to quote from other, perhaps more ephemeral, pieces of writing. Keynes argued strongly for the removal of rentierism, of the squeezing out of the class whose economic basis was the exploitation of the scarcity of capital. Rentier freedom, the freedom of finance capital, might be central to laissez-faire capitalism, but is an obstruction to "liberal collectivist" (cf. Cutler et al. 1986) capitalism. Keynes recognised the necessity of a certain degree of state involvement in the economy, to maintain high levels of employment, and more generally to prevent the system from collapsing, but he argued that the level of state intervention should be set in such a way as to maximise the scope for entrepreneurial initiative (by ensuring that the level of effective demand was high enough for new ventures to succeed), and thereby to create a high level of employment. Keynes insisted that state involvement in the economy was not an end in itself, but rather a means to the end of reforming market capitalism so that the system actually lives up to the claims made for it, namely that it guarantees maximum welfare for all.

78. It is easy with hindsight to recreate the 1950s and early 1960s as a golden age of consensus on basic economic policy. There was undoubtedly agreement on the point that continuous full employment and rising living standards could be maintained, and quite probably nobody seriously argued that any other state of affairs was more desirable, but beyond this central point there was considerable scope for disagreement on other issues, such as the degree of Government intervention in the economy. On this line of argument, the consensus starts to split when unemployment starts to rise, opening up disagreements on fundamentals.

79. See for example Gamble and Walton (1976), Harrison and Glyn (1980).

80. The notion of crisis is central to modern Marxian theorising, and yet it is difficult to encounter any detailed specific discussion of crisis in Marx's own work, particularly if attention is confined to *Capital*. The one place in Marx's writing that the current author has been able to find the outlines of Marxian crisis theory is in the *Communist Manifesto*: "Modern bourgeois society .... that has conjured up such gigantic means of production and of exchange, is like the sorcerer, who is no longer able to control the powers of the nether world whom he has called up by his spells .... It is enough to mention the commercial crises that by their periodical return put on its trial, each time more threateningly, the existence of bourgeois society .... And how does the bourgeoisie get over these crises? On the one hand by enforced destruction of a mass of productive forces; on the other, by the conquest of new markets, and by the more thorough exploitation of the old ones. That is to say, by paving the way for more extensive and more destructive crises, and by diminishing the means whereby crises are prevented." (Marx 1848/1967 pp.85-86).

The *Communist Manifesto* is, despite its brevity, undoubtedly the pivotal work in the development of the Marxian system of analysis, yet nowhere in the *Communist Manifesto* was the alleged crisis tendency in capitalism linked to the alleged tendency of the rate of profit to fall. This would seem to indicate that the falling rate of profit, regarded as central to the Marxian scheme by, for example, Mandel (1975), is in many respects a peripheral component of Marx's analysis. Marx's later works (his *Grundrisse* notebooks, *Capital*, *Theories of Surplus Value*) are, in a sense, works of technical economics, trying to uncover the background reasons for capitalist growth, and for occasional collapses of such growth. The theme of crisis generally remains hidden, but close to the surface, although occasionally it emerges, as when in *Theories of Surplus Value* (vol. 2, chapter 17) Ricardo is criticised for setting up a theoretical framework in which the possibility of crisis is excluded (Kenway 1980 draws a parallel between this and Keynes's critique of "classical theory"). Mostly, however, the issue of crisis is submerged, with various discussions of themes being implicitly linked to the question of capitalist crisis introduced in the *Communist Manifesto*; Marx went considerably beyond his relatively simple 1848 linkage of crisis to overproduction. Yet the notion of crisis in the later works is often very vague; crisis tendencies are taken as given, while several other potential aspects (overproduction, underconsumption, disproportionality, the rising organic composition of capital, overinvestment) are taken as *possible* causes of crisis. Perhaps the most interesting of Marx's perspectives on the business cycle occur not in volume 3 of *Capital*, which concentrates on the law of the tendency of the rate of profit to fall, but rather in volume 2, in which possible disjunctures in the processes of monetary circulation and commodity production are examined in detail.

The clarification and extension of Marx's analyses of the business cycle is, or ought to be, an important project in economic theory; Kuehne (1979, vol. 2) provides an important springboard for such an analysis, usefully drawing points of comparison and contrast between Marxian and academic theories. The act of writing this footnote has perhaps modified the opinion stated in the main text, in that the centrality of crisis theory in Marx's writing is again re-emphasised, but perhaps more thought and discussion would be useful.

81. This proposition can itself be regarded not simply as a scientific proposition, but also an effective ideological argument for why Keynesian economists should hold a privileged place in the state power structure.

In more detail, the argument runs:

(1) The capitalist economy, left to itself, is basically unstable.

(2) Wise men, with appropriate technical knowledge, can correct this instability.

The much noted "crisis in Keynesian economics" (e.g. Skidelsky 1977) basically results from proposition (2) breaking down, not from any breakdown of proposition (1).

82. Some caution is required here. Keynes clearly regarded the level of effective demand as an equilibrium level of demand rather than the level of demand existing at a particular moment in time, and was thus arguing not so much that unemployment exists because the current level of demand is too low to maintain full employment (which would certainly be tautologous, although tautologies can be useful in developing an argument) but rather that there is a persistent *tendency*, which is not automatically corrected, for the

level of demand to be depressed below the level at which full employment is maintained.

83. See especially Keynes (1936 pp.27-32). It is intended to conduct a detailed examination of the structure of Keynes's *General Theory*, centred on precisely this point, as a follow-up to the current thesis. An important contrast between the present work, which concentrates on the *origins* of mass unemployment, with the *General Theory*, which concentrates on the *persistence* of mass unemployment, is that the present work adopts a historical approach, attempting to identify the causal links leading to a particular situation, while Keynes adopted an "economic" approach, attempting to isolate sets of forces, and schedules of choices, operating at a particular time, taking background conditions as given. It is open to debate which is the more truly "general" approach.

84. The basic Marxist answer to the problems of the modern capitalist economy is, ultimately, that they cannot be solved without the overthrow of capitalism itself; steering problems cannot in the long run be solved, and will become more intense, while reformist solutions, such as Keynesian demand management, will be unable to halt the crisis of capitalism, and if anything will tend to make it more intense. Capitalism exists, in the material world, yet logically the system cannot maintain itself in the long run; this set of contradictions dialectically resolves itself, through class struggle, into a series of revolutionary confrontations and, at some future date, the complete transition from capitalism to socialism.

Perspectives such as this, which have been considerably elaborated in the context of the 1970s and 1980s by Mandel (1975, 1978, 1981), may be regarded (in the context of note 64 above, and non-pejoratively) as mythological theories. Undoubtedly they illuminate much of what has been happening, but leave a lot of questions unanswered, precisely because of the way the myth is structured. In particular, the pure Marxist vision allows very little scope for framing practical radical policies for dealing with a particular situation. If the state is seen as *merely* a tool of the capitalists, irrespective of any democratic processes, then the question of policy is irrelevant. If reforms, despite everything, get carried through the capitalist state, then these reforms themselves become meaningless. If one has socialism (vaguely defined) then all the problems will go away.

The radical democratic vision, which can take either liberal or socialist forms, is somewhat different. Social injustice is seen as present but avoidable, though it might take radical changes in social organisation to remove injustice. A framework of demands is set up for action to be taken to remove specific injustices, with the attempt being made to carry this through the political system. Demands are set up, not in the spirit of Trotskyist impossiblism (making impossible demands to foment revolution), but rather so that they can be implemented, *but only with difficulty and after struggle* (there is no point in contenting oneself with soft demands). The intention is not to break the system, but to push it to its limit, and in particular to increase democratic accountability across a wide range of spheres. If the system cannot accommodate demands for reasonable reform, then there is no reason to be too upset if the system as a whole is overthrown. The time is ripe for revolution though only when all reasonable channels for reform have been exhausted.

Full employment, or at the very least a substantial approach to full employment, is a reasonable demand. If income levels were

high enough in the 1950s and 1960s to maintain full employment, and to prevent the persistence of primary poverty resulting from lack of employment, then surely in current conditions with much higher income levels it is possible to prevent poverty resulting from unemployment. The argument that this is impossible because of the objective constraints of the current structure of society is, except to those who hold the status quo as sacrosanct, not a final answer but a question; how does one break through the constrictive structures of society so as to generate the maximum amount of human freedom, for the particular level of productive ability the society has reached? On the question of eliminating the poverty which results from lack of employment, the ideal solution would be to bring about full employment as this broadens the productive base of society to the greatest extent and allows all members of society both to help create, and to share the fruits of, social and economic progress. Failing that, however, and if it proves economically impossible to expand the productive base to create full employment, it is highly desirable to improve redistributive mechanisms in such a way that lack of employment does not mean poverty. It is better to use part of the mass of surplus value generated by those in employment to end poverty amongst those who have been squeezed out of the labour force, than to raise still further the level of profits.

If in many respects the above reads more like the arguments for the welfare state of the 1940s than "radical Marxism", then so be it. The quest for genuine and far-reaching reform is more radical, it is suggested, than any rhetoric suggesting that no reform is possible unless the complete structure of capitalism is demolished. A stronger influence on the above argument, perhaps, has been Harvey's essay on revolutionary and counter-revolutionary (Harvey 1973 pp.120-152) with attention directed to the question of mass unemployment rather than, as in Harvey's case, the question of ghetto formation. Harvey (1973 pp.150-151) notes that "a revolutionary theory offers real choice for future moments in the social process by identifying immanent choices *in an existing situation*" and that there is a danger of peverting revolutionary theory into counter-revolutionary theory "which automatically frustrates either the creation or implementation of viable *policies*" (emphases added). The form of dogmatic Marxism which states that no real reform is possible in a capitalist society is thoroughly counter-revolutionary.

85. In political terms, the evident lack of any coherent, and agreed, "left view" on economic issues has undoubtedly been a considerable electoral handicap to the Labour Party, which has given the impression of seeking electoral vitory by waiting for Thatcherism to collapse under the weight of its own contradictions (as if a re-run of 1980-81 were in any sense likely!), without seeking to project any clear and positive alternative.

Perhaps the most interesting recent discussion of the question of building a democratic socialist economy is Hodgson (1984), which goes well beyond the usual questions of what degree of reflation is technically feasible in a given situation. Hodgson concentrates mainly on the question of restructuring the relationship of production, rather than on immediate questions of economic management, but in many respects it is the battle on underlying issues, rather than on immediate questions, that needs to be won if any coherent alternative to Thatcherism is to come into being. Tomlinson (1986) produces a useful discussion on more detailed questions such as policy options.

86. To argue that a statement is mythological is not by itself sufficient to discredit that statement (see note 64 above). The

question at stake is more of whether such a myth statement is valid, producing scope for detailed analysis and political action, or whether it is invalid, perhaps through becoming outmoded in the passage of time. There seems to be very little sign of either of the two 20th century slumps having hastened the overthrow of capitalism, and its replacement by a socialist system, in any sense whatsoever. During its periods of economic crisis capitalism does not destroy itself but instead clears the way for a new, more vigorous strain of capitalism. This might not have been so clear in the 19th century, but needs to be recognised in the 20th century.

87. A view was gaining currency in right wing circles in the 1970s that capitalism was being threatened by an excess of democracy with the state paying too much attention to the demands of the working class. Brittan (1976, 1977), in a relatively mild exposition of the theme, still claimed that liberal democracy had only a short time to live. Right-wing conventional wisdom asserted that Britain was becoming ungovernable; this is not simply the present author's interpretation, since the Conservative Party Manifesto (1987) makes precisely this point when discussing the 1970s. Furthermore, action as well as words was involved; in 1974, at a time of economic crisis, and following the election of a Labour Government to replace a Conservative Government in the aftermath of a coal strike, there were various attempts made within the security services to topple the Labour Government. It seems that there was active support for these operations from senior members of the Conservative Party, including at least one who was closely involved with Mrs. Thatcher's campaign for the leadership of the Party, and also from powerful figures outside. Detailed discussion of this key hidden point in 1970s political history is as yet difficult because of the far-reaching legal attempts by the Conservative Government to censor discussion on this highly embarrassing episode. At the time of writing (August 1987), the book giving the inside story of this affair (Wright 1987) has been banned from publication in the UK, and it is even illegal for UK newspapers to discuss the detailed allegations contained.

This is "ungovernability" when a Labour Government has been in power (see also Offe 1984 for more general discussions of ungovernability at a time of crisis in the welfare state). With a Conservative Government in power, the strategy has been deliberately to reduce democracy to a skeletal framework for re-electing, at well-timed general elections, a Conservative Government. Governability has been increased simply by taking away political power from dissenting fractions of the British people. Where social pressures are greatest, and opposition to the Government strongest, in the larger cities, elected local authorities have been broken up. Where the power of the trade unions is seen as a threat, the more "dangerous" unions have been manoeuvred by the Government into strike action at a time chosen to suit the Government. And, most damaging of all, perhaps, has been the determination of the Government to ensure that there is no effective mechanism for unemployed people to channel political demands upon the state. In some circles this might well be seen as the beneficial removal of excess democracy. Others, including the present author, see this sort of process as a threat to democracy, and a deliberate attempt to replace a mature democracy with an elected dictatorship. A generation ago, that most perceptive of Labour politicians, Aneurin Bevan, with a glance back to the 1930s noted that "The issue therefore in a capitalist democracy resolves itself into this: either poverty will use democracy to win the struggle against property, or property, in fear of poverty will destroy democracy." (Bevan, 1953 p.3). In times of full employment it may well be true, as Bevan suggests,

that "the problem of how to prevent these three forces from coming into head-on collision is the principal study of the more politically conscious Conservative leaders." In the climate of the 1970s and 1980s, though, the more politically conscious Conservative leaders see the winning of the head-on collision, capitalist property against the unpropertied classes and against democracy, as the central task.

88. The counter-posing of themes from Durkheim (1893/1984) and Marx is meant to imply something other than acceptance of Durkheim's case that social solidarity is normal in *society as a whole* with various degrees of over-specialisation and crisis creating an abnormal lack of integration (anomie) in society as a whole. Instead, the basic model is one of a class-structured society, with between-class relations being characterised by detrees of antagonism yet also mutual interdependence, and with within-class relations being characterised in normal circumstances by class solidarity. The question at stake is whether economic crisis generates not increased class consciousness, leading either to revolutionary consciousness (as in the basic Marxist model) or at the very least to a substantial increase of democratic pressure, but rather whether the crisis generates *decreased* working class solidarity, making a policy of divide and rule easier. These tensions have been quite deliberately exploited by the Thatcher Government in its attempt to seduce the more prosperous parts of the working class into support for a "popular capitalism" (through, for example, council house sales, income tax cuts and privatisation of state-owned industry), while marginalising the less affluent "lower working class" who remain prone to substantial spells of unemployment and low pay when in employment. It has been fashionable amongst political commentators to suggest that Labour's electoral misfortunes exist because of the shrinkage of the industrial working class, but this shrinkage is due not to some general process of embourgeoisification, but rather to the loss of 5,000,000 industrial jobs since 1966. The leakage of support from Labour within the remaining part of the industrial working class, particularly in the Midlands and Southern England, prevents Labour acting as an effective voice for those displaced downwards in the class structure, and more insidiously ensures that the electoral calculations of the Labour Party are dominated by the need to tailor policies to attract the already affluent, further marginalising the non-affluent.

89. Trades unions exist basically to protect the work-place interests of their members, and not to advance the economic interests of non-members who are out of work. Obviously it would be in the financial interests of the unions if the general level of employment were to be increased by, say, 10%, but this general question does not impinge on the day to day running of union affairs. Similarly, broad class sympathy does not alter the point that the direct economic interests of those in work and those out of work do not necessarily coincide.

In theory, perhaps, the Labour Party ought to be able to adopt a more wide-ranging stance. In practice the results have been disappointing, with neither electoral success nor radical policies on offer. This however is not the place to engage in detailed polemic on the shortcomings of the Labour Party circa 1987, tempting though this would be.

90. The ideal situation would be to have a set of integrated studies capable of covering, at a sophisticated level, both economic change at a particular conjuncture, and the impact of economic change on the detailed fabric of society. The main obstacle to conducting such research is that different research skills are required to

illuminate each aspect of the problem. The problem is not simply one of arbitrary demarcation of academic disciplines in that the different approaches of economic geography and social geography (both parts of "human geography") replicate the differences of approach between academic economics and academic sociology. It is perhaps because of the intrinsic difficulty of colonising the overlap zone between economically oriented approaches and sociologically oriented approaches that while it is quite normal in sociological discussions to locate the central determinants of certain key patterns of social change in the sphere of economic change, it is disappointingly rare for sociologists (or sociologically inclined social scientists) to get to grip with basic questions of economic theory, and of explaining economic change. The suggestion is emphatically *not* that sociological talent should be directed towards developing neo-classical labour market models, but rather that detailed social research is part of the strategy for demolishing neo-classical models (see also Craig et al. 1985).

Amongst sociologically oriented works on the slump, Friend and Metcalf (1982) represents a brave attempt to picture both the social and economic contexts of slump. As the introduction to the book makes clear, the research involved started off in the mid-1970s examining the various implications of rapidly rising unemployment, poverty and increasing use of police power in what might be called, in convenient shorthand, the "inner city". The book in final form attempted to get to grips with the intensification of these problems in 1980 and 1981. Though in a sense not a specialist work, Friend and Metcalf (1982) produces a very clear picture of the early 1980s.

The collected papers in Roberts et al. (1985) and Lee (1987) provide a wide range of interpretations of what might be called the economic sociology of slump (including part of the early post-slump period). In line with the comments noted above, these papers tend to concentrate on the effects of slump, rather than the causes, with the closest approach to the question of macro-economic determinants lying in the conceptualisation of particular decisions to reduce industrial employment as part of a more generalised phenomenon of "deindustrialisation."

91. Even here the use of the term "crisis" is often contradictory. For example, van Duijn (1983 p.5) refers to the crisis as simply the upper turning point of the business cycle, irrespective of the strength of the downturn, while Flamant and Singer-Kérel (1970 pp.8-10) use the term to signify a violent and possible prolonged contraction of economic activity. The latter usage of the term is more in accordance with the notion of crisis used here, with the implication of a recession going out of control, rather than a controlled recession.

92. Harrod (1939, 1973 especially pp.100-121). Harrod's *Essay in Dynamic Theory*, an attempt to set Keynes's recently published *General Theory* into a dynamic rather than a static context, must be regarded as one of the most significant advances in 20th century macro-economic theory, although like most important such advances it can be regarded to some extent as an independent rediscovery of Marx's analysis, restated in more flexible form (see especially Kuehne 1978 vol. 2, pp.122-151). Essentially Harrod proposes two types of equilibrium growth rate in the economy, the natural growth rate as discussed in the main text and a warranted growth rate set by the ratio of savings to income and the capital-output ratio. Harrod notes that there is no reason why these two should be equal, nor why the actual growth rate should equal either, and suggests that this holds the key to the question of macro-economic instability.

In a sense, the whole of the economic theory generated in this thesis rests on the development of a gutted version of Harrod's theory, with the central question being that of under what circumstances the actual growth rate exceeds the natural rate, under what circumstances they are equal, and under what circumstances the actual growth rate falls behind the natural rate. It is suggested that once fluctuations within a single business cycle have been averaged out there is a definite succession of historical phases, of upswing ($G>G_N$), full capacity working of the economy ($G=G_N$) and downswing ($G<G_N$). It is a fairly simple arithmetical result to show that the unemployment rate varies according to the relationship between G and G_N.

93. Keynes (1936 pp.324-326) discusses this question himself, stating that in basics he agreed with the under-consumptionist school (of, for example, Hobson 1922), except in the extent that they neglect the point that the demand for investment is an important component of total demand, and that a stimulation of investment can itself be an important way of stimulating both demand and output. The stimulation of consumption is not the only possible course of action.

94. See for example Mandel (1978 pp.9-46) for a view of the economic crisis in the 1970s in over-production terms, a theme followed up by Glyn and Harrison (1980).

95. Domar (1957 pp.70-128). Domar's book is a collection of his papers which had previously been published in the late 1940s and early 1950s. In many respects Domar's growth theories paralleled those of Harrod, so that it has become a commonplace to talk of a Harrod-Domar model of smooth economic growth. Yet textual examination shows that neither Harrod nor Domar were suggesting that smooth economic growth was the norm, but rather trying to sort out the theoretical conditions under which smooth growth could take place in order to understand systematic lapses from smooth growth.

96. The "core" is taken here as meaning the industrialised parts of Europe. The view from the tropics would be rather different. Lewis (1978b p.5) in arguing against the case stated by "many writers" that the industrial revolution depended on the raw materials of the Third World, noted that "the leading industrial countries - Britain, the United States, France and Germany - were, taken together virtually self-sufficient. The raw materials of the industrial revolution were coal, iron ore, cotton, and wool, and the foodstuff was wheat. Between them, these core countries had all they needed except for wool." Yet the geographical sub-division of these territories shows a strong flow of raw materials, especially in cotton, from periphery (USA) to core (Europe). Later, other countries of the "white periphery" (Australia, Argentina etc.) were to become major suppliers of raw material to the core. The rapidly expansionary economic climate of the white periphery itself set the climate for substantial urbanisation and industrial expansion. This happened much earlier in the USA than in, for example, Australia, so that the USA was soon to become a fully industrialised country, while Australia maintained a substantial dependence on agriculture and mineral production.

This is one aspect of core-periphery trade, where there is trade between the industrial countries exporting manufactures and *high income* peripheral countries exporting agricultural products and raw materials. Lewis (1978b p.6) emphasises that it was only towards the end of the 19th century that the "colonial" pattern of trade, with industrial nations selling manufactures to underdeveloped economies, and the underdeveloped economies of the tropics selling

food and raw materials to the core economies, became particularly significant (see Lewis 1970, 1978a, for a more detailed discussion). The expansion of the tropical economies attracted waves of migration from India and China which paralleled in magnitude the waves of migration from Europe to the white periphery (Lewis 1978b p.14). The tropical economies did not become high wage economies, however, since while prices in temperate commodities were set by market prices, prices in tropical commodities were set by the level of wages that would sustain indentured Indians (Lewis 1978b, pp.14-20).

Up to 1913, both the temperate peripheral and tropical peripheral economies expanded substantially, and *developed*, as a result of the international division of trade between manufactures from the core, and agricultural produce and raw materials from the periphery.

97. This point is emphasised by Lewis (1949 pp.138-198, especially p.155). At the centre of the inter-war depression at the world scale was the reduced rate of growth of demand for primary products by manufacturing countries, which forced the price of primary products down, and then, *secondarily*, reduced the rate of growth of demand for industries. The terms of trade of the UK, (export prices divided by import prices), a manufacturing country, rose from an index figure of 100 in 1913 to about 140 in the 1930s (Lewis 1949 pp. 195, 202). The long depression in the tropical primary producing countries severely retarded, and indeed set in reverse, the economic development of these countries (Lewis 1970 p.33).

98. For the UK, see chapter 4 below. It needs to be strongly emphasised that the inter-war recession in *manufacturing* in the UK was relatively slight, except where unusual conditions intervened (violent disruptions in the immediate post-war pattern of demand, loss of international competitiveness in the cotton industry etc.) and that the bulk of the effect of recession was concentrated in coal mining. Agriculture was relatively undepressed in the UK, since the UK, being a net importer of food, could support its agricultural sector with internal demand.

For discussions of the severe impact of recession amongst the major agricultural exporters of the semi-periphery, see the general economic histories by Chandler (1970) and Potter (1985) for the USA, Schedvin (1970) for Australia, and Safarian (1970) for Canada. The general picture appears to have been of rapid agricultural expansion and the development of new lands up to the First World War, a boom in agricultural prices during the war and the immediate post-war period, stimulating great agricultural activity, then a sharp drop in prices as "normal conditions" returned, without there being any corresponding fall in agricultural activity, and then an extremely painful process of readjustment from 1929 onwards.

99. See, for example, Sandberg (1974 pp.175-206) and Pigou (1947 pp.95-106). Two of the main features which particularly affected the Lancashire cotton industry at this time were increasing competition in world markets from Japan and, perhaps even more importantly, the growth of the Indian cotton industry, which removed Lancashire's dominance in Indian markets.

100. This aspect is emphasised in Cairncross and McRae (1975). It needs to be emphasised most strongly that the commodity price increases represented not the *start* of economic crisis, but the undesired outcome of attempts to resolve a previous phase of crisis.

101. Griffith-Jones and Harvey (1985) provides the most detailed recent discussion of the tangled net of events concerning world inflation, changing terms of trade within that world inflation, the

transmission of inflation between developed and developing countries, and the recessionary effect this uncertainty has had, particularly since 1979. Griffith-Jones (1985 p.28) presents an extremely important graph, showing the terms of trade of non-oil commodities against manufactures between 1950 and 1982, and also commodity prices in the same period. The general picture from 1950 to the late 1960s was one of stable commodity prices, and gradually rising prices in manufactures, leading to a gradual shift in the terms of trade in the favour of manufacturing nations. Commodity prices rose sharply from 1971, as did the price of manufactures. Commodity prices (again, excluding oil) have, over the course of the long cycle downswing as a whole, risen as fast as the price of manufactures, *but with far greater cyclical fluctuations*. During cyclical upswings, which have been characterised by concerted reflationary policies in the developed countries (and especially in the early 1970s), demand expanded rapidly for primary commodities, while supply remained sticky because of the difficulties of expanding production. During cyclical downswings, however, as in 1974-76, the pressure of demand for primary commodities fell sharply, causing a fall in commodity prices, and an adverse shift in the terms of trade. One of the main economic problems faced by the developing countries in the 1980s, according to Griffith-Jones and Harvey (1985 p.312), is that many governments when faced by the post-1979 recession, anticipated that a future cyclical recovery would push the terms of trade strongly in favour of the primary commodities, allowing for a rapid recovery in developing countries. A slump is twice as long as a normal recession however (chapter 2 below) and the rapid recovery in the industrialised countries failed to materialise, removing the economic foundations of the expansionary policies of the developing countries.

A special issue of the journal *World Development* (Maizels 1987) provides the most recent assessment of the commodity price question. Avramovic (1987 p. 645) notes that commodity prices fell by about 40% during the 1980-82 recession, with about one-third of this fall being recouped as economic recovery, particularly in the USA, started in 1983. Since then, however, the trend in commodity prices has been very firmly downwards. For such reasons, post-slump recoveries tend to be generally much slower in underdeveloped countries than in developed countries.

102. The price index of crude petroleum increased from 100 in 1970 to 208 in 1973, to 2506 in 1981, a factor of great benefit to some developing countries, particularly in the Middle East, but a disaster to other developing countries which needed to import oil. By comparison, the price index for primary commodities other than oil had risen from 100 in 1970 to 212 in 1974, but then only to 247 by 1981, while the price index of manufactures from the developed market-economies stood at 100 in 1970, 165 in 1974 and 273 in 1981 (figures from Griffith-Jones and Harvey 1985 p.27). The severe squeeze in the non-oil developing countries can be dated from about 1973-74, with it becoming increasingly difficult to purchase imported oil and manufactures.

103. In August 1982, the Bank of Mexico "sent shivers of looming default throughout the international financial community by withdrawing from the foreign exchange market and freezing all dollar accounts within the country" (Ames 1984 p.1). In the years since then the indebtedness of Third World countries, and the difficulties that such countries, often with a badly deteriorated economic base, have had in meeting these debts, has been a persistent problem faced by western banks. Yet the "debt crisis" clearly has its roots in earlier events; Frank (1981 pp.132-156) surveys the situation in the late 1970s, and notes that even as early as 1977 various

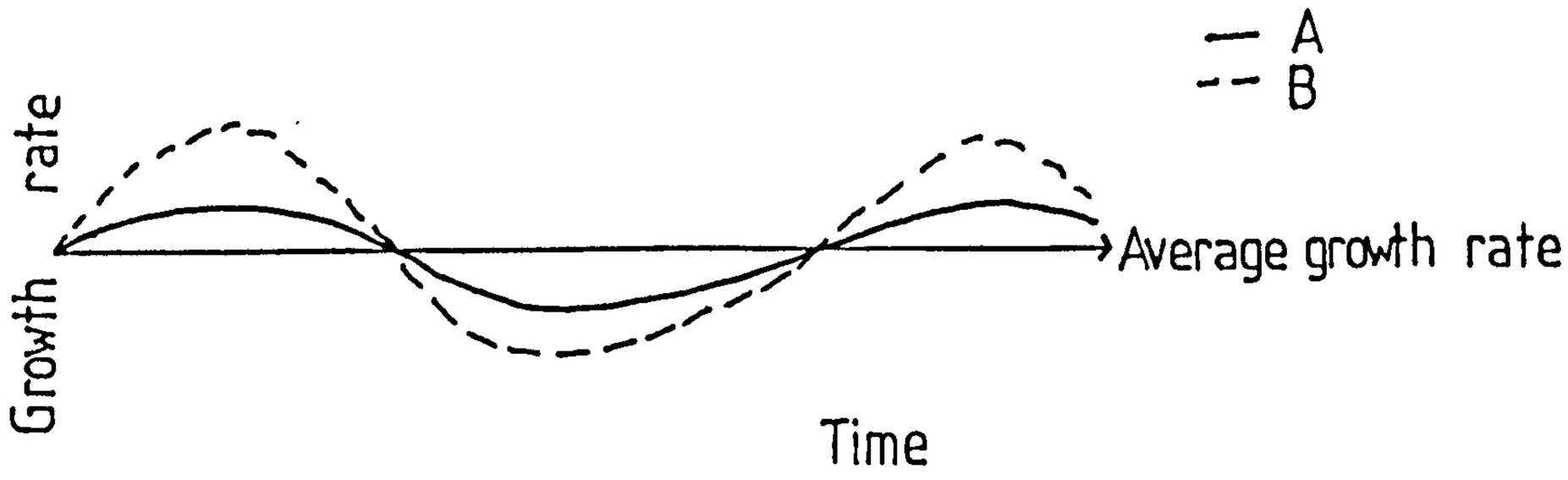
financial commentators were worried that defaults from loans to the Third World could lead to chain reactions in the western financial system. Quite probably one can find the roots of the problem in the early 1970s reflation of the western economies. In that the productive cycle was on a long-term downswing, reflation led not so much to an increase in industrial production, but rather to the creation of idle money searching for investment opportunities. This, in conjunction with the related upturn in the developing countries resulting from the shift in the terms of trade towards commodities, created a set of conditions highly favourable for lending to the Third World; idle money needed to be invested, while the improved terms of trade in the Third World made such countries more creditworthy, giving them greater opportunities to finance development schemes, or, alternatively, to finance current expenditure, and hope that continued economic growth would enable Third World governments to repay debts (see Wolf 1985 p.10-11).

It is not so much the actual magnitude of the debts that is the problem, but the strain on the economy involved in paying them and the social tensions thereby created. If for example borrowed money has been invested productively and generates a high rate of return debt repayment is unproblematic. The balance of the equation has been sharply tipped against the debtor countries since the early 1970s, firstly by the low level of demand in international markets, affecting adversely the terms of trade and reducing the rate of return on past investment, and secondly by the prevailing high interest rates, making it more expensive to service each unit of debt. It should be emphasised that the crisis of Third World indebtedness is but one aspect of the general economic crisis in the Third World, though one which receives much attention in the West because Western financial institutions themselves face problems. Ironically, the first country in which the debt crisis impinged itself on foreign financial institutions was Mexico, an oil-producing country. The account by Ames (1984) shows that on the basis of high oil prices Mexico was able to borrow heavily to finance development plans until a comparatively late stage; the fall in the price of oil in 1982 removed a basic prop of the economy.

104. For various other recent perspectives see for example Brandt (1980), and the critique of this report by Hayter (1981), Amin et al. (1982), Harris (1983), Edwards (1985), Corbridge (1986), Godfrey (1986). This is necessarily only an extremely brief, indeed almost casual, sample of what is becoming a very wide literature. In addition to publications by various international official organisations (for example the World Bank, and the United Nations Conference on Trade and Development) there are numerous academic journals devoted to development issues.

105. See for example Kirby (1981). Allusions to the 1870s frequently cropped up in the late 1970s debate on deindustrialisation, for example Singh (1977), Cairncross (1979b), but more in the sense of noting parallels between sets of problems a century apart, than in the sense of asserting a continuous process of relative decline lasting for a century.

Care must be taken, however, not to jump to the conclusion that relative decline was *inevitable* at a particular stage, and an important statistical problem also needs to be noted. The diagram below shows hypothetical growth paths for two economies, A and B.



Economy B has deeper recessions, but also more pronounced upswings, than economy A. If the time series is looked at from the perspective of economy A, the whole period could, unjustly, be seen as one of continuous decline in which the periods of upswing are periods of relative decline because the rival economy B did better than economy A, while the remaining periods are periods of decline because they are recessions, even though the recessions are less intense than in economy B. It is suggested that the common interpretation of the British economy being in relative decline between 1870 and 1939 depends to a large extent on this type of illusion. This is not to suggest that there were no structural distortions in the British economy; on the contrary, the limited development of new industries between the 1880s and the First World War can be held to be a considerable problem (chapter 2 below). Considerable caution is needed, though, in interpreting the long-term implications of this.

106. One can suggest three stages in the problem-shift; from slow growth in comparison with other countries but full employment (NEDO 1963a,b, etc.) to slower growth with rising unemployment (Beckerman 1979, etc.) to a more specific concern with deindustrialisation (Blackaby 1979, etc.). Currently the most important questions concern the nature of the slump and post-slump economy.

107. Britain having accumulated a very large empire up to 1914, the possible role of the Empire in helping resolve Britain's inter-war problems was a prominent feature of discussion between the wars (Drummond 1972, 1974, also Tomlinson 1981 pp.106-119). Tomlinson (1981 p.114) notes that when Empire economic policy was discussed "the 'Empire' under discussion was overwhelmingly the White Dominions. A few loans might be made for the development of the Colonies on the grounds of Imperial self-sufficiency and/or its effects on employment, but the sums involved were usually trivial." The Imperial conception was of a greater British economy spreading from Canada to the U.K. to New Zealand, with a high degree of self-sufficiency in trade, with manufactures being produced in the core country and agriculture, on a vast scale, taking place in the Empire. During the 1920s it was expected that the pre-1914 pattern where surplus labour in the British Isles was drained off to the white periphery would continue, as the economic development of the white periphery proceeded. The exceptionally rapid pace of expansion in the white periphery before 1914 had been based on rising commodity prices, and could not be sustained when commodity prices started to fall. During the 1920s there was still considerable net emigration from the UK to the white periphery, although on a rather smaller scale than before 1914, but during and after the slump the white periphery was economically severely depressed and unable to absorb immigration; after 1930, the direction of net movement was actually from the white periphery into the UK (figures given in Mitchell and Deane 1962 p.51).

During the 1930s the sting of slump led to a policy not so much of Imperial expansion, but more of Imperial retrenchment, with the attempt being made to create what was effectively an Empire trading block, protected by tariffs from foreign competition.

108. See Chalmers (1985 pp.112-133) for a clear account of the basic problem. For various historical-political reasons, the USA and the UK have had a much higher level of military expenditure, as a percentage of national income, than other advanced capitalist economies. In the USA this is the result of the demands of superpower status; in post-imperial Britain it can be attributed more to political and institutional inertia. The *economic* problem of maintaining a high level of military expenditure is not simply that it unproductively swallows say 5% of national income, compared with about 3% in other Western European countries and 1% in Japan; such costs can be absorbed readily enough. The problem is rather that high levels of military expenditure divert expensive and scarce resources, notably highly trained scientific manpower, into activities which are ultimately economically unproductive. This has diverted resources away from the civilian, productive, sector, and acted as a considerable brake on civilian research and development, a point noted in various ways by Kaldor (1980) and Schott (1981 pp.55-62). The end result is that rates of productivity growth in the productive civilian sector (producing goods which circulate through the economy) are artificially retarded, even though military and semi-military production is technically highly advanced. As Chalmers (1985 p.120) notes, any "spin-off" benefits accrued through military R & D providing new technology which can be used in the civilian sector are likely to be considerably smaller than the benefits which would have accrued from the more direct process of concentrating research in civilian production.

The type of relationships noted above possibly help explain the much-noted paradox that the countries which lost the war (Germany, Japan) won the post-war economic race; these countries, with their military establishment destroyed, could concentrate all their scarce resources into building up their economic base.

109. This famous and apposite quotation derives from a lecture given in 1962 by Dean Acheson, American Democrat and one of the instigators of the post-war Marshall Plan of American aid to Western Europe. It is suggested that at the broad scale Britain's relative economic and political decline derives from this failure to adjust to a post-imperialist situation, and not from some mysterious British disease (the death of the Victorian entrepreneur, and all that) starting in the 1870s. It is of course easier to pin blame on remote ancestors than to question what has been happening in a relatively recent past, and this is perhaps why the "1870s thesis" seems so attractive; one does not have to implicate colleagues and immediate predecessors.

The polemic by Pollard (1982) is worth reading in this respect, with the picture being presented of economic policy since the war being dominated by an unbroken elite, sophisticated in terms of economic theory yet basically unable to move beyond the belief that if care is taken to set macroeconomic aggregates at theoretically optimal levels production would look after itself. This is combined with a specific critique of the use of the stop-go cycle as a tool of economic management.

The charge is, perhaps, that for too long the British economy was allowed to drift on a rising wave of world prosperity, and when the waters became rougher, the British economy went too far out of control.

110. As always, a delicate balance is required; too little adherence to theory leads to empirical work being done in a vacuum, while over-adherence to a particular theory reduces the chances of making theoretical advances (as such advances come best from a creative collision of transmissions) and limits the scope of admissable empirical investigation.

111. Myrdal's *Monetary Equilibrium*, published in Swedish in 1932 and in English in 1939 is the key work in this respect, and one which Shackle (1967) treats as a separate but parallel development of Keynes's *General Theory*. Simplifying greatly, and perhaps almost to the point of distortion, Myrdal is suggesting firstly that monetary equilibrium occurs when the desired and anticipated ("ex ante") sum of economic activity in a particular period equals the actually occurring ("ex post") sum of economic activity, leading to a lack of incentive either to accelerate or decelerate economic activity, and secondly that this equilbrium level of activity might not necessarily be sufficient to maintain full capacity working in the economy. This can quite properly be regarded as a statement of the theory of effective demand. Much later, Myrdal (1974 p.4) recalls "how once in the late Twenties I spent hours trying unsuccessfully to demonstrate to an older American friend and colleague of mine, who was a very prominent member of the established school of economists, how it was possible for (aggregate supply and aggregate demand) to show a difference." What could at this stage readily be grasped by Swedish economists, developing the ideas of Wicksell (1898/1936), was not to be appreciated for another decade in the English-speaking world; see Myrdal (1974 p.5). It perhaps deserves emphasis that the notion of "cumulative causation", a central theme in Myrdal's later work (Myrdal, 1944, 1957) was developed earlier by Wicksell, who noted the possibilities of cumulative movements away from monetary equilbrium towards inflation or deflation.

There seems to be little doubt that Myrdal, along with other Swedish economists, had been working on lines parallel to the lines of thought which led to Keynes's *General Theory*, with some of the key ideas emerging earlier in Stockholm than in Cambridge. Whether this means that "the Stockholm school" anticipated Keynes is another question. Patinkin (1982) suggests not, noting especially that the discussion of the theory of unemployment was rather hazy, but acknowledges (Patinkin 1982, p.57) the importance of the ex ante - ex post conceptualisation in providing tools for analysing short-run dynamics sharper than anything Keynes himself produced. In many respects the Wicksell-Myrdal type of analysis resembles not so much Keynes's *General Theory*, but rather Harrod's *Essay in Dynamic Theory*. Harrod notes the importance of the ex post - ex ante distinction, and notes that a difference between ex ante quantities and ex post quantities for a particular period will have its effect on decisions taken in a subsequent period. He notes, furthermore that "a departure from equilibrium instead of being self-righting will be self-aggravating" (Harrod 1939 p.22), a statement of the principle of cumulative causation. The "Harrod knife-edge", the idea that any departure from the straight and narrow equilibrium path will be centrifugal rather than self-correcting, was, in the global sense, not wholly novel, but the introduction of the concepts of the natural growth rate and the warranted growth rate was undoubtedly an important advance (see note 92 above).

112. The emphasis on "uniqueness" in geographical thought at earlier stages in the development of the discipline may perhaps be seen in terms of the question of Empire. During the late 19th century, European expansion brought with it the need to study new territories in detail, and the need for explorers' surveys to be presented and interpreted in a more systematic manner. The 1880s

thus saw the increased professionalisation of the discipline, and the creation of university chairs in geography (see the detailed account in Freeman 1980). The characteristic geographical survey of the late 19th and early 20th century, as reported in various Royal Geographical Society publications (*Geographical Journal*, etc.),was in the form of an expedition to a particular area, with accounts being made of the area's physical geography, its people and commerce, and its potential political and military significance.

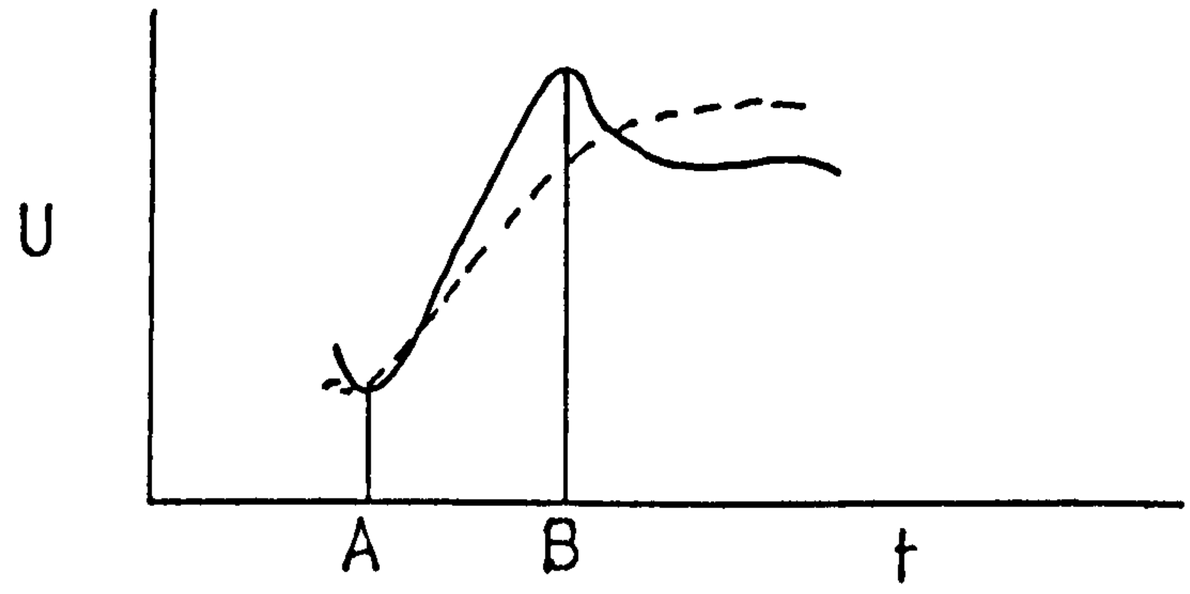
This was the situation in British geography during the great 19th century territorial expansion of the capitalist world-system; a dominant trend was the exploration of areas outside, or on the fringes of, the world-system by metropolitan geographers. By the mid-20th century, however, there were few "unique" places outside the capitalist world-system for geographers to explore, and studies of places which might earlier have been seen as unique would now tend to examine more closely the relationship between these areas and other parts of the world-system. Closer attention also came to be given to the spatial structure of the metropolitan economies themselves. The overall tendency was for the discipline to become concerned less with surveys of unique places (expeditions abroad, local studies at hime), and more with questions of spatial structuration. The locational analysts of the 1960s (and especially Bunge 1962) may perhaps be accused of treating this theme too much in the abstract, with over-emphasis on the search for general spatial laws. The economist Myrdal (1957) showed clearly, however, that examination of spatial structuration could proceed in close connection with studies of economic and social aspects of human society. More recent approaches to human geography have tended to acknowledge this point, even if the acknowledgment is only implicit, through the structure of particular research projects, rather than explicit.

113. See for example Bunge (1962), Haggett (1965), Abler, Adams and Gould (1972), Haggett, Cliff and Frey (1977) and, for an attempt to bring together the new directions of geographical research with discussions in the philosophy of science, Harvey (1969). In discussing the "quantitative revolution" in geography, the central issue is not that of quantification as such, but rather that of what form of explanation is used.

Simplifying, one can suggest that there are two basic types of explanatory model in the social sciences, the historical and the curve-fitting. The present author is an advocate of the historical method in which the central question is to find explanations of particular events, or clusters of events, with considerable importance being attached to uncovering an ordered sequence of events leading to a particular situation. Current economic theory, and the bulk of the work undertaken during the quantitative revolution in geography, uses the second method, looking at a pattern, whether it be a time series or a pattern on a map, and trying to derive a hypothesis under which a particular hypothetical relationship is tested statistically to see whether the result produced gives a good fit with the time series or the map. The curve-fitting approach is, it is suggested, weak on explanation because of the difficulties of overcoming the problem that correlation, or a clear pattern, does not imply causation. The attempt may be made to provide ever more sophisticated refinements of the method of inferential statistics, but ultimately, to prove causation, it is necessary to examine events or sequences of events in detail. If a strong pattern is found, then the pattern needs to be explained; it is not enough to rely on the pattern to do the explaining.

A brief illustration of the method of the two types of

approach should help explain why the historical approach is preferred. Suppose there was a time series of unemployment of this form:



The curve-fitting approach would attempt to find some curve, preferably one which could be related to other variables, to fit the curve, and would hold that once produced this curve has reliably explained unemployment. This proposition would be denied under the historical method of explanation, which would place emphasis on the kinks at A and B, kinks which a curve-fitting method would attempt to smooth out, and then would concentrate attention on trying to establish concrete reasons for the increase in unemployment and the rate of increase in unemployment, between A and B. To say that a curve of the type given by the dotted lines is a good fit for the real life curve does not help this type of explanation at all; it does not eplain any *event*.

As far as human geography is concerned, the quantitative revolution of the 1960s undoubtedly brought fresh and important insights into the discipline, but the imperative now would appear to be to reconstruct human geography as part of a historical social science, uncovering the forces in operation in a given situation, and seeing how these forces work themselves out through time and across space.

114. Curry (1964, 1967).

115. Central place theory, in its modern form, derives from Christaller (1933/1966) and Loesch (1943/1954). Later developments include Berry (1967) and Beavon (1977); see also Haggett, Cliff and Frey (1977 pp.139-190). The range of settlement sizes within a given region is seen in terms of the development of a *hierarchy* of service centres (and centres of production of various consumer goods industries) to serve a market area as efficiently as possible. Thus, isolated farmsteads will have no services, small villages might have a shop or two to serve the surrounding area, while small towns will have a much wider range of services, including various specialised services, to cover a wider market area.

Central place theory presents essentially a neo-classical equilibrium model of settlement patterns, and as such does not convincingly bring in questions of industrial change and economic change. The central place hierarchy is a hierarchy of a basically rural area, with the dominant economic activities being agriculture, services and *local* industries. Yet a settlement hierarchy evolves through a process of economic change, and quite often the most important aspect of change, in terms of its effects on the levels of urban population, is to be found in terms of the geography of industrialisation, and later the geography of job loss. Industrialisation and industrial decline has a direct effect on the number of jobs in a particular area, while migration, in response to changed patterns of demand for labour, changes the distribution of settlement sizes. Manchester and Newcastle grew to be large cities, not because they were providing specialised services for larger areas, but because they were located at the heart of industrial

regions at a time when the geography of production favoured the "agglomeration" (Weber 1909/1929) of economic activities into large settlements. More recently, economic activity has tended to decline much faster in the larger cities than in smaller centres of urbanisation, leading to a conspicuous flattening of the urban hierarchy. It would be probably a relatively straightforward task to adapt the analysis in later chapters to place it at the centre of an examination of changing settlement hierarchies; such an examination, though it would deal with central places, could not be an analysis framed in terms of existing central place theory.

116. Harvey (1973) was perhaps the most influential work in introducing to geographers the possibility that a Marxian political economy could provide the core of a new and more vital human geography, although the focus of attention in this work was on the internal structure of the city, rather than on the possibilities of crisis in production activity, and effects this might have on the structure of society. "Radical geography" can now be regarded as a core part of the discipline, even though this implies the paradox that being "radical" may be a favourable strategy for professional advancement. Questions of spatial inequality are often tackled in human geography, but as Smith (1977) shows, it is still possible to conceptualise the issue in neo-classical terms.

117. Myrdal (1957 pp.39-42).

118. Myrdal (1957 pp.31-35). Sometimes Myrdal is caricatured as arguing that the process of cumulative causation means the more developed the economy, the higher the level of regional inequality. This is most clearly *not* what Myrdal was arguing; a highly developed economy has greater facilities to spread economic growth than a less developed economy. Regional income inequalities tend to be greatest in countries with an intermediate level of development, where a fast-growing core region tied into the international economy contrasts with a low-income, underdeveloped periphery. See for example Williamson (1965).

A similar set of concepts to Myrdal's "spread" and "backwash" was developed independently and simultaneously by Hirschman (1958, especially pp.183-201), who used the terms "trickling down" and "polarisation." In many respects, Hirschman outlined mechanisms for polarisation during a period of growth more explicitly than Myrdal, indicating for example (p.189) the possibility that rising wages for agricultural producers in an expanding economy would tend to cause the industrial and metropolitan regions in that economy to search for ways to substitute for *internal* imports.

One should never be surprised when theoretical novelties are discovered independently and simultaneously; this is simply the reflection of the fact that theorising comes about in response to particular and real problems which need to be sorted out. It is perhaps more surprising when only *one* person arrives at the new theoretical development. See for example Lamb and Easton (1985).

119. Myrdal (1957 pp.3-7). The long-term trend is undoubtedly one of growth, as a result of technological improvement, but there are often sharp discontinuities. Myrdal wrote at a time when the growth trend outweighed any tendency to crisis.

120. Myrdal (1957), building on earlier work in Myrdal (1944).

121. Myrdal (1957 p.23). The discussion which follows is closely based on pp.23-38 of Myrdal (1957).

122. The local income-employment multiplier is the ratio between the direct effects of a primary change in employment and the indirect

effects. If, for example, 100 jobs are lost directly when a factory closes, while after various time lags 20 further jobs are lost as an indirect effect of the original closure, through local income and demand having been reduced, the multiplier stands at 1.2.

123. Myrdal (1957 pp.37-38).

Addendum: (see page 32)

Since this chapter was typed, the publication of Damesick and Wood (1987) has considerably updated the coverage of the regional economies of Britain, superseding in many respects Manners et al. (1980), and providing a more detailed coverage than Regional Studies Association (1983). This is a highly useful work, even if the omission of discussion of the East Midlands, the South West and East Anglia is to be regretted, these regions (but not the South East!) being classified as non-problem regions.

2 The Industrial Long Cycle

2.1 Some Outlines of the Long Cycle

This chapter attempts to present at least the outline of a theory of the course of economic development in advanced economies, incorporating both their phases of early industrial development and their phases of advanced industrialism. It is suggested that there is a distinct 50 year rhythm of development, and that within each 50 year "Kondriatieff cycle", component sub-periods show distinctive forms of economic development. It is also suggested that a well articulated theory of the long cycle would appear to be central to any understanding of the long sequences of deepening recession, slump and post-slump recovery which have, to a greater or lesser extent, affected the advanced capitalist economies twice in the 20th century.

Such a conception of the economy is hardly new, of course: van Duijn (1983 pp.59-72) lists articles on the economic long cycle, often not available in English, dating back to the turn of the century.[1] Since any long cycle theory is primarily a theory of recession, and perhaps secondarily a theory of recovery, there tends to be a concentration of such works during periods of recession, whether in the 1920s and 1930s (notably Kondratieff 1926, Schumpeter 1939) or in the very recent period,[2] with little discussion of the subject during periods of prosperity. The current work was conceived during a period of slump, with emphasis being concentrated on developing a theory of slump and recovery in the context of the long cycle. Possibly such an emphasis does not show particularly clearly in the present chapter, which attempts to outline the long cycle as a whole, but the more detailed discussions of the British economy, presented in chapters 4 to 8, place considerable stress on the shift from downswing (a period of deepening recessions) to slump, and then to post-slump recovery marking the commencement of the next long cycle.

This section briefly outlines some of the more important groups of theory on the long cycle, and discusses some methodological questions. Most of the recent theorising on the long cycle would appear to derive either from Schumpeter of from the Marxist analysis presented by Mandel (1975, 1978, 1980), with the former writer being perhaps the more influential. It has arguably not been sufficiently discussed in the literature to what extent Schumpeter's theory of the long cycle, which emphasises entrepreneurial initiative and down-grades macroeconomic factors, results not just from Schumpeter's own original researches on

capitalist development, but also from an "Austrian school" view of the capitalist economy, representing the environment of economic thought in which Schumpeter first moved. What is commonly regarded as the central feature of Schumpeter's theory of the long cycle, the emphasis placed on the process of innovation by progressive entrepreneurs, is not an empirical discovery made by Schumpeter about the course of economic development, but rather the slant which one would expect to be developed by an Austrian-trained theorist of the time when developing a theory of the long cycle. Dow (1985 pp.85-88) notes as features of the Austrian school of economics an emphasis on the individual as the unit of study, "with particular attention paid to the entrepreneur", with "entrepreneurs playing a central role in profit-seeking behaviour which requires alertness to new opportunities." Macro-economic aggregates are regarded as having no independence separate of micro-structures, so that the analysis of macro-economic aggregates does not enter into the Austrian picture.[3] These elements correspond closely to identifiable features of Schumpeter's scheme.[4]

The argument above is not intended to nullify Schumpeter's distinctive contribution by reducing Schumpeter to a mere manifestation of a particular paradigm, but rather to place his work into better perspective. If the main positive points (importance of the entrepreneur) and negative points (lack of macro-economic perspective) are to be regarded as results of the directions of Schumpeter's original training, rather than as necessary components of any theory of the long cycle, then matters are clarified considerably. To the current author's broadly post-Keynesian perspective, the central questions are macro-economic, and are concerned with the macro-economic effects of the cycles of growth and decline in specified major industries. The question of innovation undoubtedly merits attention, but is seen in terms of the effect of current economic conditions, and uncertainties about future economic conditions, on investment decisions of particular types, rather than in terms of the psychology of the entrepreneur. "Animal spirits" (cf Keynes 1936 pp.161-163), whether of the investor or of the innovator, are important, but perhaps even more important are the conditions in which such animal spirits are encouraged or discouraged.

Much of the analysis which follows can be seen, it follows, in terms of the current writer's beliefs or biases. These tend towards an "objective" view of the economy, seeing economic change as the resolution of objective economic forces, in opposition to the "subjective" view of neo-classical economics, which concentrates on the choices of the individual and downgrades the role of economic structure.[5] Economic realism is furthermore taken to be essential in any economic theorising;

this is in direct opposition to the neo-classical approach (notably Friedman 1953) which insists on the complete internal coherence of a set of axiomatic theories, and rejects realism as a criterion for evaluating economic theories.[6]

As far as theories of the long cycle itself are concerned, however, Kondratieff's work is regarded as particularly important, and is examined in greater detail in section 2.2 below. It would seem that Kondratieff's work has been unjustly neglected, pigeon-holed among early, but crude, pioneers. Close scrutiny of a short text by Kondratieff (1926/1978) has suggested to the present author that many of Kondratieff's key insights have not only not been developed by later writers, but have actually been lost. A more complete translation of Kondratieff's works would be invaluable.

On the question of methodology, there is a clear distinction to be drawn between the large-scale theoretical constructions of the long cycle in the capitalist economy, and smaller scale theoretical constructions. In the smaller scale economic problem, there is some degree of predictive power. Such statements implicitly demand conditions either of the ceteris paribus type (all other things being equal), or at least some notion of covering conditions (if A, then B, but only if C, D, E and not F, etc.). The essential point about the capitalist economy, with its continuous but not necessarily smooth processes of structural change, is that such background conditions are not stable conditions; C and D might, in a sharp recession, suddenly become unfulfilled and nullify or even reverse the relationship between A and B, presenting the need for a new form of analysis. The question of the breakdown of the Phillips curve,[7] the empirically noted inverse relationship between wage inflation and unemployment (see section 2.8 below), which was thrown into reverse during the post-1966 long cycle downswing, represents a case in point. It may be generally regarded as a matter of principle that predictive, law-like relationships are more likely to break down as a result of being disturbed by broader structural and macro-economic change in the economy than as a result of purely internal contradictions.

The problem is of a different nature when it is precisely these large-scale structural changes which are themselves to be examined. The obvious initial approach is to develop a system of historical tendencies, a set of forces which are liable to act on the economy and on society over a long period of time, leading to system evolution and, under various eventualities, to various forms of crisis. Any sophisticated development of a system of historical tendencies, as in Marx's work,[8]

will incorporate an explanation of circumstances in which various sets of forces are reversed, as a result of systematic tendencies in the economy as a whole, leading to various forms of contradiction and crisis, which may or may not be satisfactorily resolved. Any theory of the business cycle of more than passing interest will have something of this construction to it.

The problem is one of just how important these historical forces are. They may be defined in such a way that any disruption to the operation of historical tendencies would be likely to come from constellations of specific, often localised events which have real impact on the course of economic development, rather than from a yet more general set of historical tendencies. If, however, the historical forces are real and correctly identified, then their outcomes are still likely to be seen, to a greater or lesser extent, in a modified form after specific factors are taken into account. It is argued later, for example, that since the early 19th century the long cycle has run its course consistently, despite wars, despite different industries being at the forefront of development in each recurrence of the long cycle, and despite the introduction of Keynesian economic planning. The only recent major disruption to the rhythm of the long cycle took place in the late 19th century, when the large-scale redistribution of investment to the "white periphery" (USA, Australia, etc.) created its own powerful rhythm of economic development.

The picture is being suggested of a set of historical forces, or, if it is preferred, economic forces, leading, through evolution and crisis, into identifiable patterns of economic development, but moulded by specific features of time and place.[9] Such specific features are important, and have been incorporated in the discussion later in this chapter, at the loss of some generality.

The conception of an organised sequence of phases of economic development is central to the picture of the economic long cycle, as developed here. For much of the long cycle, economic growth is fairly smooth, but this does not mean that smooth growth is a general characteristic of the economic system. Smooth growth takes place only when there are a large number of types of economic activity on an ascendant phase, commonly visualised[10] as being on the steep central portion of a sigmoidal curve. It is only when these leading sectors are still powerfully expansive that full employment and steady growth can be maintained; when these leading sectors approach plateaux of development, growth in the economy as a whole becomes much more uncertain. The approach to economic maturity, defined with respect to the performance of

leading economic sectors, is often marked by a substantial economic boom, as in the late 1950s and early 1960s, but when "maturity" is reached, the possibilities of future growth becomes more limited, and various forms of relative decline set in. Decline, however, breeds further decline; the economy enters a prolonged phase of depressed growth, a downswing which ends in a slump.

The downswing of the long cycle describes the fate of a particular phase of accumulation; the origins of particular phases of accumulation also need to be considered. The slump plays a pivotal role here. The slump is a particularly acute recession at the end of a long cycle downswing; output is not only depressed, but, importantly,excessively depressed. This implies the likelihood of a post-slump rebound as various artificially depressed sectors bounce back. During such a period, economic growth rates are exceptionally high, which in itself is fundamental in setting up conditions in which potentially expansive sectors can grow rapidly, and secure their rightful position in the economic structure. In the meantime, the bulk of job losses in vulnerable sectors would already have taken place in the pre-slump and slump periods, so the retarding effect of older industries is less keenly felt.

The economic record since the mid-18th century shows three very well defined cases of the type of post-slump growth mentioned above. Most recently, the 1930s recovery brought with it the accelerated development of a wide range of "new" industries, particularly in the electrical and vehicles sectors; these industries were pivotal in the "long boom" after the Second World War.[11] At an earlier stage, a slump in the early 1840s was followed by a very powerful railway boom, under which the British railway network grew from being fragmentary to almost complete in a few years.[12] At a still earlier stage Britain's export trade rebounded very sharply after the disruption caused by the American War of Independence, and this rapid expansion of trade encouraged, and then was fuelled by, the rapid expansion of the cotton industry, the "first industrial revolution."[13] An important point to note is that an industrial revolution in the European "core", more specifically, in Britain, induced a considerable economic expansion in the cotton-producing areas of the "periphery", most notably in the U.S.A.[14]

Thus, three recent slumps have been followed by sharp post-slump recovery phases which have accelerated the early growth of new forms of production, and thereby created a generally expansionary economic climate. Two other slump and post-slump phases need to be considered, those of the 1880s and of the 1980s.

The period from the mid-1870s to the mid-1880s was undoubtedly one with pronounced recessionary tendencies in Europe, while afterwards the economic climate was undoubtedly highly expansive up to the First World War, with several European countries industrialising rapidly,[15] and with a major boom taken place in overseas investment, primarily in the "white periphery" (U.S.A., Canada, Argentina, Australia, New Zealand, etc.),[16] but also, secondarily, in the "black periphery", where a relatively small colonial class, with the aid of force, subjugated the native economies into forms directed to enhance European interests.[17] The relationship between slump and later growth was, however, particularly complex at this stage, since the "white periphery" had its own distinctive 20 year long cycle (the Kuznets cycle), with European investment patterns fluctuating markedly according to the economic climate in the white periphery. Most economic series for the period show the imprint of the 20 year cycle more than the 50 year cycle, with investment and growth in the European core tending to be *low* in decades when investment and growth in the periphery were high. A broad overview, however, suggests that once the European economy had passed from its depressive phase of the late 1870s and early 1880s, expansion in the long term proceeded more rapidly in both the core and the periphery, up to the First World War. This complicated period is discussed further in sections 2.5 and 2.6 below.

The other slump which was followed by a period with ambiguous growth trends was that of the 1980s. Despite an "information revolution", to follow the "textile revolution", the "railway revolution", the "imperial revolution" and the "consumer goods revolution", economic growth rates since the 1979-83 slump have been modest. Arguably the reason for this is at least partly, and paradoxically, that the state has far greater powers of economic management now than after any previous slump, and has undertaken, in most advanced industrial economies, a policy of "stagnation management" (keeping all macro-economic aggregates in balance, but at less than full employment) rather than a strategy of liberating productive forces.[18] Ironically, the Governments which have intervened most strongly to limit economic growth in a post-slump period, and thus to check the emergence of new productive forces, have generally been precisely those which have been most strongly committed, in their rhetoric, to the virtues of the free market.

Five major slumps have been identified, and each case the slump has been followed by a period of rapid and sustained growth. While it has often been the case that part of the post-slump expansion has been over-speculative, with the result that a short but severe recession takes place about five years after the end of the slump (the crashes of

1847 and 1890 being particularly clear examples), the time series considered over a period of ten to twenty years generally shows a more impressive picture of post-slump growth. It is argued, however, that the immediate post-slump rebound is a crucial triggering factor in the development of the high growth industries which dominate the longer term post-slump recovery, otherwise known as the upswing of the long cycle. The theory of the long cycle developed in this chapter is basically a theory of slump; of the origins of slump, of the process of slump, and of the long-term outcomes of slump.

One of the most distinctive features of the current argument is that the upswing of the long cycle is held to be endogenously driven, rather than determined by exogenous factors. It is held that there is no need to explain the upswing of the long cycle following the slump in terms of extra-economic forces; economic forces are quite sufficient. This is in contrast to the approach of Mandel (1975, 1978, 1980) who suggests that the downswing of the long cycle is inevitable and thus endogenously driven by the "contradictions of capitalism", while the upswing is contingent upon major extra-economic shocks, such as war.[19] Mandel's approach thus implies that when the capitalist economy finally runs out of luck, the final collapse of capitalism will take place. The current approach is also in contrast to that of Schumpeter, who regards the phases of the long cycle are driven by the activities, *exogenous* to an economy in neo-classical equilibrium, of entrepreneurs. Thus a *spontaneous* burst of entrepreneurial activity, often in innovative fields, sets the pace of economic evolution.[20]

Mandel's analysis is, it seems, historically flawed, especially with respect to the 1930s. He regards the recovery from the 1930s slump as originating with the Second World War (in the U.S.A.), and with the aftermath of the Second World War (in Western Europe). This is the only interpretation of the situation which is consistent with Mandel's theoretical argument that a major external shock is required to allow the capitalist economy to recover from the slump. If however, economic time series are examined from the period between 1932 and 1939 (see, especially, Tables 2.1, 2.2),[21] it will be found that rapid increases in industrial production and significant falls in unemployment, were characteristic of the *pre-war* years in all major industrial economies except France. It is, quite simply, incorrect to invoke the Second World War as the factor allowing a period of prolonged economic growth to take place after a depression.

Day (1981) provides an interesting examination of Soviet economic analysis of the West in the inter-war period, which sheds light on the

problems which the 1930s recovery created for analyses based on the dogma of the final economic collapse of capitalism. Confronted with the question of vigorous and renewed economic growth in the West, Soviet analysis retreated into ad hoc interpretions: "Capitalism, it was announced, had entered a new phase - a depression of a 'special kind'".[22] As Day notes, it was unclear precisely what was "special"; could internal forces account for this improvement, or had one to argue that the rise of fascism, an external political factor, was necessary for capitalism to survive? The Second World War and the Marshall Plan, still in the future, could clearly not be invoked; neither indeed could Keynesian economic policy account for the recovery.

Schumpeter's thesis can be interpreted to suggest that the depression was to be overcome by a wave of entrepreneurial energy, regarded as an exogenous factor. This seems to be more realistic than using wars, etc., to explain the upswing, but two features need to be borne in mind. Firstly, entrepreneurial activity is "extra-economic" only in the sense that the term "economic" is restricted to describe features present in a Walrasian general equilibrium model.[23] Under this restrictive definition, virtually any feature which promotes economic growth (thus, breaks an equilibrium) could be described as "extra-economic", whether such features are responsive, or not, to changing economic conditions. Secondly, and relatedly, Schumpeter's disregard for macro-economic analysis, already noted, made it difficult for him to assess what the true relationship is between general, macro-economic conditions, and the rate of innovation, or the level of new entrepreneurial activity.[24]

Later writers, notably Mensch (1979) and Freeman, Clark and Soete (1982), have attempted to gather empirical material on innovation, in order to examine in more detail the thesis that, as Mensch describes it, "innovations overcome the depression". Rosenberg and Frischtak (1984) point out various weakness in the neo-Schumpeterian view of the long cycle, and in particular note that "a critical gap in establishing the recurrence of a long cycle is the absence of a clear economic mechanism that causes the system to move upwards from its lower turning point".[25] Rosenberg and Frischtak also note[26] that the economic conditions in a depression are precisely those which would encourage caution among individual members of the business community and thus *discourage* significant innovation. There is a noticeable lack, in the neo-Schumpeterian literature, Rosenberg and Frischtak argue, of any coherent analysis of causal links between basic innovations, profitability and the "swarming" of new products and processes, such that would establish

the precedence of innovation clusters over investment outlays and macro-economic movements.

The argument being presented here is that the clustering of innovations takes place not in the slump but in the vigorous post-slump recovery. Thus, innovations do not cause the recovery, but merely represent part of the recovery, and not even the dominant part of the immediate recovery. The industries which have the most substantial impact during the decade after slump are not completely new industries, but rather "adolescent" industries, such as the railway industry in the 1840s, which are already partially established, but which have considerable future scope for expansion.

Van Duijn (1983, 1984) also emphasises the point that conditions in an economic recovery are far more favourable for innovation, and for expansion generally, than those in a depression. His classification of the long cycle, however, suggests that in the inter-war years the recovery started in 1937, rather than in 1932. The period between 1932 and 1937 is classed by van Duijn as one of depression, yet economic growth rates of around 5% per annumwere typical, and the surge of basic innovations analysed by Mensch (1979) and Freeman, Clark and Soete (1982) peaked around 1935, which contradicts van Duijn's assessment. van Duijn, in placing the start of the recovery not at the trough of the slump but at some arbitrary point after, thus misses the crucial point. It should also be noted that van Duijn's chronology of long cycles is highly suspect in a number of cases, most remarkably in that the UK slumps of 1839-1842 and 1883-1886 are presented as taking place not in phases of depression but rather in phases of recovery.[27]

The methodological position followed by the present writer resembles far more closely that of Kondratieff than of Mandel, or of Schumpeter and his followers; the articulation of the long cycle is held to depend on endogenous, economic factors rather than on external factors. This implies, most importantly, that following a slump, a prolonged phase of recovery and high growth rates will tend to materialise, unless this new upswing is *suppressed* by extra-economic factors.

Section 2.2. below examines in more detail Kondratieff's arguments; these are regarded as far more fundamental than most recent long cycle theorists have given credit for. Section 2.3 attempts to develop an economic theory of the long cycle, without direct reference to historical events. Section 2.4 attempts to show the implications of a long cycle analysis for the analysis of economic change over shorter periods, and in many respects represents an introduction to the cyclical analysis of regional employment change in Britain presented in chapters

4 to 8 below. Sections 2.5 and 2.6 concentrate on the historical economic performance of the major capitalist economies, with much reliance placed on the time series for economic growth in the UK, France, Germany and the USA, presented as Table 2.1. Section 2.7 considers the question of innovation during the long cycle, and develops an alternative to the Schumpeterian explanation of innovation clustering. Section 2.8 considers the question of price changes during the long cycle, with particular attention given to the high rates of inflation which were present in the post-1966 long cycle downswing, in contrast to the *deflations* which marked previous downswings. Finally, section 2.9 opens up the question of long cycles before the industrial revolution and attempts to suggest points of linkage between the current analysis of 19th and 20th century long cycles with Wallerstein's (1974, 1980) discussions of the pre-industrial development of the capitalist world-system.

2.2 Kondratieff and the Question of Endogeneity

The model of the long cycle being presented in this chapter is one of a cycle endogenously driven to a far greater extent than is allowed for in most previously existing versions. Wars and revolutions are regarded primarily as interruptions to the course of the long cycle rather than as motors of the long cycle. The processes of innovation and invention are regarded as being largely demand-led, in correspondence with Schmookler's (1966, 1972) analysis of innovation, rather than as being the primary initiators of economic change. Schmookler's arguments and empirical results, based on the historical study of several major sectors of the USA economy, suggest that overall levels of inventive and innovative activity would tend to be correlated with overall levels of investment in the economy, and thus, at a remove, with overall rates of growth. If rates of economic growth are to vary systematically through the long cycle, then one would expect that rates of innovation and invention would also vary systematically through the long cycle, and would also influence future patterns of growth. This, however, is part of an endogenous economic rhythm, rather than the result of non-economic processes.

The main difficulty, perhaps, in explaining, on paper, to a reader, an endogenous theory of the long cycle is that such a theory is not reducible to a monocausal explanation. One cannot say, for example, that the long cycle is *caused* by the rise and fall of a generation of innovations (Schumpeter 1939) if one holds that the long cycle is endogenously driven. An endogenous explanation, to be accurate must, paradoxically, be vague; Kondratieff in his most famous paper, contents himself with the statement that "long waves arise out of causes which are inherent in the essence of the capitalistic economy".[28] This argument can be taken further. In section 2.3 below, emphasis is placed on the degree to which cyclical conditions of a particular type may reasonably be expected to be followed by cyclical conditions of another type, which in turn is likely to be followed by another type of economic performance. Out of these cyclical beats, a long term economic rhythm emerges.

The detailed formulation of the theory of the long cycle presented here is the author's own, but most of the basic principles of analysis can be found in a short, famous, but much under-estimated paper by Kondratieff (1926/1978). While Kondratieff was rather cavalier in his treatment of statistics, a feature which has been much noted,[29] his more general methodological approaches still merit close scrutiny.

UNIV DUNELM

Kondratieff's basic statement of endogeneity is as follows:

"The long waves belong really to the same complex dynamic process in which the intermediate cycles of the capitalist economy with their principal phases of upswing and depression run their course. These intermediate cycles, however, secure a certain stamp from the very existence of the long waves. Our investigation demonstrates that during the rise of the long waves, years of prosperity are more numerous, whereas years of depression predominate during the downswing."[30]

He continues by noting certain empirical characteristics of the long waves. Firstly, he suggests, agriculture suffers an especially long and pronounced depression during the long cycle downswing. (In the context of the 20th century in advanced capitalist economies, greater emphasis would need to be placed on an industrial depression).[31] Secondly, during long wave recessions "an especially large number of important discoveries and inventions in the technique of production and communication are made, which, however, are usually applied on a large scale only at the beginning of the next long upswing."[32] Thirdly, at the beginning of the upswing gold production increases as a rule (in 19th century conditions) and the world market for goods in generally enlarged by the assimilation of new, and especially of colonial countries. Fourthly, it is during the long cycle upswing that the most disastrous and extensive wars and revolutions occur.

Kondratieff then proceeds to consider whether these facets are extra-economic causes of the long cycle or regularities within the long cycle. His comments on changes in technique are particularly interesting when juxtaposed with Schumpeterian notions of the long cycle, and are worth quoting in full:

> "Changes in technique have without doubt a very potent influence on the course of capitalistic development. But nobody has proved them to have an accidental and external origin. Changes in the technique of production presume 1) that the relevant scientific-technical discoveries and inventions have been made, and 2) that it is *economically* possible to use them. It would be an obvious mistake to deny the creative element in scientific-technical discoveries and inventions. But from an objective viewpoint, a still greater error would occur if one believed that the direction and intensity of those discoveries and inventions were entirely accidental; it is much more probable that such direction and intensity are a function of the necessities of real life and of the preceding development of science and technique.

"Scientific-technical inventions in themselves, however, are insufficient to bring about a real change in the technique of production. They can remain ineffective so long as economic conditions favourable to their application are absent. This is shown by the example of the scientific-technical inventions of the seventeenth and eighteenth centuries which were used on a large scale only during the industrial revolution at the close of the eighteenth century. If this be true, then the assumption that changes in technique are of a random character and do not in fact spring from economic necessities loses much of its weight. We have seen before that the development of technique itself is part of the rhythm of the long waves."[33]

This is the basic position followed in the present discussion. In stating this, it is not being suggested that there is a mechanical relationship between economic change (the cause) and technical change (the effect). A more complex set of relationships is suggested in which scientific-technical progress provides the necessary pre-conditons for innovation while general economic conditions set the extent to which such innovation takes place, and the forms in which it takes place.

Kondratieff notes that the opening up of new countries for the world economy cannot be regarded as an outside factor which will satisfactorily explain long waves, as such an opening up depends not simply on the presence of new countries but on the correct economic conditions being present for such countries to be brought into production. There are parallels to be drawn with his arguments on technical change. At the beginning of a long cycle upswing new countries are entwined in the world economy, countries which were known about before but not developed. Kondratieff cites the cases of the Argentine, Canada, Australia and New Zealand as being significant here in the context of the late 19th century upswing in the long cycle.

It is clear that in a long cycle upswing industrial development and geographical expansion can play parallel roles in providing scope for major capitalist expansion, given appropriate economic conditions. It is also possible that geographical expansion can substitute for industrial modernisation during a long cycle upswing. The significance of this in the U.K. in the late 19th century will be discussed further in section 2.6.

Kondratieff also notes that increases in gold production do not represent an outside factor causing the long waves, since gold, like any other commodity, is produced according to existing economic conditions and not independently of them.

Kondratieff also dismisses the argument (cf. Mandel) that wars and revolutions cause long waves, arguing that these events "are not caused by arbitrary acts of individual personalities ... (but) originate from real, especially economic circumstances."[34] Kondratieff's discussion of how wars and revolutions fit into the rhythm of the long cycle is not very convincing, however. He suggests that they arise most readily in phases of accelerated economic development when the fight for markets and raw materials is at its most intense. There is considerable doubt, however, about the completeness of Kondratieff's time series of wars and revolutions,[35] and about the extent to which Kondratieff distinguishes between major and minor conflicts.[36]

It is probably more correct to suggest that conflicts can emerge at any time during the long cycle, but that different forms of conflict tend to take place at different times. An extremely important feature of the long cycle in the 20th century is the extent to which the social tensions generated during the long cycle downswing can, under certain conditions, lead to a set of forces which bring populist, authoritarian, right-wing and anti-labour governments to power. Such governments tend to generate powerful upward pressure on military expenditure, which is usually held in check by recessionary conditions in any downswing phase. When downswing disappears and is replaced by the expansionary economic climate of a post-slump period, military projects are less likely to be held in check by financial constraints, leading to a perilous situation in which war becomes increasingly likely. The early part of the upswing, perhaps 5 to 10 years after the end of the slump, would represent the time in which full scale war is most likely to break out. The rise of European Fascism, leading eventually to the start of the Second World War, is the main historical example of such a chain of events, although the acceleration of the arms race by the West, notably in the USA and the UK under the Reagan and Thatcher governments, shows certain parallels. The major difference is that the more extreme conditions of the 1930s made world war probable; in the 1980s it would be over-dramatising to suggest anything stronger than that world war is possible.

Kondratieff's analysis undoubtedly has its weaknesses, but once allowance is made for the obvious impossibility of his introducing most of the significant 20th century developments, both economic and political, into his analysis, it still remains the case that in the space of a short paper, he had provided a remarkably pertinent account of the long cycle. Later writers have tended to borrow Kondratieff's name in describing the 50 year long cycle and to criticise, justifiably, his statistical presentation before presenting their own models of the long cylce. Kondratieff's *theoretical* arguments have been largely ignored and yet it

is precisely in these arguments that the true significance of Kondratieff's work would seem to lie.[37] In several respects, notably in the emphasis given to the extent to which the level of innovation is determined by general economic conditions, Kondratieff provides insights which have been lost, rather than developed, by later long cycle theorists.[38]

Kondratieff's central notion was that the long cycle of 50 years was endogenously driven; the normal processes of capitalism, rather than the exceptional ones, are seen as generating the long cycle. On this point it is possible to agree. Kondratieff suggests, however, in later papers not available in English[39] that the explanation for the long cycle lies in the life span of large-scale investment projects. This mechanism does not appear to be plausible as an explanation of large-scale economic shifts, and section 2.3 below provides a critique. Furthermore such an explanation represents an intellectual retreat on Kondratieff's early position, which eschewed monocausal explanations of the particularly complex phenomenon of the long cycle. It is highly probable that this theoretical retreat was forced upon Kondratieff by the increasingly repressive political conditions in the Soviet Union, under which adherence to the "party line" was a far safer activity than independent intellectual enquiry.[40] Nevertheless, Kondratieff was later to die, at an unknown date, in Stalin's great purge.[41]

2.3 The Long Cycle: Some Basic Explanations

There are various short-term fluctuations in economic activity which can be explained in terms of physical factors; diurnal and seasonal rhythms in economic activity are strongly marked. There have been attempts made, particularly in the early years of business cycle theory, to explain business cycles by such physical factors; the alleged 11 year sun-spot economic cycle formulated by Jevons[42] is a well known example. Another version of the "physical" approach to business cycles is to suggest that a recession is due to the large-scale scrapping of machinery of a particular generation which has physically worn out. Thus, a four year business cycle is due to the scrapping of machinery with a four year life span, a seven year business cycle is due to the scrapping of machinery with a seven year life span, while a fifty year business cycle is due to the scrapping, not so much of machinery, but of past infrastructural investment, with a fifty year life span.

The "echo effect" model of the business cycle,[43] which holds the recession to be an echo of a past investment boom, is unconvincing. Undoubtedly, large scale scrapping of machinery takes place during a recession, but this is more likely to be as a result of overcapacity, causing the scrapping of physically viable but ageing machinery, than as a result of the physical wearing out of machinery. As far as the echo effect in the long cycle is concerned, even if it existed at all it would lead to a statistically barely detectable "noise" in the economic time series; the effect would certainly not be powerful enough to explain why unemployment stood at 1% in 1966 and 13% in 1983. Thus, while there have been various attempts to interpret the long wave as an echo wave,[44] these are unconvincing.

The general principle would seem to be that it is the length of the business cycle which influences the economic life span of machinery, and not the life span of machinery which sets the length of the business cycle.

Modern theories of the business cycle[45] are distinguished by concentrating on economic dynamics rather than on attempting to match economic cyclical movements with various physical changes, which are assumed to have causal effect. In most business cycle models, the cycle is driven by the dynamics of investment. A very simple version of the model would suggest that in the upswing, investment expands sufficiently rapidly to cause overcapacity, a situation in which the existing capital equipment can produce, in the normal course of events, more than can be satisfactorily sold. This leads to a recession, and a decline of investment which continues until such a stage at which it is possible to

re-expand investment. This brings about a cyclical upswing which continues until overcapacity again becomes a problem, and another recession starts. Perhaps the most important point to note is that capacity ceilings set an upper limit to the upswing of the business cycle.[46]

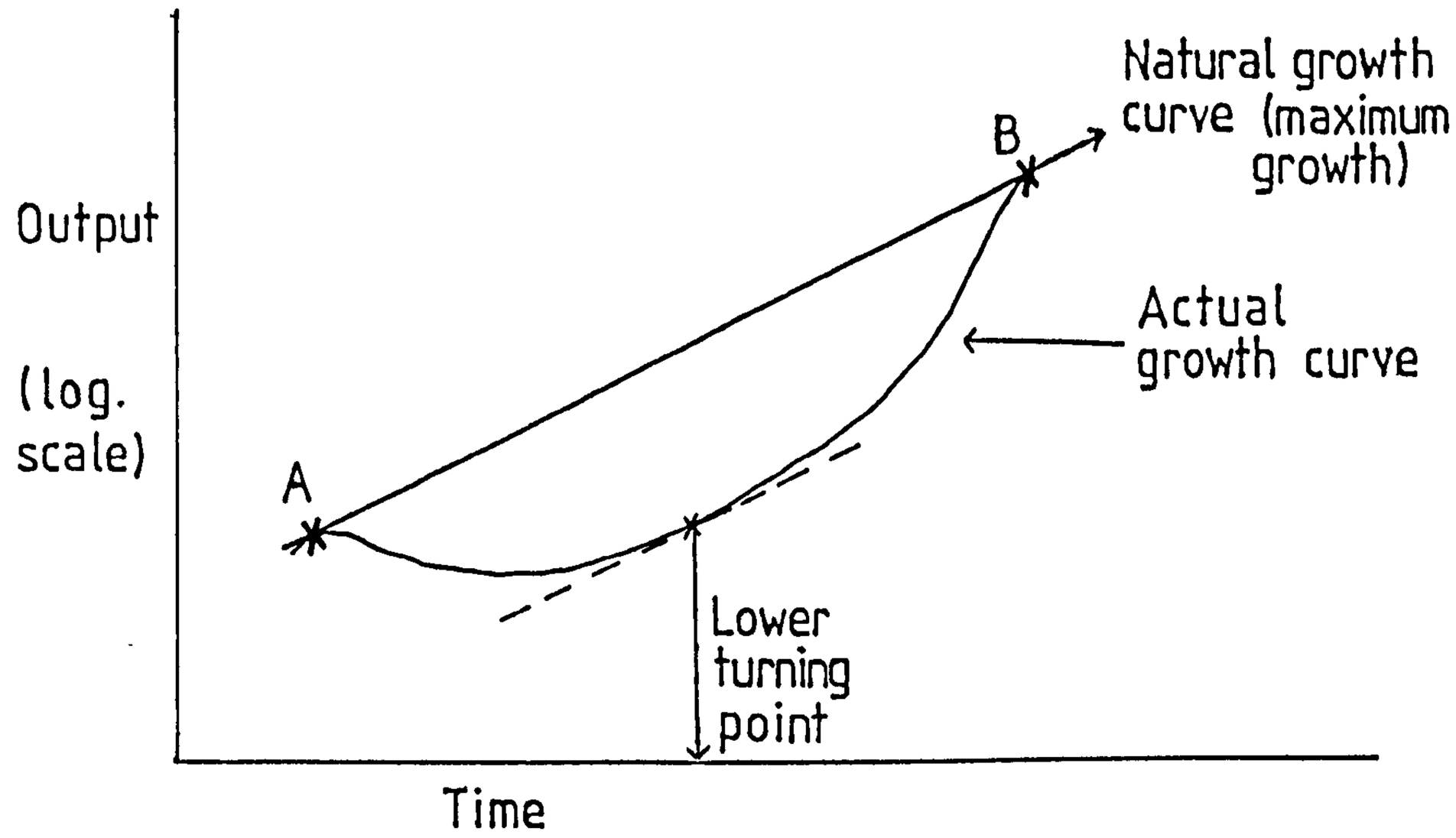
Business cycles are strongly marked features of economic life; the large majority of economic time series indicate a systematic alternation of periods of fast growth, lasting perhaps three years, and periods of slow growth, lasting about the same length of time. The existence of such business cycles is not now seriously disputed, but the status of the 50 year long cycle is more controversial, partly because of the relatively small number of cycles upon which statistical tests may be carried out, and partly because the dynamics of the long cycle are more complicated than those of the business cycle. The model which follows is based on systematic changes through time in the nature of the business cycle.

The concept of the long-term average growth rate is an extremely important one in long cycle analysis. This growth rate is the average growth rate between two points of full employment and full capacity utilisation, and is set by the average rate of growth of productivity and the average rate of growth of population. If, for example, productivity tends to grow by 3% per annum while population tends to grow at ½% per annum, the long term average growth rate would tend to be 3½% per annum.

The long term average growth rate thus defined is identical to Harrod's "natural rate of growth",[47] but the terminology has been changed to denote a shift of emphasis. Harrod's main concern was to identify the economic conditions which would have to be met to allow for the possibility of a prolonged period of steady growth, and to assess whether the set of conditions which need to be assumed are realistic or not. In this formulation, the natural rate of growth would be the maximum sustainable rate of growth from a position of full employment and full capacity utilisation. Measured from other points of the business cycle, however, the natural rate of growth represents the rate of growth which would keep the unemployment rate stable; from such points on the cycle, the natural rate of growth represents an *average* rate of growth, while deviations in the unemployment rate indicate whether growth is faster or slower than average.

From a point of full employment, the natural growth rate is simultaneously a maximum growth rate and, necessarily, an average growth rate, when comparison is made with any later point of full employment.

The paradox can be explained diagrammatically



Points A and B represent cyclical peaks with full employment. The straight line (which would be an exponential curve with a natural scale on the y-axis) represents the maximum sustainable growth curve from point A, while the curved line represents the actual growth performance through the business cycle. The compound growth rate for the period AB would be identical for both curves, even though the average level of *output* is considerably lower under the "actual" curve than under the "natural" curve. Indeed one can suggest, from this perspective, that the business cycle represents a mechanism by which the maximum sustainable growth rate is maintained despite the periodic need to resolve difficulties of overinvestment and over-production. In the "natural" curve the maximum sustainable growth rate is maintained throughout each part of the cycle, whereas in any actual cyclical curve, the period subsequent to a capacity and employment peak is one of below average growth, which is then followed by a period of above average growth. The lower turning point on the cycle is regarded as the point at which the actual growth rate equals the average growth rate, which is also the point at which unemployment peaks. Prior to this point, growth is below average and unemployment is increasing, while subsequently growth is above average and unemployment decreases.

It should be emphasised that under this definition of the turning point of the business cycle, the turning point occurs when an upward trend in output is already present. The turning point of the cycle according to shifts in output trends occurs slightly earlier. The official statistical series for cyclical indicators[48] regards the unemployment series as a lagging indicator of the business cycle rather

than as a coincident indicator, the lag being about six months. For present purposes, however, it is much more convenient to deal with a set of definitions in which recession is regarded as a phase with consistently below average output growth and rising unemployment, while the recovery is regarded as a phase with consistently above average output growth and falling unemployment. It is worth noting, though, that this perspective opens up the possibility of defining a period of "late recession", when output trends are improving but unemployment is still rising, and contrasting this with a period of "full recession." Later, the distinction along these lines between "early slump" and "late slump" will be emphasised.

The assumption has so far implicitly been made that economic growth through the business cycle as a whole has accorded to the long term average. The critical step in moving from a business cycle analysis to a long cycle analysis is to relax this assumption, and to allow the upswing and downswing phases to be dissimilar in strength.

Consider firstly the case in which there is full employment at the peak of the cycle, followed by recessions of varying strengths. The constraint of full capacity would set limits to the strength of any subsequent recovery.

If such a recession is mild, then the economy readily recovers to a phase of full capacity utilisation, but not beyond. In effect, the strength of the recession sets, and equals, the strength of the recovery.

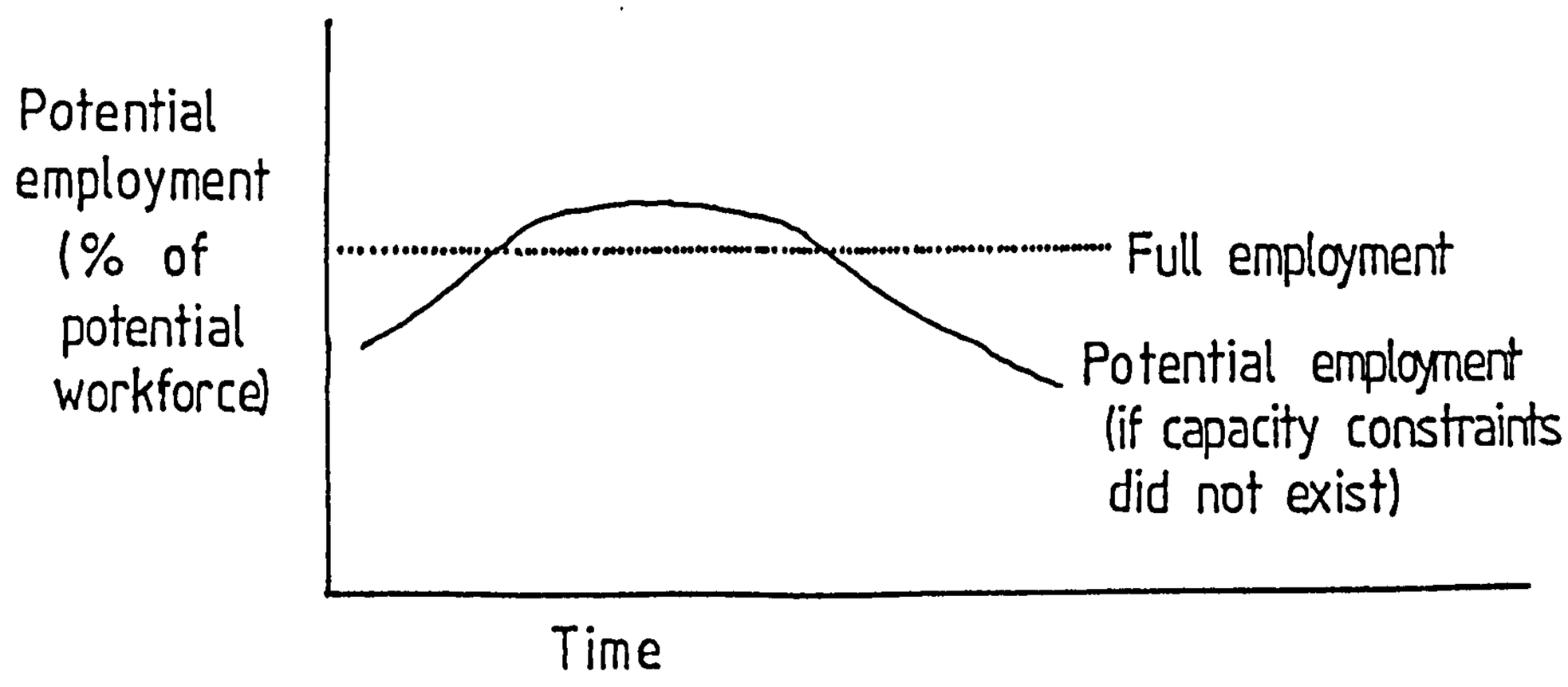
If, however, the recession is strong, a more problematic situation arises. The strength of the recovery phase is not then constrained by capacity ceilings, but neither is the economy likely to return to full employment. An economy with 4% unemployment requires substantially faster growth to generate full employment than an economy with, say, 3% unemployment, yet it is not certain that such growth would be forthcoming. There are constraints upon economic growth other than capacity ceilings.

From a position of full employment, if a recession is weak, the economy returns to full employment, but if a recession is strong, unemployment may tend to accumulate, according to the strength of recession. This accumulation of unemployment might well be absorbed in a later recovery after the next recession, if that recession is weak, but it is more likely that the unfavourable background conditions which made the previous recession unusually severe will similarly affect later recessions. Thus a severe recession is likely, unless it took place under unusual conditions, to represent part of a depressive sequence.

To understand why a weak recession might at some point be followed by a series of strong recessions, a consideration of structural change in

the economy is required. Pasinetti (1981) notes that total employment is the sum of employment in each discrete sector, and that employment in any individual sector with decreasing technical coefficients (i.e. increasing productivity) will increase for a while as new markets are penetrated, but will eventually decline as the rate of output starts to increase at a slower rate than output per head, as markets start to become saturated. Aggregating across existing sectors, there comes a time at which employment falls, and will tend to continue to fall. This can only be counteracted by the creation of new economic sectors (the process of "basic innovation") or by the creation of employment by the state. Pasinetti tends to be optimistic about the prospects of the state intervening to create full employment in such conditions,[49] but it remains doubtful whether it is possible for the state to continue to act in such a way over a long period.

The overall trends in employment, through time, in an economy with a fixed, or slowly increasing, number of leading sectors[50] (those sectors which dominate an upward curve) might be as follows



The dotted line represents the full employment position. For much of the cycle, the potential for employment, given by the expansionary tendencies of various economic sectors, is greater than can actually be absorbed by the existing workforce; capacity ceilings become a binding constraint. At the sectoral level this implies a squeezing out of employment from low wage sectors (agriculture, miscellaneous services, etc.), and, possibly, an inhibition of innovation in sectors *outside* the main technological band-wagons.[51] At the macro-economic level, there is no difficulty in maintaining full employment; the dynamics of growth are such that capacity ceilings are regularly being pressed.

When the employment curve is on its downswing, full employment is not a position automatically attained; growth trends are too slow to allow this. A trend towards declining employment implies that recessions become increasingly severe; it is in recessions that the bulk of job loss

takes place. Thus, the argument stated earlier, that under conditions of full employment a severe recession will tend to be followed by further severe recessions, is *not* the argument that a random disturbance at full employment will generate an explosive series of cyclical oscillations.[52] It is, rather, the argument that specific conditions, notably the slowing down of growth in previously dominant growth sectors, will lead to a tendency for recessions to become severe, a tendency which applies not simply to the first recession of a series, but also to subsequent recessions.

This argument helps resolve the question of the strength of the cyclical recovery after a severe recession. In an earlier approximation, the statement was made that at a period of full employment, the strength of the recovery would normally be sufficient to return the economy to full employment; this, it can now be seen, results from the highly favourable background economic conditions characteristic of the full employment period. The severity of recession in a subsequent cyclical downswing, however, would imply that background conditions are becoming less favourable. This slows down the potential rate of growth in a recovery. While in one sense the relaxation of capacity constraints allows an increased rate of growth following a severe recession, the long-term depression of employment and growth trends would imply a reduction in the possible degree of growth in a cyclical recovery. Thus, it is indeterminate whether economic growth in a cyclical upswing in a long cycle downswing is stronger or weaker than economic growth during a period of full employment. The empirical record since the Second World War (see Table 2.1) suggests that the main difference between the pre-1966 period and the post-1966 period was that recessions tended to be more severe after 1966 than earlier; there is little systematic difference between the two phases in terms of the strength of cyclical upswings.

Thus a situation is postulated of depressed long-term growth trends, expressed mainly through an increasing severity of recession, following a prolonged period with favourable growth trends. There is a tendency for unemployment to accumulate through each business cycle as the strength of the cyclical downswing exceeds the strength of the recovery. If, though, for some reason the generally depressive trends became transformed into generally expansive trends, the conditions would be appropriate for a prolonged boom, but a boom at less than full employment. The critical feature in such circumstances is that with high unemployment, growth is not constrained by the labour capacity ceiling, thus allowing the possibility of a rate of growth of employment considerably higher than the long-term average.

The next question to be asked is that of how depressive trends are replaced by expansive trends. At a highly general scale, one could suggest that the transformation is the result, firstly, of the expansion

of a new generation of industries, and secondly, of the tendency of earlier recessions to eliminate a substantial proportion of capacity in the industries in the weakest positions, and thus decrease the weighting of the "declining industries" in the overall growth rate. Without, however, some understanding of the more detailed mechanisms, this form of general explanation is not particularly helpful. The question of the slump is regarded as pivotal.

In a long cycle downswing, there is a tendency for growth rates not simply to decline, but also to decline at an accelerating rate. Thus, the first recession of the downswing (e.g. 1966-68) tends to be weaker than the second (e.g. 1970-72), which tends to be weaker than the third (e.g. 1973-76) which tends to be weaker than the fourth (e.g. 1979-83).[54] By the time the fourth recession is reached, economic decline is exceptionally severe.

The culmination of such a series of recessions may be termed a "slump". The word "slump" is used in this thesis in a technical sense to denote the last, and usually particularly severe, depression of a long cycle downswing. Thus the depressions of 1920-22 and 1973-76 are not regarded as slumps, while the depressions of 1929-33 and 1979-83 are most definitely regarded as slumps.

The structural degeneration of the industrial economy, thus the long term tendency to job loss, is the primary factor causing the slump to be severe. By such a late stage of the downswing, there will be many industries with a particularly severe tendency towards declining employment, while many of the expanding industries of the previous long cycle upswing will by this stage be large-scale losers of jobs.

A heavy rate of job loss as a result of long-term instability, but triggered by recession, is the primary component of slump. An important additional component is that a severe rate of job loss will itself cause a substantial reduction of the general level of demand in the economy, and thus either bring about a secondary wave of job losses, or eliminate the creation of new jobs which might otherwise have taken place. In terms of recent British experience, levels of economic activity would have had to adjust to a situation in which the unemployment rate was not 5%, but rather, over 10%.

A third factor would be a degree of cyclical over-deepening to slump as output levels are adjusted not to what is structurally required to promote a steady level of post-slump growth, but rather to some lower level. This artificial over-deepening creates the possibility for a substantial post-slump rebound, which will tend to leave post-slump rates of growth particularly high, but only for a short period.

The slump is generally twice as long as other recessions, certainly

in the 20th century context, and lasts for abour four years instead of two. Job loss is exceptionally heavy during the early part of slump (e.g. 1929-31, 1979-81), but reduces considerably in the "late slump". In that the late slump is characterised by a modest rate of job loss, rather than by employment growth, it must be classed as a secondary period of recession rather than as a cyclical recovery. During the late slump, the rate of job loss is not as uncontrollably high as in the early slump, and various adjustments are made within the economy so as to realign with the new depressed levels of output. The late slump is a recession of approximately the same severity as recessions at full employment, with the unemployment increasing by perhaps two percentage points, but is super-imposed on conditions of slump unemployment.

After the slump, there is considerable potential for economic expansion, a potential which has to some extent been sacrificed in the 1980s as economic stabilisation ("stagnation management") has in most cases been preferred to policies for accelerating the expansion of the economy. The upswing since the end of the slump has certainly been as prolonged as would be expected on the basis of this model, chiefly derived in 1981 and 1982, but not as vigorous as had been expected. While most of the previous discussion has been based on the experience of the advanced capitalist economies between the Second World War and the early 1980s, what follows is based more on the experience of the 1930s than of the 1980s.

The period immediately after a late slump is generally one of extremely rapid growth. Table 2.1 shows, for example, that in the UK output grew by 6.2% in 1843-44, and 6.7% in 1933-34, while in Germany output grew, after an exceptionally severe slump, by 13.4% in 1932-33. This may be taken as a response to cyclical over-deepening, and merely a short-term phenomenon. There is, however, also the question of whether such growth can breed further growth, thus, whether this brief recovery phase is also the trigger for a more substantial boom. The historical experience suggests that this is indeed the case; there was a major railway boom in Britain in the mid-1840s, which led, after a brief depression starting with a financial crisis in 1847, to a period of high growth in the 1850s.[55] Similarly, there was substantial economic expansion during the mid to late 1930s, which continued, after a war-time interruption, up to the mid-1960s. After the slump of the 1880s, there was a rapid growth in UK output in 1886-87 which lasted until the late 1890s, despite the argument (sections 2.2, 2.6) that the post-1886 long cycle was the weakest of all the long cycles in Europe as American cyclical rhythms strongly influenced the pace of economic development.

A phase of fast economic growth is a phase which generates favourable expectations of economic growth, which encourages high rates

of investment which encourages the continuation of high rates of economic growth. This is particularly the case if a substantial proportion of investment takes place in newer industries (such as the car industry of the 1930s) which have considerable scope for expansion, or if the investment takes place in completely new directions, the "basic innovation" stressed by the neo-Schumpeterians. In that employment growth tends to be greatest in industries in their "adolescent" phase, industrial employment growth in the early part of the long cycle upswing will tend to be dominated by industries which were adolescent at the time of slump, while industrial employment growth in the later part of the upswing will tend to be oriented more to the completely new industries of the recovery. If a post-slump recovery is characterised by rapid growth of an adolescent industry, but by low levels of basic innovation, as in the mid-1840s, the early part of the long cycle upswing will tend to be strong (1843-1857) while the late part of the upswing (after 1857) will tend to be weak.

The post-slump recovery is, it is suggested, generally an exceptionally strong cyclical upswing. In contrast with the cyclical recoveries of the downswing, it is not held back by the economic dominance of declining industries (these have already declined), while in contrast with cyclical upturns at low levels of unemployment, it is not limited by labour market capacity. If one adds to this some degree of recovery from cyclical over-deepening in the slump, it is likely that the recovery phase will be strong enough to encourage a major expansion of investment in new directions, investment which had previously been discouraged by the unfavourable market conditions of the long cycle downswing. It is basically the expansion of such newer forms of investment which ensure that the post-slump recovery is the first part of a long cycle upswing, rather than merely a more favourable than average recovery in a period of severe recessions.

Once the long cycle upswing is established, the path to a return to full employment is fairly clear, even if full employment itself takes a long time to reach, and perhaps is never reached if the labour market is fragmented enough to contain a permanent underclass.[56] The new industries expand, create employment, and, importantly in the context of the post-war upswing, create the preconditions which allow for expansion in the public service sector. Recessions in the older industries become less important, although they are still capable of causing severe local economic problems.

After the slump, the general tendency is (or, in the context of the mid-1980s, "ought to be") for employment to expand rapidly, eventually allowing for a return to full employment. The most fundamental economic

problem at the moment in the advanced capitalist economies is how to get this process in motion, a problem which, ironically, has tended to be solved spontaneously after previous slumps. After that, there is the question of whether the *downswing* is inevitable. On this more distant problem, one should keep an open mind.

2.4 Constructive and Degenerative Business Cycles

The previous section presents a basic model of the industrial long cycle, with its phases of expansion and relative stagnation. Before introducing more empirical discussions, including those on the question of the length of various phases of the long cycle, it is useful to develop some method of comparison of various pictures of the long run, as seen through the combined effects of successive business cycles.

An individual business cycle may be said to be constructive (+), degenerative (-) or neutral (=) according to the total change in the rate of unemployment through the business cycle. Measurements are taken from peak to peak, rather than from trough to trough, on the basis that it is generally the recession which sets the pace for the subsequent recovery, rather than the recovery which sets the pace for the subsequent recession; a business cycle measured from peak to peak is a more meaningful unit of analysis than one measured from trough to trough. The long cycle, however, is regarded as running from trough to trough, representing the rise and fall of a major historical phase of accumulation. A necessary result of this difference of measurement is that the lower turning point of the long cycle is regarded as taking place mid-way through a business cycle. This cycle, consisting of slump and post-slump recovery is, not surprisingly, a particularly complicated business cycle to interpret, and is treated in a special way in later discussion.

In a constructive (+) business cycle, the unemployment rate at the cyclical peak at the end of the cycle is lower than the unemployment rate at the peak at the beginning of the cycle. The implications of this are firstly that the cyclical upswing is more pronounced than the cyclical downswing, and secondly that some form of overall structural improvement is taking place in that expansion in expanding sectors is outweighing decline in declining sectors.

At full employment the possibilities for reducing unemployment through a complete business cycle are of course limited; the rates of unemployment at cyclical peaks thus fall within a very narrow range, between 1.0% in June 1955 to 1.3% in July 1961. The variability in these unemployment rates might reflect not so much the strength of cyclical forces but possibly such questions of labour supply as changes in the female participation rate, the presence or absence of compulsory military service, events in the educational sector, the level of migration, or natural demographic changes. It would therefore be unwise to read too much into the slight increase after 1956 in unemployment at cyclical peaks.

This type of business cycle, which starts at full employment

and ends at full employment, with no significant changes in the rate of unemployment from peak to peak, may be regarded as a neutral (=) business cycle, and is really a special case of the constructive business cycle. A change in the unemployment rate within the range of ½% to 1½% is not to be regarded as significant, but an increase of unemployment to 2.3% at the 1969 cyclical peak is regarded as being definitely significant, even if the economy may appear superficially to be at full employment. Closer examination of the business cycle involved (chapter 6 below) shows that there was a sharp recession in 1966-67, while the 1967-69 recovery was very weak.

In a degenerative (-) business cycle, unemployment increases across the cycle. There may be difficulties in using a peak to peak measurement in determining a degenerative business cycle in that governments generally attempt to keep unemployment low following a severe recession, often, as in 1972-73, operating a sharp reflation to achieve this objective. Given the severity of recession, one would not expect the Government to be able to push the unemployment rate at the end of the cycle significantly below the unemployment rate at the beginning of the cycle, but it is quite possible that the unemployment rates at the beginning and end of the cycle will be closely comparable. This degree of comparability is due however to a reactive element in Government policy rather than to the operation of long-term economic trends. It is quite likely that if the structure of the economy is deteriorating a recession in one cycle will be sharper than the recession of the previous cycle. This gives an alternative method of measurement.

If in a situation of less than full employment (more than 1½% unemployment at cyclical peaks) the unemployment rate at one cyclical peak is not substantially different from the unemployment rate at a previous cyclical peak, the cycle is termed degenerative (-) if the unemployment rate at one cyclical trough is substantially higher than at the previous cyclical trough, neutral (=) if there is no substantial difference in unemployment rates between two troughs and constructive (+) if the unemployment rate at a cyclical trough is substantially lower than at the previous cyclical trough.

It is possible using such methods to provide classifications of sequences of business cycles, both conceptually and, if suitable unemployment data exist, empirically. Unemployment rates provide the best indicators of whether a business cycle is constructive or degenerative since they are very sensitive to shifts in the growth rate above or below the long-term average rate of growth; in the absence of such figures one could probably use various production series, but the results would need to be treated with caution.

Various possible sequences of business cycle may be generated.

The suggested sequence of business cycles in a long cycle is roughly as follows:

(a) ···-- (+++ +/= +/= [?] - - - [?])+++··· (The long cycle)

The sequence in curly brackets represents a complete long cycle, while the segments in square brackets indicate what for the present may be regarded as unclear parts of the sequence.

This long cycle is the suggested sequence of business cycles in the modern industrial economy. Empirical examination, later in this section and in section 2.5, suggests that the downswing of the cycle is only half as long as the upswing, but is twice as intense.

Other sequences of cycles also need to be considered. It may be stated at the outset that a permanent sequence either of constructive or of degenerative business cycles is impossible under the definitions given above, although under a different set of definitions countries, such as the USA in the 19th century, with prolonged periods of heavy net immigration may be regarded as having an especially prolonged sequence of constructive cycles since the rate of growth is likely consistently to outrun the "average"[57] rate of growth calculated on the basis of productivity trends and the *natural* rate of increase of population. For simplicity, such cases are not examined here.

The main alternative sequence to that suggested by the long cycle is the equilibrium sequence, in which after a series of cycles of a particular tendency, an indefinite sequence of neutral cycles results. The general case is given in series (b) below; more specific cases are given in series (c) (timeless equilibrium), series (d) (permanent long boom) and series (e) (stagnation). Mainstream economic theory tends to concentrate on these sequences rather than on sequences, such as series (a), which demonstrate an alternation between long phases of expansion and long phases of contraction.[58]

(b)	·····	[?]	===== ·····	equilibrium; the general case
(c)	·····	====	===== ·····	timeless equilibrium
(d)	·····	++++	===== ·····	permanent long boom
(e)	·····	----	===== ·····	stagnation

The timeless equilibrium of sequence (c) is perhaps best left to the ahistorical theorising of neo-classical economics; the assumption that economic growth was perfectly smooth in the past, is perfectly smooth now, and will be perfectly smooth for evermore is highly

unrealistic. Sequences (d) and (e) are of more interest.

Sequence (d) corresponds to how Keynesian conventional wisdom of the 1960s [59] would have extrapolated the post-war boom. The normal argument followed is that while there was heavy unemployment before Keynesian economic policies were followed, the adoption of Keynesian policies created full employment while the continued use of Keynesian policies would guarantee the continuance of full employment. So long as Keynesian policies are followed, the economy allegedly remains at full employment.

Such an argument is based on an extrapolation of the prevailing trends of the 1950s and early 1960s. The problem is that unemployment started to rise substantially in the late 1960s, so that the long boom was not permanent, as the optimistic commentaries of the time suggested, but rather temporary, and followed by a series of degenerative business cycles. The series of signs shown in sequence (d) may be witnessed in the economic growth record, but merely as a sub-sequence of series (a).

If sequence (d) can be regarded as an over-extrapolation of the long cycle upswing, sequence (e), showing stagnation, may be regarded as an over-extrapolation of the downswing. In either case, the possibility of a critical *reversal* of structural trends is left out of consideration.

The case of stagnation should not be dismissed too lightly however. In a stagnant economy, output is not static (which would imply degenerative rather than neutral business cycles) but instead grows at a rate fast enough merely to keep a high rate of unemployment steady. In many respects, as a comparison of sequences (d) and (e) shows, stagnation is like the long boom without full employment, a situation which is satisfactory for capital accumulation but not for unemployed labour. Furthermore, in that the presence of mass unemployment weakens the bargaining power of organised labour, stagnation of the type shown in sequence (e) is in many respects even more favourable for capital than the long boom at full employment. Kalecki (1943) recognised at an early stage that after a period of heavy recession there was a strong possibility that capital would resist a programme of economic recovery since such a programme would weaken the political and work-place power of capital, while the course of economic policy after 1982 suggests that governments themselves could resist such a programme, in order to preserve the advantages for capital of an economy with steady growth and high unemployment.

Other, non-equilibrium, sequences of business cycles may be suggested. The sequence may for example be random (series (f)) with the events of one business cycle having no directed effect on the events of the subsequent business cycle. It is suggested however that the set of

forces which make one business cycle negative in sign rather than positive are still likely to be present in a subsequent business cycle, creating some form of serial correlation. A truly random sequence is unlikely, but it might happen that through chance events a positive business cycle might for example tend to be sandwiched in a sequence of negative business cycles.

Sequence (g), showing an extreme *negative* serial correlation of business cycles might at first be thought to be merely a curiosity, but such a sequence predominates in the time series of the late 19th century. The interpretation of such a sequence depends on whether the business cycles are mild or strong. If the business cycles are mild, such a sequence would suggest that there is overcompensation in any business cycle for the events of the previous business cycle. If however the business cycle is both strong and long, the alternation of constructive and degenerative cycles implies a form of long cyclical phasing of periods of strong growth and periods of weak growth. This is the American, or Kuznets long cycle of 20 years, which emerges very strongly in the time series for growth in the USA and the "white periphery" (Canada, Australia, Argentina etc.) in the pre-1914 decades, and which affected the course of development of the UK economy in the same period. There is little evidence for the presence of such a cycle under current conditions.[60]

(f) (example) •••• + − − + = − + = + + − ••••• (random sequence)

(g) ••••• + − + − + − + − •••••• (cyclical overcompensation if cycles are weak; Kuznets cycle if cycles are strong).

The classification of series of business cycles has been made in a way which allows for empirical testing. Table 2.3 uses unemployment rates in the UK since the 1880s to demonstrate the sequences of cycles which result. The cycles of 1929-37 and 1979 to date have been separated into slump and post-slump periods.

The cycles from 1932 to date closely follow sequence (a) with a series of constructive cycles followed by a series of neutral cycles, followed by a series of degenerative cycles. The sequence of cycles between 1920 and 1932 would theoretically be expected to be predominantly degenerative in character. There appears to be a weak constructive cycle however between 1924 and 1927, although it is possible that this chiefly reflects the atypical severity of the post-war recession of the early 1920s (chapter 4 below) which itself would have led to a strong post-recessionary rebound as conditions normalised.

There is a problem in the treatment of a business cycle containing a slump. The method which would be used for any other business cycle, pairing a recession with its subsequent recovery, is not fully satisfactory in that it pairs what is the culmination of a long series of degenerative cycles with the first stage in a long series of constructive cycles. In deriving a series such as (a) above, the slump is divided into early slump, with extremely rapid job loss and rising unemployment, and late slump with fairly stable levels of employment and unemployment. The slump is then treated as a complete business cycle, with the early slump as the downswing and the late slump as the upswing. Such a business cycle is, of course, highly degenerative. When considering the post-slump recovery, the *late slump*, rather than the slump as a whole, is considered as the recession against which recovery proceeds. This gives the post-slump recovery cycle a strong positive sign.

The slump-recovery cycle is thus regarded as basically a three phase cycle rather than a two phase (downswing-upswing) cycle. In the first phase (early slump) a sharp downturn in economic conditions precipitates job loss in vulnerable sectors on an extremely large scale. This creates, in more vulnerable economies, mass unemployment, but also removes several obstacles towards renewed accumulation, for example the weighting of industrial structure towards declining industries. The second stage of the cycle, late slump, has a dual character. In terms of such indicators as length, economic growth, employment change, and percentage point change in unemployment it resembles nothing so much as the recessionary phase of a business cycle at full employment. In comparison with what has gone before, however, it marks a form of recovery, severely choked by the weakness of aggregate demand during the early slump. The major job losses would already have taken place, leaving a sounder sectoral composition of the economy, but the economic growth which is taking place is not sufficient to reduce unemployment.

While the late slump is, with respect to the early slump, a phase of relative expansion, the overall tendency of late slump is still recessionary. When recession gives way to recovery, such a recovery is potentially, but not necessarily sharp. This recovery phase sets the long cycle upswing in motion, but much of the strength of the long cycle upswing in a particular economy depends on the strength of the post-slump recovery, and in particular on whether an economy is responding dynamically to the opportunities presented by the removal of constraints on growth.

2.5 The Record of Economic Growth in Major Capitalist Economies

(i) The Use of National Income Statistics

Table 2.1 presents series for economic growth in the U.K., France, Germany and the U.S.A. Each series is based primarily on the national accounts totals presented in Mitchell (1975, 1983). These series, however, are incomplete for France and Germany, and are supplemented (bracketed figures) by the estimates of gross domestic product (GDP) presented in Maddison (1982). Figures for the period after the termination of Mitchell's time series (1968-1969 in the European countries, 1974-1975 in the U.S.A.) are based primarily on the United Nations *"Yearbook of National Accounts Statistics"*.

Statistics for GDP or GNP (gross national product) are essential materials for any deep analysis of macro-dynamics, and yet it needs to be emphasised strongly that these statistics need to be treated with caution. Most importantly, GNP or GDP cannot be directly measured; instead the figures have to be compiled by detailed calculation from other measurable variables. Inevitably the figure which is finally produced is to some extent an index number rather than a measurement, especially when the time series is deflated by the values of a price index to indicate levels of national product at constant prices.

There is no need here to engage in detailed technical discussion on the problems of measuring GNP or GDP (see, however, Feinstein 1972),[61] but certain salient points need to be noted, with respect to the use of statistics in the discussion below.

Most critically, the centre of attention in the current study is not on the *level* of national income, but rather the year to year *variations* in national income. It might well be the case that a time series which is the best available series as far as levels of income are concerned is unsuitable for measuring the size of fluctuations of income, while any series which faithfully reflects the amplitude of economic fluctuations may, over a period of time, distort the measurements of the long-term changes in the level of income. The need to use a price series to measure "real" income (money income adjusted for changes in prices) can quite often cause conflicts between short-term accuracy and long-term accuracy, while the problems of constructing national accounts for historical periods on the basis of incomplete information are frequently severe. If for example an interpolation of data is required for a particular period in which information is lacking, a properly cautious statistician would tend to produce a series in which cyclical

variations which actually took place are statistically dampened rather than magnified. This would happen if the person compiling the statistics is likely to be suspicious of figures which depart too far from the long-term trend. An unbiased estimate for levels of income will thus tend to understimate cyclical fluctuations, creating various problems in interpretation.[62]

The fact that national accounts can be presented in several different ways adds extra complications. The standard current convention, as used in United Nations Statistcs, is to use gross domestic product figures, which exclude net income from abroad, rather than to use figures for gross national product, which include net income from abroad. The historical figures used by Mitchell (1975, 1983) tend to use gross national product figures, however, and in some cases figures for net national product, which exclude expenditure on the maintenance and depreciation of capital stocks.

Differences between rates of change in GDP and rates of change in GNP are generally not large, although the growth of UK property income from abroad before 1914 was sufficiently large to create occasional discrepancies between the two series. Between 1870 and 1913, GDP grew by an average of 1.8% per annum, net property income from abroad by 4.9% per annum and GNP by 1.9% per annum. Net property income from abroad increased in this period from 2.0% of GNP to 6.9% of GNP (compared with 1.5% in 1965). Trend differences between GDP and GNP are thus not large, despite the increased economic significance of property income from abroad, but short-term differences often emerge. Table 2.4 shows that between 1870 and 1913, only once did GDP and GNP annual rates of growth vary by more than half a percentage point, indicating that either method of account is capable of identifying the predominant cyclical variations. One point which needs to be emphasised however is that the 1883-1886 slump came at a time when property income from abroad was rapidly increasing as a result of high levels of recent foreign investment, so that national accounts on a GNP basis for this slump as reproduced in Table 2.1 consistently *understate* the severity of slump when compared with GDP figures. In this three year period, GNP increased by 0.3%, and while this represented a fall in per capita GNP of 2.7% (assuming a population growth rate of 1% per annum), the figures presented give the picture of a recession of rather less than slump intensity, especially when compared with 1929-1932 or 1979-1982. If however net property income from abroad is omitted from the calculations, a fall in GDP of 1.0% is registered between 1883 and 1886, corresponding to a decline of 3.9% in per capita income. This indicates a *domestic*

recession somewhat more severe than in the late 1870s, when income from abroad was increasing relatively slowly. The decline in per capita domestically generated income in the U.K. between 1883 and 1886 was less than between 1929 and 1932, or between 1979 and 1981, or even than in the period between 1839 and 1842 (Table 2.1). Growth rates in the downswing prior to the slump were, however, more depressed in the 1870s than in corresponding periods in the 1830s, 1920s or 1970s.

There is no standard convention as to whether national accounts should be calculated on an expenditure basis or on a production basis. Currently the UK and the USA adopt the former approach, while France and West Germany use the latter approach.[63] Again, either method will produce broadly similar results, but the differences in detail may be found to be important. Table 2.5 shows annual changes in total product according to five different methods of measurement between 1920 and 1938. If attention is concentrated on the period between 1929 and 1938, it may be seen that while expenditure data and output data show similar medium-term and long-term trends, the cyclical profiles of GDP on an output and on an expenditure basis differed considerably, with the output series leading and the expenditure series lagging. The figures for GDP change on an output basis show a strong and smooth recovery between 1932 and 1937, with the annual growth rate varying between 3.8% and 5.4%, followed by a recession in 1937-38. In contrast, figures calculated on an expenditure basis suggest that the recovery did not start until 1933-34, but showed great strength in that year, with an increase in GDP of 6.9%. After that, these figures suggest that growth slowed down, averaging 3½% per annum, and that the recession in 1937-38 was non-existent. Such divergences suggest firstly the need for some form of compromise estimate and secondly the need for caution in interpreting any single time series of economic growth. Each series in Table 2.6 suggests that the economic recovery of the 1930s was powerful and sustained; there is, however, considerable scope for disagreement on the precise form of the recovery, with different statistical sources suggesting different interpretations.

It follows that the time series shown in Table 2.1 may be taken as a useful guide to what was happening in the economy at certain times, but should not be accepted uncritically. The historical series, prior to 1970, are taken from Mitchell (1975, 1983) rather than from Maddison (1982), since it seems likely that Maddison in order to present as accurate a series as possible for long run growth might well have over-smoothed the business cyclical variations; the cyclical variations to be calculated from Maddison are much less sharply delineated than those to be calculated from Mitchell, who used a variety of national

sources. For wartime periods and immediate post-war periods, however, Maddison's figures are used, being the only ones readily available. The large scale changes in price structure associated with war and immediate post-war periods unfortunately often make the calculated growth rates highly unreliable when a price deflator based on an "average" peace-time structure of demand is used. For example, Table 2.1 suggests that the U.K. economy was in an extremely deep post-war depression as early as 1919, but gives no indication of the post-war boom which was undoubtedly present.[64] It would appear that the output series at current prices has been considerably over-deflated in the statement of national income at constant prices. In chapter 4 below, (Table 4.3) output in the period is calculated using an alternative set of price deflators, to show economic growth taking place up to 1920, but with an exceptionally severe recession taking place in 1920 and 1921. This picture is consistent with unemployment trends.

There is clearly a lot of work which still needs to be done in order to produce sets of historical national accounts statistics which accurately reflect short-term variations in production; the problem is particularly acute before the mid-1920s.

The discussion now switches to the assessed record of economic growth in named economies. It is argued that long cycles since 1914 have generally been internationally well synchronised, but that long cycles before 1914 tended to be poorly synchronised. The poor synchronisation of pre-1914 cycles will be examined more closely in section 2.6 below. In the 20th century, all major economies, including several not listed in Table 2.1, underwent a slump between 1929 and 1932, and then, with the exception of France, all underwent a powerful economic recovery through the rest of the 1930s.[65] When the economic shocks generated by the Second World War had passed through the system, the capitalist economies all grew extremely rapidly from the 1950s to the mid-1960s under conditions of full employment and fast productivity growth. In the mid to late 1960s this growth started to falter, and the advanced capitalist economies went into a phase of increasing unemployment and increasing inflation. Growth rates were low by the standards of the "long boom", but still high by earlier standards. The pronounced inflationary tendency which accelerated during the late 1960s and 1970s suggested, however, a fundamental instability in the economic system. The recession of 1973-75 was exceptionally severe by post-war standards, this being partly but not wholly explicable by a growing unity of purpose among oil producers forcing through a near quadrupling of oil prices in late 1973,[66] while the recession of 1979-82 was even more severe, especially in the U.K. This final recession may definitely

be regarded as a slump, even though most of the advanced industrial economies avoided the mass unemployment characteristic of the 1930s slump either through having a very competitive industrial base (e.g. Japan) or through the expulsion of migrant workers (e.g. West Germany).[67] Very few countries escaped having high rates of unemployment by post-war standards, however (Table 2.6).

This synchronisation of long cycles in the 20th century, with slumps in the early 1930s and early 1980s, is not noticeable in the 19th century. Taking the 1873-1896 period for example, a span of years often regarded as representing a long cycle downswing,[68] there seems to be a considerable contrast between the UK, with a slump in 1883-86 and then relatively high growth rates for over a decade, and Germany, with a severe slump between 1879 and 1882, and then exceptionally rapid growth during the rest of the decade, *even when the UK economy was in the middle of a slump*. Meanwhile, the USA economy did not follow European patterns at all, and indeed doubled national income between 1877 and 1883 at a time of European recession. All this would appear to suggest that the 50 year long cycle is a distictively 20th century phenomenon, and that the 19th century long cycles identified by Kondratieff were in fact much weaker than 20th century long cycles if they existed at all. This argument is examined in section 2.5 below and found wanting. It is suggested there that the 50 year long cycle of the late 19th century was particularly weak because of the emergence of the USA economy and to a lesser extent of the "white periphery" as a major counterbalance to European economic dominance, and to the dominance of European economic rhythms. The long waves characteristic of these "new" economies had a wavelength of about 20 to 25 years,[69] and the upswing of each of these waves diverted considerable quantities of capital and labour from the European economies, setting up an "interference pattern" in Europe as the 20 year Kuznets cycle and 50 year Kondratieff cycle simultaneously operated. In the 20th century, growth patterns in the USA became synchronised with those of Europe, leaving the 50 year long cycle dominant, while before about the 1860s the peripheral economies were not large enough to have a major effect on European growth paths. In section 2.6 below, it is strongly argued that long cycle profiles can clearly be detected in the UK growth record before 1860, with a downswing in the late 1820s and 1830s, a slump in the early 1840s, a strong post-slump recovery in the mid-1840s, and a long cycle upswing thereafter. The 50 year long cycle is thus not merely a 20th century phenomenon, but the 20th century is the best historical laboratory to test ideas of the long cycle, partly because of the greater

degree of internationalisation of industrialism than in the early 19th century, and partly because of vast improvements in data quality.

(ii) The question of wars

There is, however, a major problem in that the record of the 20th century has been blotted by two world wars. If economic normalisation after a world war takes about six years to complete (up to, say, 1924 and 1951) then the economic record of the period between 1914 and 1951 may be regarded as being "war influenced" for approximately 60% of the time. This is a significant complicating factor in any long cycle analysis; one needs to assess both what effects war had on the course of development of the economy in the immediate post-war years, and also what the course of economic development might have been if war had not taken place.

Three wars had major implications for the course of world economic development in the period covered in Table 2.1; the American Civil War, the First World War and the Second World War. The two world wars clearly had exceptionally far-reaching implications for economic change, which will be discussed in more detail shortly. The emphasis will not be on the direct economic effects of war,[70] but rather on the extent to which the passage of war caused, or failed to cause, radical switches of patterns of economic growth when pre-war and post-war periods are compared.

Before the analysis of 20th century wars is presented, a brief note needs to be made of the economic effects of the American Civil War (1861-1865). Clearly, this had a major depressive effect on the USA economy, with GNP down 11.3% (-2.4% per annum). European economies were also affected, as both markets and sources of raw materials (notably cotton) were removed from the international economic system. The UK's trade with the USA halved during these years[71] and the Lancashire cotton industry underwent a severe crisis.[72] GNP in the UK rose by only 1.1% per annum between 1861 and 1866, the worst five year performance of the long cycle upswing.

After the American Civil War, the world economy expanded rapidly, representing a rebound from an artificial, war induced recession. The statistics of growth in Table 2.1 suggest a half-decade of extremely rapid growth in the USA (c. 1865-1870), with this American led post-war recovery diffusing to the European economies after about 1868. The post-war recovery in the USA did not simply consist of a mere resumption of production in war-stricken areas, but also involved an acceleration of

industrial development in the North-Eastern states, and a definite switch in the locus of economic advantage.[73] There was a pronounced world boom between 1867 and 1871; whether the extent of this boom was substantially affected by the aftermath of the war remains, for the moment, a matter of speculation.[74]

Three main types of 20th century war-time economic experience may be noted from the two world wars, according to whether

(a) The country was far removed from the active theatre of war (e.g. the U.S.A., Australia)

(b) The country was close to the active theatre of war, and an active participant but neither occupied, nor engaged in land battles on its own territory (e.g. the U.K.).

(c) The country was occupied.

Cases (a) through (c) are successively less favourable for economic development in war-time. Indeed one could suggest that countries which experienced type (a) conditions actually benefited economically from each war. In the USA, for example, GNP rose by 72.5% (11.5% per annum) between 1939 and 1944, an economic performance which helped shift still further the balance of world economic power from Europe to North America. Other advanced peripheral economies such as Canada, Australia and New Zealand also showed major economic expansion during the Second World War, even though they supplied manpower to the war effort, as did the USA.

The gains for the USA in the First World War were to be found more in relative terms than in absolute terms, in that while economic growth did not accelerate, the USA was able to capture industrial markets at the expense of European producers and was thus able to move into a highly favourable competitive position for the economic developments of the 1920s. The position of agriculture was more complicated. Lewis (1949 pp.110-111) notes that between 1914 and 1918 European agriculture contracted while American agriculture expanded, and that when European agriculture was restored after the war, American agriculture did not contract (except in terms of numbers employed) but continued to expand, leading to potentially severe overproduction. This, when combined with the effects of falling demand in the slump, led to the American agricultural depression of the early 1930s being exceptionally severe.[75]

In the UK the economic profile has been broadly similar for each World War, with a rapid expansion of production in the early stages, as the economy geared itself to the war effort, and fairly steady levels of output during the rest of the war period. A growth rate of 9.6% per annum between 1939 and 1941 allowed the unemployment which had built up during the 1920s and 1930s to be virtually eliminated by late 1941

(Table A7). In the early post-war years production fell, but this was merely a brief transitional phase after 1945, even though the disjointed nature of the return to civilian production had led to a "pseudo-slump" in 1921 (chapter 4 below). After these transitional periods the general performance of the economy was in accordance with position on the long cycle, with there being a downswing through the 1920s and an upswing through the late 1940s and 1950s.

European war generally resulted in rapidly falling economic production in Continental countries, especially in those in which land battles had been fought, or those which had been invaded by a foreign power. The German economy in the Second World War expanded rapidly in the early years, even after the expansion of territory had been taken into account, but slowed down as the tide of war turned. In the immediate post-war period, production increased rapidly,from a very low base, in those countries which were liberated but fell sharply in the defeated countries; the contrast between France and Germany in 1945-46 is strongly marked in Table 2.1.

The question of longer-term post-war transitions is complicated. Certainly the transition from war-time production to peace-time production was smoother after the Second World War than after the First. The phases of booms, slumps and hyperinflations which marked the early 1920s were absent in the late 1940s. The crisis after the First World War was particularly marked in Germany,[76] which suffered both from the direct economic effects of military defeat, and from the burden of reparation demands which were set beyond Germany's ability to pay through an expansion of production, a system of reparations criticised by Keynes at the time.[77] If such reparations cannot be paid out of sustainable growth, and they need to be paid, then *unsustainable* growth is required, an artificial boom. In such a boom, prices rise to a far greater extent than production, and the German experience showed this in particularly strong form; the cost of living rose by 37% in 1918-19, then in subsequent years by 145%, 32%, 1023% and, in 1922-23, by a billionfold.[78] Examination of contemporary statistics[79] indicates that virtually the whole of Central Europe suffered from this hyperinflation to some extent.

Inflation in the 1920s was not, however, merely a Central European phenomenon, and in other countries, such as the UK, the transitional period from war to peace required major reorientations of production, which in turn led to rising prices; inflation averaged 11% in the UK between 1919 and 1920,[80] for example, before the inflationary boom broke in 1920. The aftermath of the Second World War was also highly inflationary in many countries, with prices rising by 53% per annum in

France and 60% per annum in Austria between 1945 and 1948. There was hyperinflation in Rumania, but prices were relatively stable in the UK and West Germany.[81] The immediate post-war disruptions to the economy were severe after the Second World War as well as after the First, yet once all the disturbances had passed, economies in the 1920s were consistently running at high levels of unemployment, while in the 1950s economies were running at full employment.

The "orthodox Keynesian" approach[82] would be to suggest that this contrast reflects a process of learning from the mistakes of the past, with policy makers after the Second World War following a more enlightened policy than the pursuit of economic revenge which followed the First World War; the Marshall Plan to aid Europe [83] could be seen as part of this far-sightedness. While there is little doubt that the economic policies followed after the Second World War were indeed an improvement on those of a generation earlier, it is open to question whether this is a sufficient factor to explain why economies were running smoothly after about 1951, but not after about 1924. Longer term factors need to be invoked, and indeed are regarded here as crucial.

The First World War broke out at a late stage of a long cycle upswing, with the implication that a particular phase of accumulation, based largely on the territorial expansion of the capitalist system, was reaching its apex. The political situation at this stage was so tense that a single assassination could trigger off a four year Europe-wide war; it would seem that the political and economic evolutions of the "imperialist" phase of development were approaching crisis point simultaneously. The crisis in the political sphere was precipitated prior to any crisis in the economic sphere.

The counter-historical question of what might have happened to the economy if there had been no 1914-18 war is difficult to answer satisfactorily, given the assumptions which would be needed to "unmake" the war. The likelihood is, however, that the white periphery could have continued to expand for a long period after 1914, with or without a European war, while the core economies of Europe, with a relatively restricted natural resource basis, were crisis-prone.

The situation at the outset of the Second World War presented a strong contrast. In this instance, war broke out following a period of post-slump political tension, at an early stage of the long cycle upswing. By this time, the development of important sectors in the electrical, vehicles and chemical industries was proceeding rapidly, but with the potential for further large scale development based on technical improvements, both on the product and the process sides, and also, critically, on the opening up of substantial new consumer markets. The

growth of these sectors was considerable between 1932 and 1939 (section 2.7 below, chapter 4 below), and the interruption of the Second World War did not eliminate the long-term possibility of further economic developments in these sectors; on the contrary the intensification of applied scientific research during the Second World War may actually have enhanced the possibilities for development of new industries after the war.[84] The growth industries of the 1930s thus re-emerged as the growth industries of the late 1940s and 1950s, industries which were powerful enough to leave the advanced capitalist economies, in Europe at least, in a state of buoyant full employment for over a decade.

It is suggested that the expansionary trends of the post-war years were the logical successors of the expansionary trends of the late pre-war years of the mid-1930s. One can restate the same relationship with a different emphasis and suggest that the economic expansion of the 1930s was the logical predecessor to a prolonged period of economic expansion, and also of full employment. In such an interpretation, while the main *political* and *social* watersheds of the mid-20th century were to be found in the Second World War, the main *economic* watershed was at a much earlier date, at the trough of the 1929-33 slump. The distinction between the pre-slump and post-slump economy is regarded as being a deeper distinction than that between the pre-war and post-war economy. This interpretation suggests that the maintenance of full employment in the post-war long boom was not primarily the result of a *post-war* restructuring of the economy, whether in terms of Keynesian economic policy, or in terms of some deeper restructuring of capital, as argued by Mandel (1975, 1978, 1980), but rather resulted from the continuation of an *earlier*, interrupted, period of expansion.

It may at first seem paradoxical that full employment in the 1950s was the logical successor of high levels of unemployment in the 1930s, but the trend in unemployment was very strongly downwards from 1932 onwards, and by 1937 many industrialised countries were not far off from full employment. Table 2.7 shows unemployment rates in 1932, 1937 and 1951 in fifteen present OECD countries. It may readily be seen that in most countries, most of the reduction in unemployment between 1932 and 1951 took place in the 1932-37 period, and that the average rate of absorption of unemployment between 1937 and 1951 was generally considerably lower than between 1932 and 1937. It would seem that the situation of international full employment as it existed in the early 1950s, following War and post-war reconstruction, was not vastly different from what might have been expected in a hypothetical continuation of economic development from the late 1930s based on an average 3% growth rate

(compared with 5.2% in the 1932-37 upswing)[85] allowing for up to half a percentage point per annum on average to be removed from the unemployment rate. The projection of a 3% growth rate does not seem unrealistic, and indeed is possibly on the conservative side, in that rates of growth in both the post-slump recovery up to 1937 and the long boom after 1948 were generally higher than this. Even on a relatively conservative estimate of what might have happened in the absence of war, full employment would be expected to have been reached at some stage in the late 1940s; one does not need to invoke the effects of the war and post-war reconstruction to explain the continued tendency after the war for full employment to be maintained in the advanced capitalist economies. If indeed there is anything particularly unusual in 1951 unemployment figures to suggest a six year war between 1939 and 1945, it is not in the general tendency toward full employment in 1951 but rather that Germany and Italy, the defeated Fascist powers, showed higher unemployment rates in 1951 than in 1937.

A more direct line of evidence to show that full employment could have been reached in the absence of war lies in the economic performance of the economically most advanced non-combatant countries in Europe, Sweden and Switzerland (Table 2.8). Switzerland, when allowances are made for international comparability, never had a high rate of unemployment in the 1930s, so that Sweden, with a moderately high rate of unemployment during the slump, provides the more interesting time series. The record shows rapidly falling unemployment from 1932 to 1937, with a continued rapid fall of unemployment (after a rise in the 1937-1940 period) until about 1943, and then a gradual approach to a full employment position as the recovery phase of the long cycle upswing is replaced by the full employment phase.

(iii) The Post-war Boom and its Demise

Even though it came about in an unusual way, all the advanced capitalist countries were fixed by the early 1950s into a phase of full employment, arriving later in West Germany and Italy than elsewhere, and rapid growth, associated with rising rates of growth of productivity. In the advanced capitalist countries Maddison (1982 p.96) notes that GDP per man hour grew by 1.6% per annum (unweighted arithmetic average) between 1870 and 1913, by 1.8% between 1913 and 1950, and by 4.5% between 1950 and 1973, before slowing down to 2.7% between 1973 and 1979. This upsurge in productivity trends, discussed further in section 2.7 below, made the post-war long boom qualitatively different in many respects from earlier long cycle upswings.

The continuation of almost uninterrupted high growth and full employment for nearly two decades was a remarkable feature of the early post-war period, and one which should not be dismissed too lightly. Any projection of aggregate trends made in a period from, say, 1951 to 1966, would tend to suggest that this general prosperity should continue indefinitely, even though certain countries might have various steering problems (balance of payments problems, minor inflations, etc.); it would be very difficult to find an instance of a writer in such a period suggesting that full employment was not a permanent state of affairs, and even more difficult to find a suggestion that less than 20 years later the UK economy would be showing a level of unemployment considerably in excess of 3,000,000.

This suggests a sharp break in trend, probably dateable from the recession of the mid-1960s. Table 2.1 shows that growth was extremely strong in the late 1950s and early 1960s, but sharply decelerated in 1966 and 1967. In many respects the capitalist system was, in the late 1960s, a victim of its own earlier success in that expectations of growth based on the experiences of the early 1960s were fed into the economic processes of the late 1960s, without the growth actually being forthcoming to meet these expectations. As section 2.8 below emphasises, this created intensified conflict between wages and profits, and set an inflationary spiral moving. In the meantime, the deceleration of growth, as a result of declining possibilities of expansion in key industrial sectors, set unemployment rising; the "theoretically impossible" combination of rising inflation and rising unemployment was actually taking place in the late 1960s.

Even though unemployment was creeping up at this stage, growth rates in the advanced capitalist economies were still relatively high. Growth rates were below those of the early 1960s, however, and Western governments became increasingly prepared to reflate sharply in order to correct for this. The boom of 1972-73 was, in the UK especially and also in many other countries, a response to the slow growth of previous years. Primary production (raw materials, foodstuffs, etc.) could not keep pace with demand, and this led to an explosion in commodity prices.[86] The increased international competition over physical commodities combined with increased domestic competition over wages and profits to provide a substantial inflationary spiral. The oil price rises of 1973 represented a special, but industrially the most important, case of a commodity boom.

In many accounts[87] the post-war long boom is considered to have ended with the oil price rises of 1973, and the subsequent severe recession, variously described as the "second great crash" (Cairncross and McRae, 1975) or the "second slump" (Mandel 1978).[88] The immediate

effect of the oil crisis of the West would be to increase industrial costs sharply, which would tend to result in some combination of inflation and reduced profits. The indirect effect would be to transfer financial resources from the industrialised countries, where they are readily circulated, in the forms both of expenditure and of investment, to the oil producing countries, where they have tended to remain idle; Mandel (1978 pp.34-35) argues however that the depressive effects of petro-dollar hoarding has been much exaggerated.

The major depression between 1973 and 1976, while clearly influenced by the oil price rises of 1973, had much deeper roots, however, and also was followed by another major depression starting in late 1979 in the UK and a year later in the other main advanced capitalist economies. If the events of the 1950s and early 1960s may be regarded as a long boom, then the events of the late 1960s, 1970s and early 1980s may be regarded as a "long recession." The question of whether the long recession had ended by 1983 or thereabouts must still be regarded as controversial; the author's own viewpoint is that it had, and that the main capitalist economies had entered on to a path of steady, moderately high rates of growth, capable of being maintained over a prolonged period.

2.6 19th Century Long Cycles

(i) The Basic Form of the Long Cycle

Whatever the complications in detail, the basic form of the 20th century long cycle may be summarised in terms of a logical succession of business cycles of different types. Fig. 2.1 illustrates the basic pattern. Following a slump there is a period of rapid economic growth which reduces unemployment and eventually leads back to full employment. This recovery phase (I) is followed by a long full employment phase (II) with output growing in line with output per head, thus maintaining full employment. It is quite possible, and indeed characteristic of the post-war long boom, that the rate of growth of output per head (productivity) will tend to increase through the long cycle upswing, as a result of high levels of investment and accelerated technical progress. In a healthy economy, high growth rates of productivity will be reflected in output and demand changes, so that aggregate employment is not reduced, but in a less healthy economy, output trends fall behind productivity trends, giving the *appearance* that productivity increases are reducing employment levels,[89] even though it is in reality the sluggish rate of growth of output that is causing unemployment.

When a phase of upswing burns itself out, a phase of downswing (III) is entered, with a tendency toward there being successively more severe cyclical downswings until a slump (IV) is reached, which reduces surplus capacity to such an extent that renewed accumulation may then proceed. The length of the downswing is perhaps half the length of the upswing, representing about 16 years (1914/1918-1932; 1966-1982) of a fifty year long cycle. Phases I (early upswing, less than full employment) and II (late upswing, full employment) would probably be expected to last about the same length of time, although the onset of the Second World War removed the vital stages of this transition from the economic record (section 2.5 above). There is a suggestion that one might expect full employment after a slump to be reached spontaneously around 1949 and 2000, although the absence of a falling unemployment trend in the UK in the mid-1980s would suggest a rather later return to full employment, if indeed full employment is reached at all, which seems highly uncertain.

Post-1918 experience fits this model fairly well, being the experience on which the model is based. Within the advanced capitalist countries there may be considerable variation in the intensity of the phases, the recent downswing and slump being more strongly marked in the UK than in Japan, for example, but generally the phases themselves may

be detected. The next question is that of whether the long cycle may be detected so clearly prior to 1914.

(ii) 1870-1914

The "traditional" timing for the various phases of the long cycle phases prior to 1914 are for an upswing to be noted from the mid-1840s to 1873, followed by a downswing from 1873 to 1896, followed by a renewed upswing from 1896 to 1913.[90] Output series, using 3- and 9- year moving averages, presented in Glismann, Rodemer and Wolter (1984 pp.143-145) appear to support this basic timing, particularly for the UK, but a closer examination of the available statistics is required. In particular, it is regarded as a significant anomaly that the upswing and downswing should be of equal length in the late 19th century while the upswing should be twice as long as the downswing in the 20th century. This would appear to warrant a reappraisal of the timing of the turning points of the long cycle, at the very least.

Table 2.1 shows clearly a sudden and sharp check in the growth rate of both Germany and the USA for 1873, or 1874. The downturn was especially severe in Germany. The check to growth in the UK, following a boom period between 1867 and 1871, is highly noticeable. While there is some apparent international variability in the timing of the start of the period of recessions, the year 1873 would appear to represent a reasonable compromise estimate.

One should not exaggerate the difference in the UK economy between the late upswing and the downswing. Apart from a participation in the economic boom of the turn of the 1870s, UK economic performance had been patchy for a considerable period. GDP grew at an average rate of 1.6% per annum between 1857 and 1867, a growth rate scarcely distinguishable from that of the post-1873 downswing (Table 2.9) and considerably lower than the 3.0% averaged in the first part of the upswing, between 1843 and 1857. The early part of the post-1843 upswing was strongly marked because of the railway boom and its after-effects (discussed further below), while the later part of the upswing was more muted, in part because the railway boom had run its course, and in part because of the depressive effects of the "cotton famine" during the American Civil War. The fact that the distinction between upswing and downswing was not especially strong in the UK does not of course mean that it should not be made.

The main reason why 1873 is generally taken to be the upper turning point of the long cycle is that from 1873 onwards prices were falling, a fall which continued until 1896, after which point prices

began to rise again (Table 2.10). As with output series, however, there is a certain degree of latitude as to the precise date at which prices started to fall, whether, for example, it was 1870 in the USA or 1874 in Germany. A fall in the general price level under 19th century conditions may be taken to indicate a weakness in the economy, in that falling prices suggest difficulties in the realisation of existing or desired production on the market at existing prices.

The European downswing, then, can be dated from the early 1870s, both in the output series and in the price series. The timing of the subsequent upswing is the next problem. Prices continued to fall until the mid-1890s and then started to rise until the First World War; it was this break in price trend which caused Kondratieff to locate the turning point in the long cycle in the mid-1890s, a practice which has generally been followed since.[91] The problem is that, as Table 2.1 shows, there was a decade of sustained economic growth prior to the conventionally given date of the upswing in both the UK and in Germany, and to a lesser extent in France. In the UK, for example, the GNP growth rate averaged 2.4% between 1886 and 1896, with further substantial growth taking place up to 1899, while in Germany the NNP growth rate averaged 3.6% between 1882 and 1896. The UK growth rate does not sound outstandingly high at first, although it was definitely above the long term growth rate of the UK economy, despite a severe banking crisis in the early 1890s. For comparison the average growth rate between 1857 and 1886 was 2.0%.

These generally high growth rates, particularly in Germany, suggest that the long cycle upswing was already well under way by the mid-1890s. The identification of a lower turning point of the long cycle involves the identification of a slump, following a prolonged period of slow growth, and the identification of a period of relatively sustained growth following the slump. The slump in Germany can be identified as taking place between 1878 and 1882, with a particularly severe "early slump" between 1878 and 1880, followed by a period of "late slump", with moderate economic growth, between 1880 and 1882 (Table 2.1). The dividing line between an exceptionally severe downswing and a powerful upswing is strongly marked in Germany, even though the length of the downswing (8 years from 1874 to 1882) may be regarded as rather short.

In the UK, there were four main recessions between 1871 and 1893. The 1871-73 recession could be described as moderately severe, with GDP falling by 1.2% in two years. Given a long term average growth rate of 2% per annum, this suggests that GDP in 1873 was about 5% lower than it would have been in the absence of recession. This would at first appear to indicate a severe recession, but it needs to be remembered that there

was a substantial boom in the economy from 1867 to 1871, with growth averaging almost 5% per annum. In the context of this, the strength of recession of 1871-73 may be regarded as a corrective for overheating in the boom, bringing back the economy closer to its long term growth rate.

After this recession, there was substantial economic growth in 1873-74, but in subsequent years growth was very slow, averaging 1.0% per annum between 1874 and 1878. Given a rapidly increasing population, this rate of growth implied that per capita national income was static. Such an economic "recovery" is hardly to be distinguished from a depression, and indeed trade union figures for unemployment (Table A.9) show unemployment increasing from 0.9% in 1872 to 3.7% by 1876 and 6.8% by 1878.[92] There can be little doubt that depressive characteristics were predominant in this period, and that the economy was in a pronounced downswing; one can speak of a "great depression" in the 1870s, while remaining sceptical about whether it lasted through to the 1890s as some economic historians have suggested.[93]

In 1878-79, there was a sharp economic downturn, with GDP falling by 2.1%, and the trade union unemployment rate increasing from 6.8% to 11.4%. This was merely the most intense phase of a recession starting at some previous date, but such was the weakness of the previous cyclical upswing that it is difficult to state with confidence when the cyclical upswing finished and when the recession started.

In 1879-80 there was substantial economic growth, with GDP increasing by 7.9%. A high rate of economic growth immediately after a sharp recession is normal, and compensates for cyclical "over-depression" of the economy. Other prominent instances of this in the UK economic record may be found in 1843-44, 1873-74, 1886-87, 1893-94 and 1933-34 (Table 2.1). In assessing the nature of the recovery as a whole, the important question is not so much what happens in the first year of recovery, but whether the recovery is sustained over a period of years. In post-slump phases, as in 1843-1846 and 1933-37, there is a very strong element of sustained economic growth, an element of strong growth which also occurs if a deep recession happens to take place in a long cycle upswing, as for example in 1893-99, and also, to a lesser extent, 1908-13. In a long cycle downswing, in strong contrast, the post-depression spurt of growth is very short-lived, and indeed may be, as in 1880-81, followed by a secondary recession. The cyclical upswings following both the 1873 and the 1879 depressions show a common form with extremely fast growth in the first year, but slow growth in subsequent years. It follows that if a slump is historically defined in terms of the strength of the post-slump recovery as well as in terms of the intensity of recession, the recession of the late 1870s was not a slump.

The recession of the mid-1880s (1883-1886) was perhaps slightly more severe than the recession of the late 1870s; a Royal Commission on the Depression which reported in 1886 (Great Britain 1886) conducted extensive surveys of manufacturers and trade unionists, and while these reports tend towards suggesting that the recession of the mid-1880s was felt more severely than the two 1870s recessions, there was no unanimity of opinion. The critical question is whether the 1883-1886 recession may fairly be described as a slump in terms of the arguments advanced in this chapter.

The slump is regarded as a particularly severe recession in a period of generally depressive economic trends, the recession being so severe that it cleanses the economy of various major structural weaknesses and allows a long period of substantial economic growth to take place. On these grounds, it is possible to argue that either 1883-86 or 1891-93 is the slump of the long cycle, but it is not really possible to regard the 1876-79 depression as a slump. The question of which of the two recessions should be regarded as the "true" slump is in part one of emphasis, given that each recession had a similar depth when measured in terms of the shortfall between actual GNP or GDP at the end of the slump from the GDP or GNP levels which would have existed had output grown in line with the prevailing natural growth rate (about 2% per annum at this time). The 1883-86 recession, with its intense early phase and less intense later phase, is closer in internal structure to other major slumps (1839-43, 1929-33, 1979-83) than is the 1891-93 recession, but this by itself is not decisive in diagnosing the recession of the mid-1880s as the slump. It needs also to be recognised that while growth rates were much higher, and over a longer period, after each of these recessions than before them, the growth records after 1886 was severely interrupted by the 1891-93 recession itself, while there was no such interruption of similar intensity after the 1891-93 recession. This may be advanced as an argument for regarding the 1891-93 recession as a long cycle slump, but closer examination of Table A1 suggests that while high growth rates were sustained in the 1890s, the early 1900s was a time of very slow growth. This weakens the claim that 1891-93 was the long cycle slump in the UK.

The long cycle slump is regarded here as comprising the 1883-86 recession, because it appears to have the internal structure of slump, because such a dating would give a duration of the long cycle downswing (13 years) comparable to later long cycle downswings, becuase it would give a date of slump roughly contemporaneous with slumps in Germany, and arguably in France, and because the period after 1886 appeared to show substantially higher economic growth rates than characterised the

downswing of the previous long cycle. The 1891-93 recession is regarded as a sharp recession in the upswing of the long cycle, rather than as the last recession of the downswing. The trigger for this recession was a banking crisis (the "Baring crisis", see chapter 9 below) following an over-provision of loans to the Argentine. In this recession, events in the "white periphery" undoubtedly impinged on the advanced European economies, but the effects of the periphery, and particularly of the USA, on the core, and particularly the UK, were very strong throughout the period up to 1914. It should not be regarded as unusual that the boom following a slump should be marred by a financial crisis, given the climate of speculation generated by a period of unusually fast economic growth. The banking crisis of 1847, following the post-slump railway boom of the mid-1840s[94] may be regarded as a precedent.

It needs to be emphasised that in comparison with other long cycles, the 1873-1914 long cycle in the UK is weakly developed. The downswing of the 1870s is clear enough, but the growth performance of the period from the 1880s to the start of the First World War is less clear. The discussion above suggests that a long cycle rhythm *can* be identified, but this is only because a theoretical model of the long cycle, and the timing of its phases, has already been developed. Without this theoretical context, the uninitiated observer would be more likely to pinpoint a 25 year cycle, with slow growth from 1873 to 1886, fast growth from 1886 to 1899, and then slow growth from 1899 to 1912. This is the dominant rhythm in the period concerned; the rhythm of the 50 year long cycle is apparently merely a secondary feature. The Kuznets long cycle of around 20 to 25 years would appear to have been an extremely important factor in the development of the USA economy, with major spurts of growth in the late 1860s, the late 1880s and the late 1900s, and has been discussed by many economists and economic historians from Kuznets onwards.[95]

Until a very late stage of this research work, the present author accepted the existence of the Kuznets cycle and assumed that the confused time profiles of growth in the major economies in the decades before 1914 resulted simply from the interference pattern of the "European" 50 year cycle and the "American" 20 year cycle. A complicating feature, again much discussed by economic historians,[96] is that periods of fast growth in the "white periphery" (USA, Canada, Argentina, Australia, New Zealand, South Africa, etc.) diverted large amounts of capital from the European "core" and slowed down investment and growth there, while periods of slow growth in the periphery led to more favourable conditions for investment in the core; thus a system of inverse swings in the Kuznets cycle developed, with the European Kuznets cycle being in its upper phase

when the American Kuznets cycle was in its lower phase (e.g. in the 1890s) and vice versa.

It is questionable, though, whether the Kuznets cycle is a true economic cycle. The problem is not statistical; enough time series have been constructed, particularly for the USA and other countries of the white periphery, to indicate a definite 20 year rhythm of development.[97] Neither is the problem one of a lack of clarity in the internal structure of the Kuznets cycle. Abramovitz (1968) notes, for example, a fairly clear sequence of a period of depression, or slow growth, lasting perhaps four to seven years, followed by a period of post-depression recovery, marked by more intensive use of the existing resource base, this period lasting a similar length of time, followed by a period of fast and steady growth, lasting seven to eleven years, with considerable extensions of the existing resource base, and encouraging substantial inward migration of labour and capital.[98] The Kuznets wave was essentially a feature of the white periphery in circumstances in which capital was plentiful in the European core but relatively scarce in the periphery, in which there was labour surplus in the core but labour shortage in the periphery, and in which the resource base of the periphery (land, minerals, etc.) was vast and underutilised. In such circumstances, and given appropriate technical conditions, there was clearly the possibility of a substantial factoral shift from core to periphery, with the predominant direction of migration of both capital and labour being from areas of glut to areas of shortage, from the European core to the white periphery.[99] It is not difficult to envisage these factor movements having a wave-like form, with the strength of these movements depending not so much on economic conditions in the economic core, but rather on the ability of the peripheral economies at any particular time to engage in a substantial expansion of their resource bases.[100]

The historical existence of a Kuznets *wave* would appear to be well established, but this wave lacks an essential feature which prevents it being described as a *cycle*; it is not self-perpetuating. The pioneers of the study of the Kuznets wave maintained a proper caution on this point,[101] with Kuznets himself preferring the term "waves" to "cycles".[102] Abramovitz (1968) suggested that the Kuznets wave was strong in the American economy from 1840 to 1914, but disappeared thereafter. Indeed, while it would appear that periods of particularly fast growth have recurred at approximately 25 year intervals in the 20th century (the early 1910s, the mid-1930s, the early 1960s, and arguably the mid-1980s) this represents a feature of the Kondratieff cycle, where periods of fast growth are concentrated at the beginning and end of the upswing, rather

than any recurrence of the Kuznets wave. There was, for example, no deep "Kuznets depression" between the phases of rapid growth in the mid-1930s and the early 1960s.

The Kuznets wave was essentially the product of a particular historical phase of economic development. An old colonialism, built up on the basis of well established patterns of international trade,[103] was starting to be replaced by a new colonialism, based more on the exploitation of plentiful natural resources in new territories.[104,105] The rapidity of expansion of this new resource base depended not simply on conditions in the periphery, but also on fast population growth and the accumulation of capital in the core. Towards the end of the 19th century, the expansion of the peripheral economies had reached such a pace as to be a strong influence on the rate of growth of the core economies. Since periods of fast growth in the periphery diverted capital and labour from the core to an appreciable extent, the Kuznets swings in several European economies were not synchronised with the Kuznets swings in the periphery, but on the contrary followed an *inverse* pattern.[106] This was particularly marked in Britain, a country which at times exported half its investment.[107] Foreign investment may have represented the most attractive opportunity for capital, particularly when the periphery was undergoing a phase of fast growth,[108] but the wages generated by this investment appeared not in Britain, but abroad. As a result, heavy capital exports tended to depress domestic growth.

It now becomes more readily understandable why the phases of the Kondratieff cycle were so weakly delineated in the UK in the decades before 1914. The 1886-1914 upswing was, like other long cycle upswings, a period with considerable scope for the expansion of economic activities. Probably the most important feature of this was the expansion of the economies of the white periphery. When the periphery was expanding fastest, however, domestic investment in the capital exporting countries tended to be low, leading to prolonged phases of slow growth in the European core, and in the UK especially. Thus, in the second half of the 1886-1914 upswing, and particularly between 1900 and 1912, the UK showed conspicuously slow growth, the reverse of what might normally be expected at that stage of the long cycle. This contrasts with the 1890s, when growth in the periphery was slow and UK investment tended to be more domestically orientated, leading to a period of sustained fast growth. The slowing down of foreign investment abroad was triggered by the collapse in 1890 of the Baring bank following an over-commitment of investment to the Argentine, a national economy which had hit trouble.[109] This banking collapse had the effect of making investors cautious for a while of foreign investment.[110] In many respects, the "great depression"

in the white periphery came not in the 1880s, as in Europe, but in the 1890s.[111]

There is clearly much more which could usefully be said about this very complicated phase of economic history,[112] but enough has been written to indicate the reason why the patterns of economic growth in the UK between 1886 and 1914 differ so substantially from what would normally be expected of the upswing of the long cycle. There does not appear to be any inexplicable anomaly great enough as to require the abandonment of any attempt to use long cycle theory to help interpret the record of economic growth in the 19th century. At an earlier stage of the research, it was felt that the 50 year long cycle was a distinctively 20th century phenomenon, and that the confused economic trends of the late 19th century show that the long cycle was present only in an immature form, if at all. Such theoretical pessimism was, it appears now, unnecessary, since whatever the difficulties of examining the late 19th century in terms of a long cycle framework, the economic profile of the early and mid 19th century fits far more readily into the framework developed so far in this chapter. Attention now turns to this earlier period.

(ii) 1815-1870

The concepts of slump and of post-slump recovery are central to the present discussion of the long cycle. If one is to attempt to draw comparisons between early long cycles and 20th century long cycles, the natural place to enter the system is to try to show parallels between the sequence of events in the 1830s and 1840s and those of the 1920s and 1930s, and the 1970s and 1980s. Unfortunately, detailed coverage of the early period is relatively scanty, whether in terms of statistical material, or in terms of modern discussion by economic historians. Matthews (1954) has provided an important detailed study of the trade cycle from 1833 to 1842, which is essential reading for anyone wishing to reconstruct the period. He concerns himself, however, almost entirely with uncovering the internal structure of a single business cycle and, as he acknowledges in his preface, does not concern himself with the longer term evolution of the economy. For the 1840s, while the railway boom[113] and the Irish famine[114] have received attention from economic historians, there have been very few attempts to place the period in a broader perspective, although Boot (1984) goes a long way towards filling the gap.

The argument being advanced here was that there was a slump between 1839 and 1842. A severe recession in this period is certainly indicated by Table 2.1, but to show that this reflected a long cyclical slump it

is necessary to show that the years before 1839 had depressive tendencies, while the years after 1842 showed expansive tendencies. This, it is suggested, can be demonstrated, with the expansionary tendencies of the post-1842 period being especially clear.

Matthews (1954) notes that after a period of boom, and a crisis in December 1825, seven years of bad trade followed, in which there was no full recovery. In 1833 there was a fairly marked revival, after a poor year in 1832, and this revival, although steady at first, reached "manic" proportions by the Spring of 1836. After this, recessionary tendencies clearly dominated, with a sharp recession in 1837, two years of relative stability, and then a slump. Matthews suggests that in 1839 there were conflicting economic tendencies, with ouput in some industries being high, but with depression in other industries. In 1840, business remained generally unprofitable, but with production remaining high, while in 1841 and 1842 the economy moved steadily deeper into depression. Matthews notes that 1842 was the "hungriest (year) of the 'hungry forties' in Great Britain" and that "there is no doubt that distress was exceptionally acute."[115]

This profile, described by Matthews, is consistent with a notion of downswing and slump. No indication is given as to precisely when the downswing may be said to have started, but an 1825 start would appear to be consistent with the length of later downswings, a period from 1825 to 1842 being roughly the same length as the 1918-33 downswing and the 1966-1983 downswing. A closer examination of the 1820s would be required, however, to detect the subtle shifts from upswing to downswing. No attempt is made here to develop an analysis of the early 19th century upswing. Such an analysis would be complicated in that it would be necessary to disentangle the after-effects of the Napoleonic Wars, agricultural trends and industrial trends.

Taking the principle argued in section 2.4 above that economic trends are abnormal for perhaps five or six years following a major war, one would not necessarily expect the period from 1815 to 1820 to show the characteristics of a long cycle upswing. Checkland (1964 p.8) notes that, partly as a result of the demand created by the wars with France, but partly as a result of the industrial revolution itself, the British economy had been subject to virtually continuous expansion since about 1782. The resumption of European peace in 1815 created a new set of economic circumstances, which were in many respects favourable for industry "as exports of cotton goods, hardware, and cutlery, bar and pig iron were rushed to starved markets,"[116] but which plunged agriculture into considerable depression as prices fell after the wars. The agricultural depression was to be a persistent theme of debate in the

next ten years[117] with the agricultural price level generally being about two-thirds of its war-time peak.[118] Unemployment also increased during the post-war period, partly as a result of the return of soldiers to the civilian economy and partly as a result of the depression in agriculture.[119]

Smart (1910, 1917) in his early, but detailed, economic annals of the period provides sufficient information to identify the main cyclical movements in industry and agriculture. While agriculture remained depressed, apart from the occasional respite, throughout the period from 1815 to 1830 and beyond, industrial trends were generally expansive from 1818 to 1825, but more uncertain from 1825 onwards (Table 2.11). It is these industrial trends which determine the long cycle. The depression of 1819-20 may be regarded at least in part as a secondary post-war depression following a post-war boom, while the period from 1820 to 1825 was one of continuous expansion in industry. This period was long enough after the Napoleonic Wars for it to be suggested that the expansion represented underlying peace-time trends, rather than late aspects of a post-war recovery. Checkland notes that "by 1821 there were real signs of general recovery. It seemed as though the private initiatives that had operated so strongly before and during the war were now able to resume their expansive role."[120]

The depressions of 1816 and 1819-20 were essentially post-war depressions; the depression starting in late 1825, ten years into a peace-time period, was of a different nature. The boom of 1825 has been described by some, as Checkland (1964 p.13) notes, as the first cyclical boom of the modern sort, while Flamant and Singer-Kérel (1970 p.18) note that the depression which followed has been described as the "first national crisis," and was regarded as having exceptional significance by contemporary economists such as Say and Sismondi.[121] This depression was not an isolated event; the period from 1825 to 1842 was generally one of dull trade, relieved only by a vigorous cyclical upswing between 1833 and 1836, and by a more uncertain recovery in 1838 and 1839. Even as early as the 1830s, the development of the American economy was having significant effects on the development of the British economy. Between 1830 and 1836, Anglo-American trade doubled,[122] and growth in the UK and the USA tended to be cyclically concordant, with spurts of growth in the mid-1830s and mid-1840s, rather than cyclically discordant, as in the late 19th century (Table 2.1).

As in any cyclical downswing, there were elements of expansion which counteracted the generally depressive tendencies to some extent. The period from 1836 was, as both Matthews (1954) and Checkland (1964) note, one of considerable depression, with the period from 1839 to 1842

being one of extreme depression. It is argued that this last depression was a "slump" in the technical sense of being the final, severe, recession of a long cycle downswing, and that the period following 1842 was relatively free of recession, the financial crisis of 1847 notwithstanding.

Overcapacity was a great problem in the late 1830s. Checkland notes the problem in general terms when he suggests that

> "It seems that a situation had been reached by the later thirties in which the home demand for the products of industry, together with available exports markets, was insufficient to consume the whole of the new potential. The system, having adjusted itself to the new rate of growth of its industrial sector, was now heavily dependent on its continuance."[123]

The problem was manifested in different ways in different industries. In the coal industry, output rose by some 60 to 70 per cent between 1836 and 1843, as new capital poured into the coalfields, while sales increased by about 30%.[124] In addition, the employment generated in railway construction and shipbuilding following the mid-1830s boom was largely lost around 1840 with the completion of various large scale projects.[125] It would seem that the problems of the downswing, when compared with the upswing, were not those of lack of investment, but rather those of a lack of ability to absorb investment.

The problems of the cotton industry, discussed in detail by Matthews (1954 pp. 127-151) predated the late 1830s, although this is not readily apparent in output figures. In this industry, overhead costs (buildings, etc.) were so high in relation to prime costs that any reduction in capacity would have resulted in substantial increases in the unit costs of output. As a result the typical response to recession was not, as in modern industries, to reduce capacity and shed labour, but rather to make all efforts to operate at full capacity, despite falling demand. "The firm will have nothing better to do than carry on as before until its financial resources are exhausted."[126] Furthermore, technical improvements allowed new machines to replace old machines within a given factory space, and allowed effective capacity to increase even during a period of overcapacity. The period from 1826 to 1833 was marked by growing output but falling profits. This was then followed by a period of relative prosperity and further investment, while after about 1837, trends were conflicting but ultimately depressive.

The recession from the late 1830s to 1842 was exceptionally severe. Matthews[127] suggests that there was little if any deterioration in foreign trade to account for this, and that while a succession of poor harvests might have helped intensify the depression, this factor was not

wholly responsible. He suggests instead[128] that overcapacity was an extremely important factor behind the severity of recession, and that the investment boom of the mid-1830s was primarily responsible for the situation of overcapacity and falling profits. Part of the problem of handling the economy in a period close to a slump is that while a boom after a slump is both possible, and necessary to reduce unemployment (as in the 1840s or 1930s), a boom following a recession prior to a slump as in the mid-1830s or early 1870s, will tend not to be sustainable, and the after-effects of the boom will be felt in a deep recession. In the early 1840s a combination of high investment in previous years with a deficiency of markets led to a sharp cyclical downturn.

After 1842, it is suggested that the fast and virtually continuous growth over a prolonged period indicates that a long cycle upswing was in motion. National income figures (Table 2.1) suggest that some sign of recovery was apparent in 1843,[129] and that growth in the short term was extremely rapid, averaging 6.1% per annum between 1843 and 1846, despite the Irish famine. The most prominent feature of this growth was a boom in railway construction. The precise timing of the railway boom is, as Boot notes,[130] of considerable importance in the economic history of the period. The account which follows is based chiefly on the works of Gourvish 1980 and Boot 1984.[131]

The general trend in the economy was for investment to expand in 1843 and to accelerate thereafter. A peak was reached in 1845, and investment fell from 1846. In terms of the railway boom, this represented the planning phase. There were, however, long time lags between planning and authorisation of capital, and the actual construction of the railways; the peak for construction came in the years 1846-1848, and was, as Boot notes, countercyclical in nature (see Table 2.12). The peak for the opening of lines came later still (1847-1849), reflecting a still later stage in the wave of investment of the 1840s.

This set of time lags shows that railway construction did not *cause* the post-slump recovery. Mitchell (1964), after emphasising the importance to the economy of railway construction in the late 1840s, then notes

> "the supporting rather than leading nature of the role of railway building in the economic fluctuations of the time. Railway building may have sustained, even at times accelerated, economic growth; but it did not lead it - not, at least, if growth be measured by national income."[132]

This illustrates a point of crucial importance to the theory of the long cycle presented here. The start of a long cycle upswing following a slump is seen as a two phase process. In the first phase,

spontaneous post-slump recovery causes rapid economic growth, from a low base, in the economy as a whole. In the second phase, the strongly expansionary economic climate provides favourable conditions for the rapid development of new industries, whether representing post-slump innovations or previously underdeveloped industries. This latter phase secures the basis for renewed expansion in the upswing of the long cycle. A high rate of innovation, along with the expansion of new industries, is seen as *part* of the post-slump recovery, in contrast with the tendency in neo-Schumpeterian work (discussed in section 2.7 below) to see innovation as the *cause* of the recovery. In the 1840s, railway building gave considerable support to a recovery which was already under way. In 1844, a year before the start of the railway construction boom, production rose sharply in the iron, brick and coal industries, and more steadily in shipbuilding and house building, while the start of recovery in the textile industry had taken place in 1843.[133]

It is not proposed to present any detailed account of the long cycle upswing following the 1840s railway boom. The period was not without its crises; in 1847 the commercial system was in serious disarray, although industrial activity, apart from the textile sector, was not seriously affected.[134] The period from about 1850 to 1873 has commonly been described as the "Great Victorian Boom"[135] although Church (1975 p.10) regards this appellation as exaggerated. What seems clear from Table 2.1 is that growth was steady and high up to the mid-1850s but far slower thereafter, with the American Civil War (1861-64) having a particularly severe depressive effect on the cotton industry. The picture would appear to be one of a long cycle upswing which lost impetus in Britain around the mid-1850s. It seems likely that at least part of the reason for the impetus of the long cycle being slight in the "late upswing" was the limited base of product innovations on which the upswing was historically based. In later upswings, in which there was a higher degree of integration between science and production, the wider innovation base allowed for high rates of growth to continue throughout the whole upswing. This theme is developed further in section 2.7 below.

The railway boom was undoubtedly of considerable importance in securing the expansionary trends of the late 1840s and 1850s, with expenditure on railway capital formation (excluding land) representing around 6% of national income between 1846 and 1848, and fluctuating between 1% and 3% of national income between 1850 and 1869.[136] Hawke (1970) estimates that in the absence of the railways, national income by 1865 might have been 11% lower than was actually the case. Church (1975 pp.30-34) argues that this figure is insufficient to argue the case that the expansion of the railway system was the sole or predominant

cause of prosperity. It seems however that it is more than sufficient to argue the case that railway expansion had a strong additional impact on the economy whosw conjunctural tendencies would have been towards expansion anyway.

Clarification of the economic trends from the Napoleonic wars to the mid 19th century allows a more complete chronology of the UK long cycle to be produced. This is listed below.

?	- 1825	Upswing	(Boom in 1821-1825)
1825	- 1839	Downswing	
1839	- 1842	Slump	
1842	- 1847	Post-slump recovery	
1847	- 1857	Early upswing	
1857	- 1871	Late upswing	(Boom in 1867-1871)
1871	- 1883	Downswing	
1883	- 1886	Slump	
1886	- 1914/1918	Upswing	
	(1878 - 1893	Slow growth in UK, fast growth in periphery (USA etc.))	
	(1893 - 1899	Fast growth in UK, slow growth in periphery)	
	(1899 - 1914	Slow growth in UK, fast growth in periphery)	
1914/1918	- 1929	Downswing	
1929	- 1932	Slump	
1932	- 1937	Post-slump recovery	
1937	- (1948)	Early upswing	
(1948)	- 1958	Upswing	(The "austere" upswing: section 2.7 below)
1958	- 1966	Late upswing	(The "affluent" upswing: boom)
1966	- 1979	Downswing	
1979	- 1983	Slump	
1983 (?)	-	Post-slump recovery	(weakly developed)

2.7 Innovation, Enterprise Investment, and the Long Cycle

Schumpeter (1939) placed great emphasis on the role of innovation in generating business cycles of different lengths, and in particular in the generation of the 50 year long cycle. Schumpeter's work on business cycles remained in relative obscurity for several decades, until the deterioration of economic trends in the 1970s brought the whole question of the economic long cycle into more general attention. There have been several recent attempts[137] to resurrect Schumpeter's basic idea, and, more importantly, to provide empirical backing for the thesis that a clustering of basic innovation creates a bandwagoning effect, which creates the upswing of the long cycle. Naturally, there are differences in emphasis between these writers, with for example Mensch (1979) emphasising the actual innovations themselves and Freeman, Clark and Soete (1982) stressing the importance of the development of major industrial systems based upon these innovations.

Mensch (1979) used a series of case studies of major innovation by Jewkes, Sawers and Stillerman (1958) in order to provide a population of basic innovations, and then graphed the timing of these innovations in order to provide a time series of major innovation. This time series showed very clearly a large number of basic innovations in the decades of "depression" in the 1880s and the 1930s, and relatively small numbers in intervening decades. Fig. 2.2, which is discussed in more detail later, reproduces Mensch's graph of the innovation curve, but in a modified form; Mensch merely used decennial averages,[138] but for the purposes of identifying the timing of clusters more precisely, a short-term moving average has been employed instead.[139]

Mensch's main argument is that a dearth of basic innovations, a "stalemate in technology", causes the long depression, while a sudden clustering of innovations in the slump breaks the depression and starts the economy moving on an upward wave. Mensch's conception of technological change and of innovation are that these processes are almost entirely exogenous, being outside factors acting on the economic system but not themselves part of the economic system; the clustering process thus explains economic development, but is not itself explained by economic development. Later writers, notably Freeman, Clark and Soete (1982 pp.51-57) and van Duijn (1983) take issue with the one-sided presentation of the relationship between the economy and technology, and suggest that a depression is not a good time for the clustering of basic innovations, but this makes it even less clear how an innovation based theory of the long cycle can explain the switch between long cycle downswing and long cycle upswing.

It is suggested here that it is not innovations which drive the long cycle, but rather that it is the course of the long cycle which causes fluctuations in the rate of innovation. It is suggested that the apparent clustering of innovation in the depth of recession, as in the 1840s, 1880s and 1930s, represents not an exogenously generated wave of innovation which lifts the economy out of depression, but rather an enhanced rate of innovation in response to rapid economic growth rates as the economy *recovers* from slump. The clusters of innovation, as will shortly be seen, take place *not* in the slump, but rather in the post-slump recovery, when the rate of economic growth is generally high. Thus, the innovation cluster of the 1930s is centred not on the early 1930s, the years of slump, but rather on the mid-1930s, the years of recovery and fast growth.

This assessment of the direction of causality is more in line with that of Schmookler (1966, 1972) than with Mensch. Schmookler (1966 p.209) argued that "in the economic system (technological change) is primarily an endogenous variable" and that "invention and innovation are, as well as other things, *economic* activities, carried out in the hope of economic gain," and that the time series for invention and innovation would be determined primarily by economic factors, and most notably the state of the market. This argument was supported by detailed studies of patents granted in different years in different industries in the USA.

Innovation may be regarded as investment of a new type and, being a form of investment, is subject to the same broad economic influences which affect other forms of investments and particularly investment in sectors with a high rate of expansion. Lamfalussy (1961) uses the term "enterprise investment" to cover the type of investment which occurs in an expanding market, and explicitly notes that this type of investment relies heavily on major innovations;[140] enterprise investment in an expanding market with radical new innovations is contrasted with "defensive investment" in a static or declining market with minor incremental innovations.[141]

The most important macro-economic stimulant to a high rate of enterprise investment is the prospect of rapidly expanding aggregate demand in the economy. This high level of enterprise investment itself fosters high rates of growth in a subsequent period.

The emphasis on innovation clustering in the neo-Schumpeterian body of work would seem, therefore, to be too narrow. The critical question is not so much that of the presence or absence of an innovation cluster, but rather that of the level of enterprise investment. The concentration of attention on post-slump innovation clusters, and the

growth of infant industries, has tended to distract attention from the significance of the vigorous development of a variety of adolescent industries in a post-slump period. This adolescent growth is more readily conceptualised in terms of a high rate of enterprise investment at a time of fast economic growth, than in terms of an innovation cluster.

These "adolescent" industries, such as the railway industry of the 1840s or the car industry of the 1930s, are generally large enough at the end of the slump to make a very sizeable impact on the course of development in a post-slump recovery; it usually takes longer before the genuinely new industries, such as various of the electrical engineering sectors of the 1930s, themselves have a major large-scale economic effect. Kondratieff seems rather closer than Mensch to the truth concerning the early upswing of the long cycle when he suggests that "during the recession of the long waves an especially large number of important discoveries and inventions in the technique of production and communication are made, which, however, are usually applied on a large scale only at the beginning of the next long upswing."[142] The critical point seems to be, however, not that the important discoveries and inventions were made in the downswing, but rather that the scope for innovation diffusion was greatest in the subsequent upswing.

Enterprise investment, with its sub-set, basic innovation, takes place preferentially when markets are expanding. The current GDP growth rate is a good indication of this expansiveness, although the question of anticipated growth rates, of whether economic actors think that current high growth rates are stable or not, is also important. It cannot be emphasised too strongly that whether the economy is "depressed" or not, in terms of the level of unemployment, is almost irrelevant; it is the current dynamic movement of the economy, rather than the past accumulation of unemployment, which matters. A post-slump recovery phase with a sutainable growth rate of 4-5% can provide an extremely attractive climate for expansive investment, even though unemployment may be standing at 10% or even more, while a growth rate of about 2% at near full employment might not be nearly so attractive for expansive investment.

It is difficult to provide a meaningful and accurate statistical indicator of the incentive to invest expansively, but it would clearly be useful to be able to compare Mensch's series for basic innovation with a time series giving the "incentive to invest." The series given in Fig. 2.2 is therefore to be taken only as a very approximate indicator of the incentive to invest. It is argued that the strength of this incentive depends on economic conditions in the very recent past, which provide background information for the decision, and on anticipations about conditions in an unknown future. While it would obviously be

unrealistic to expect perfect knowledge about the future, one might expect that businessmen would have a reasonably shrewd idea about how the economy is likely to operate in, say, a two year future period, and that this anticipation will be fed into the investment decision. It is suggested as a first approximation that in year n, the average growth rate between years n-1 and n+2 will provide a rough indicator of the incentive to invest, allowing both for conditions in the recent past, and for anticipations of the future.

Fig 2.2 graphs the medium term growth rate, as defined above, for the period 1830 to 1940 and also Mensch's series for basic innovations (see also Table 2.13). To smooth the innovation data slightly, short term moving averages have been used, it being regarded almost as a matter of chance whether an innovation took place in say, 1931 rather than 1932. It is emphasised however that since it is regarded as theoretically of some importance whether an innovation took place in, say, 1931 or 1935, the smoothing of data over a period of 10 years, as in Mensch (1979 pp.130-133) or Freeman, Clark and Soete (1982 p.62) is not adopted; such a process makes the precise identification of turning points very difficult, and will tend to confuse the slump with the post-slump recovery.

It is emphasised that any relationship obtained between the medium term growth rate and the time series for basic innovation is to be regarded as provisional, since both the curves shown in Fig. 2.2 are open to refinement. It is for example unclear to what extent the medium term growth rate, as calculated above, represents a suitable proxy variable for the incentive to innovate, while the problems associated with the time series for innovation are immense. These problems in the latter series come under two main headings; the problem of deciding which innovations are important enough to be classed as "basic", or in some other sense significant, and the problem of dating a named innovation. The way such problems are treated can substantially alter an innovation curve, for example, the pecked line shown in Fig 2.2 uses an alternative set of dates, provided by Freeman, Clark and Soete (1982 p.48), for Mensch's basic data series, and shows an even stronger peak of innovation in the mid-1930s than indicated by Mensch.[143]

Innovations can be classed as major or minor either on technological grounds, or on economic grounds, or on some mixture of the two. It is more helpful, in analysing an economic time series, to have a classification based on economic grounds, according to whether particular innovations are economically significant or not, but this would tend to bias any time series towards underestimating the degree of innovativeness of periods of slow growth in which it is more difficult for a

potentially significant innovation to become economically established.

The problems ot timing are for the most part fairly obvious, but still difficult to resolve; should one take the first introduction of a product, or merely the first reasonably successful production? and what account should be taken of distinctions between innovation at the global level and innovation at the national level?

Despite all these problems, the relationships between the two time series is worthy of discussion. The two peaks of innovation of the mid-1930s and the 1880s are clearly identifiable; the 1930s peak coincides with a period of fast growth in the world economy but the 1880s peak does not. It has to be remembered, however, that in the inter-war period the economic movements of the advanced capitalist economies were in phase whereas up to 1914 they were strongly out of phase. Table 2.14 calculates medium term growth rates between 1870 and 1911 for the three most important national economies of the period, the UK, Germany and the USA. It is shown that throughout the critical period of high innovation, lasting from about 1878 to about 1888, growth rates in the UK tended to be low, with the medium term growth rate never approaching the critical threshold figure of about 4.2%, above which basic innovations tend to be generated in substantial numbers. In the USA, in contrast, growth was exceptionally rapid during this period, with the medium term growth rate averaging 9% between 1876 and 1879 remaining high through most of the 1880s, while in Germany a long-sustained growth rate of over 3% would presumably be sufficient to enhance the rate of innovation.

It is however the American series which is the most important; Jewkes, Sawers and Stillerman note[144] that "the last third of the nineteenth century saw inventions proliferate in the United States: it is indeed often regarded as the great age of 'heroic' invention." Schmookler[145] provides a time series for patents granted in the USA, and shows that the number remained steady at about 12,000 between 1867 and 1879, before surging to 20,000 in 1883, and an average of about 23,000 in the 1890s and 30,000 in the 1900s. Such a list does not distinguish between major and minor inventions, but still suggests a considerable technological dynamic developing.

The 'heroic' age of invention in the USA in the 1880s in many ways marks an important break between the early industrial revolution and the modern industrial economy. One can conceptualise this period as marking the beginning of a phase of "technological surplus", a period in which any inhibition of economic growth arises not from a shortage of new technologies but, on the contrary, from an inability, at certain stages, of the economy to take advantage of the wide range of products

and processes which can potentially be brought into production. Prior to the achievement of technolgical surplus the rate of innovation was relatively low, as Fig 2.2 suggests, even if some allowance possibly needs to be made for a distant past being oversimplified, in a historical account, when compared with a more recent past. The rate of basic innovation might be accerated by a period of rapid economic growth, for example, the mid-1840s, but still depended heavily on whether the appropriate technologies were available or not. After the 1880s, and especially from the 1930s onwards, fluctuations in the rate of basic innovation depend not so much on whether the technology is available or not, but more on economic calculations of whether or not it is worth introducing and expanding the new technologies. If, as appears to have happened in the 1970s,[146] there is a shortage of important innovations, this is taken to mean that the economic climate for introducing innovations is unfavourable, with the implication that a resumption of faster growth would induce a higher rate of basic innovation. There is no reason to assume, along with Fitoussi and Georgescu-Roegen (1980), that under modern conditions inventions are automatically and immediately converted into innovations, and that by implication a shortage of innovations implies a lack of technological progress, which in turn implies that only stagnation can follow a slump. It is more likely that under depressed conditons, major innovations, which often require considerable investment of a risky kind, are shelved until more favourable conditions arrive.[147]

One of the main reasons for the detailed comparison of the forms of 19th and 20th century long cycles in sections 2.5 and 2.6 above was to see if the full development of the long cycle depended on a stage of technological surplus having been reached. The examination of the period from the 1820s to the 1880s suggested that on the whole it did not, and that UK long cycles could be noted as clearly in the early 19th century as in the mid-20th century. An important qualification needs to be made, however, in that prior to the achievement of technological surplus, the dynamic potential of an industrial system may not be sufficient to generate high rates of growth in the late stages of the upswing as well as in the early stages. Table 2.1 would appear to indicate, for example, a definite slowing down of growth in the UK in the second half of the 1850s as the expansion brought into being by the extension of the railway system became less of a factor in current economic growth. A hundred years later, in the late 1950s and early 1960s, the economies of the advanced capitalist economies were in a state of considerable technological surplus, which allowed not just the maintenance of high rates of productivity and output growth, but indeed

the *acceleration* of productivity and output growth (Table 2.15). The dynamics of this particular period will be examined shortly, but first some of the historical implications of the achievement of technological surplus need to be discussed. Terms such as the "second industrial revolution" are often proposed to cover the events of the 1930s or even the 1980s, but if any period deserves this designation, it is perhaps the 1880s, a decade of major qualitative changes in the organisation of production and markets.

Lewis (1978 p.29) notes that

> "The essence of the industrial and agricultural revolution in the first three-quarters of the nineteenth century was in new ways of doing old things .... In the last quarter of the nineteenth century the revolution added a new twist - that of making new commodities, ... a seemingly endless process .... Thus a rich man in 1870 did not possess anything that a rich man in 1770 had not possessed; he might have more or larger houses, more clothes .... (etc.) .... than say a school teacher possessed, but as likely as not, his riches were displayed in the number of servants whom he employed rather than in his personal use of commodities."

Thus Lewis concentrates on the aspect of consumer demand, and indicates the start of the historically extremely important process of economic development through the introduction of new commodities. The burst of innovation in the 1880s may be regarded as a crucial early stage of this process. A significant implication of Lewis's statement is that there came about a tendency for a net shift in employment away from low order personal services and into industry, the production of commodities. Such a tendency is arguably characteristic of modern industrial society[148] but is periodically counteracted by problems of industrial recession, and by the growth of employment in the low wage end of the service sector during times of industrial recession.[149]

Lewis identifies one important component of the achievement of scientific surplus: the changing structure of consumer demand. Kuznets, discussing the same period, concentrates on the changing relationship between science, technology and the economy in a long passage worth quoting in full.

> "There is a marked contrast in the relation of technological discoveries to actual changes between the period of the Industrial Revolution in England and, say, the twentieth century. The revolutions in cotton textiles and in pig iron and bar iron production, and the introduction of steam in the second half of the eighteenth century were in response to long-felt needs,

followed a long search, and were based in at least one case - the introduction of coke in the smelting of iron ore - upon trial and error, with little knowledge of the underlying chemical processes. Here then, necessity was the mother of invention, and the period of gestation was long. In contrast many economically important innovations of the late nineteenth and the twentieth century were the results of attempts to apply new scientific discoveries, attempts by people like Edison and Marconi who were not scientists but who understood the scientific advances and were impelled to look for practical applications. Here, the addition to the stock of knowledge came first, and one might say that invention fostered need." (Kuznets 1965 pp.85-86).

Under conditions of technological surplus, new technology generates immense possibilities for expansion, the uptake of which depends on general economic conditions; beforehand, new technology is required more to remove bottlenecks in the production process than to expand the range of economic possibilities. One very important early bottleneck was in the cotton industry, where techniques for cotton spinning by machine advanced more readily than techniques for weaving. For a time, this placed the hand loom weavers in a highly favourable position, but when the bottleneck was broken in the early 19th century, the new technical possibilities this created for the cotton industry were very much at the expense of the hand loom weavers.[150]

Mensch's time series for basic innovation (Table 2.13, Fig 2.2) suggests that there was a shortage of important innovations until after the First World War, even though Schmookler (1966 pp.228-230) indicates that the number of successful patents in the USA doubled between 1883 and 1914. It seems, however, that Mensch's time series, derived from the case studies of Jewkes, Sawers and Stillerman (1958) seriously understates the extent of basic innovation in the decades before the First World War. There would seem to be two main possible reasons for this; firstly a possible conscious or subconscious desire on the part of the compilers of the list of innovations to concentrate detailed attention to the "heroic age" of innovation in the USA at the expense of less obviously spectacular periods, and secondly the effect of the onset of the First World War in curtailing the economic life spans of certain innovations which might have been regarded as highly significant if there had been a period of peace-time growth rather than war. In that an apparently low rate of innovation before the First World War can be found even in more detailed series of innovation than that studied by Mensch,[151] the latter explanation is perhaps more pertinent.

By any standards, there are some strange omissions from Mensch's

list. For example, while the helicopter (1936) and the jet engine (1941) are recorded as "basic innovations", the aeroplane is ignored. Similarly, there are no basic innovations recorded in the automobile industry between 1886 (the gasoline motor) and the early 1930s, yet one would have thought that, at the very least, the advent of the model T Ford, the first cheap mass produced car, would have merited a mention. This car was introduced to the market in 1908, after a period of product development designed to capture a potentially extremely lucrative market.[152] The process of product development involved the solution of a whole series of technical problems, which in total surely amount to the equivalent of at least one basic innovation in the time series of Table 2.13.

It is hard to credit a period in which the aeroplane was first developed and in which the automobile developed from being a machine which travelled at pedestrian pace to one which supplied a mass market for transport in the USA as being a period lacking in basic innovation. It is perhaps worth noting that van Duijn (1983 pp.176-179) in his list of basic innovations mentions the aeroplane (innovation in 1910) but cites no major innovations in the development of the motor car between 1895 and 1948; the assembly line (1913) can be regarded as an innovation in general methods of industrial production rather than as an innovation restricted to the car industry. It would seem that long cycle theorists still have a lot of work to do to uncover the evolution of industrial systems in the critical, but neglected, period from 1886 to 1914, which, after all, is a complete long cycle upswing. While the territorial expansion of capitalism was perhaps the most important feature of economic development in the decades before the First World War, and while this expansion to some extent displaced industrial development, especially in Britain, it would be grossly misleading to suggest that there was no significant development in industrial systems during the upswing of the "imperial" long cycle.

The fact that the degree of innovation in the first twenty years of the 20th century has probably been significantly underestimated by long cycle theorists does not, however, lessen the significance of the surge of innovations in the mid-1930s. It is the interpretation of this surge which is the point at issue.

Fig 2.2, isofar as it can be taken as reliable, suggests a modest burst of innovative activity around 1923, followed by a slowing down of the pace of innovations in the late 1920s, and then a major burst of innovation just after the 1929-32 slump. This is the interpretation which would be suggested from the Freeman, Clark and Soete time series,[153] and correlates well with the time series for economic expansion. Mensch's

own time series for the same set of innovations [154] suggests that the early 1920s was a phase of relatively little innovation, while there was substantial basic innovation in the late 1920s, despite economic growth rates being higher in the early 1920s than in the late 1920s; in any time series of innovation there is a danger that slight differences in interpreting the date of innovation could well lead to substantial differences to the interpretation of the innovation curve.

The slump itself was not devoid of basic innovation, but the rate of innovation appears to have been considerably lower than in the more expansionary climate of the 1920s. The period immediately after the slump was one in which the rate of innovation was extremely high. It cannot be emphasised too strongly that this wave of innovation was *not* due to the economy being depressed, but rather was due to the extremely rapid pace of economic development *following* a slump; the fact that unemployment was high in the period of fast economic growth concerned is largely irrelevant. A convincing theory of the long cycle would not evaluate whether the economy was depressed or not simply by examining the current unemployment rate; to understand the dynamics of the situation at any given time it is also necessary to take into account current growth rates, and whether the *trend* of unemployment was upwards or downwards. Unemployment was high in the 1930s, but was going down fast as the economy was expanding; this, it is suggested, means that the prevailing economic trends were not depressive.

The double significance of expansion in depression (the economy is depressed, but economic trends are expansive) is one which is often missed by long cycle theorists, who generally tend to place the upswing of the long cycle not at a date in which economic trends *start* to become expansive (1932 in the inter-war period) but rather at a date in which the expansion has gone such a distance as to leave the economy at or near full employment. van Duijn (1983) for example gives a date of 1937 for the start of the upswing while Mandel (1980) gives a date of 1940 in America and 1948 in Europe. The significance of trends in the intervening period tends to be overlooked. For example, on the question of basic innovation, Freeman, Clark and Soete appear to neglect the main point when when they suggest that

> "It is very hard to see in what sense the originally quite separate launch of helicopters, television, tetra-ethyl lead, titanium, etc. in the mid-1930s could constitute a 'bandwagon' in any normal meaning of the term. The swarms which matter in terms of their expansionary effects are the diffusion swarms *after* the basic innovations.[155]

The central criticism of this statement is that it is precisely

the *separateness* of these innovations which is the important point. If a series of major but unrelated innovations is made at a particular time but not at an earlier period, it suggests that there is something highly significant happening in the economy at that particular time to induce a stream of innovation; that "something" is post-slump recovery.

This criticism is not meant to imply that the diffusion swarms *after* the basic innovations are unimportant, but even here, the interpretation of economic history offered by Freeman, Clark and Soete is questionable. They present the picture of the boom phase of the post-war long cycle upswing as being driven by the "simultaneous rolling of several new technology bandwagons; for example, the computer bandwagon, the television bandwagon, the transistor bandwagon, the drugs bandwagon and the plastics bandwagon were all rolling fast in the 1950s as well as some other bandwagons like consumer durables."[155] These bandwagons can all be interpreted as starting in the 1930s or in the very early post-war period. There is, however, a striking omission from this list, the automobile bandwagon, which started to run not in the 1930s but rather in the 1900s (in America). The diffusion of the automobile was still at an early stage in the 1930s, especially in Europe (Fig 2.3), but the "bandwagon" was clearly starting to gather pace in the 1930s and accelerating through to the early 1960s, with product diffusion, product cheapening and quality improvement all taking place, and a high rate of investment in sectors related to car ownership, such as road building, also taking place.

It is inaccurate to portray the post-war long boom as the period in which the new technologies, and the infant sectors derived from these technologies, had expanded sufficiently to create the boom. The development of newer industries already in existence prior to the slump is also an important factor, and indeed is quantitatively a *more* important factor in the early stages of the upswing. The long boom is structurally the result of the expansion of *two* generations of newer industries, a generation pre-dating the slump and a generation post-dating the slump, rather than the result of the expansion of a *single* generation of industries.

The set of industries in existence at around a stage of slump may conveniently be divided into four conceptual groups; the "old" industries, the "mature" industries, the "young" industries, and the "infant" industries. This is an extension of the division between old and new industries which has commonly been made for the 1930s, both by contemporaries[156] and by later writers.[157] Each set of industries might be expected to react in a different way to the complex economic conditions of the downswing and the early upswing. For simplicity, the

discussion below concentrates on the industries of the 1920s and 1930s rather than those of the 1970s and 1980s, because the historical record is more complete, it being possible to study subsequent events in a way not possible for the 1980s.

The older industries (notably coal and cotton in the inter-war period) are those which have been in existence for a long time, have expanded rapidly in the past, *have already passed their zenith*, and have little prospect of expanding their employment for other than very short periods in future years, whether in the near future (the 1920s and 1930s) or the distant future (e.g. the 1960s). Such industries shed labour very quickly during the downswing and slump (chapter 4 below), and in such conditions are responsible for large scale increases in unemployment, but the expansive macro-economic conditions of the recovery allow employment in these declining industries to stabilise, temporarily. The experience of the 1950s and 1960s suggests however that under conditions of full employment, these sectors are squeezed out to a certain extent by other sectors.

The mature industries will also have been in existence for a long time, and will have reached a stage of "maturity" rather than "growth" on the industrial life cycle, but are far less doomed to decline than the "older" industries. Trends in these industries, which may be regarded as the "average" industries, tend to follow macro-economic trends rather than to lead such trends. Such sectors therefore tend to contract in the downswing and expand in the upswing, but the rates of expansion and contraction vary considerably between sectors. Sometimes, as in the 1930s construction industry, the expansion is strongly marked during the upswing, but such industries should not be regarded as "young" industries merely as a result of this expansion. To treat the terms "new" and "expanding" as synonymous ultimately confuses the discussion of economic trends, rather than clarifying it.[158]

The new industries (such as the inter-war car industry) are distinguished from the mature industries by being at a "growth" stage of their life cycle rather than at a "maturity" stage. This implies that there are still considerable possibilities for expansion in output and employment in these industries, even though the pace of such expansion is influenced by general economic conditions. These industries might in certain circumstances become severely depressed during the slump; the car industry in the early 1930s is a case in point.[159] It is more common, however, for the slump to halt expansion in these newer industries, rather than to create a deep depression. In a subsequent post-slump recovery, the generally highly expansionary economic conditions would encourage accelerated development of the new industry. This is shown by

the statistics for the car industry graphed in Fig 2.3; the rate of diffusion of car ownership in the period from 1933 to 1938 was almost twice as fast in the UK as in the 1920s, a factor which had considerable implications for output and employment in the car industry. Between 1932 and 1939, insured employment in the UK vehicles industry increased from 247,000 to 506,000, representing about one tenth of the total increase in employment during the period from an initial base of about one fortieth of the total insured employment (in 1932).[160] Such industries are of fundamental importance in the transition from downswing to upswing, and in stabilising the upswing once it is in motion.

The "infant" industries are generally those which are represented in any time series for basic innovation. These industries are here regarded, in contrast with most recent writing on the long cycle, as having a mainly symbolic rather than a substantial effect on the immediate transition from depression to recovery. It would seem to be the case that a high rate of basic innovation (measured retrospectively) tends to be induced by the rapid pace of post-slump economic growth, but the impact of this wave of innovation on the economy tends, in aggregate terms, not to be very large until full employment has already been reached. The infant industries of this generation generally tend to be the main growth industries of the late upswing rather than of the early upswing.

The distinction between young industries and infant industries is historically important. There is for example a considerable contrast between the 1843-1873 upswing and the 1932-1966 upswing. In the earlier case there was a major "young" industry developing rapidly after the slump, this being the railway industry, but prior to the days of technological surplus, there was a shortage of infant industries. As a result, in the UK series at least, the economic growth of the early upswing (up to about 1857) was strongly marked, while that of the late upswing was weakly marked (Tables A1, 2.9). In contrast, the "bandwagon" growth of the infant industries of the 1930s, many of which were in the electrical sector, was undoubtedly, as Freeman, Clark and Soete (1982) argue, a highly important factor in maintaining fast rates of economic growth throughout the post-war boom.

The question of the rate of innovation within the post-war period is of considerable interest. Freeman, Clark and Soete (1982 p.52) present a highly important graph of the timing of 195 radical innovations in sectors covering about 60% of UK industry. These, it must be emphasised, are usually innovations within existing broad sectors, rather than sector-creating innovations. Unfortunately, Freeman, Clark and Soete do not discuss the implications of this graph, which is reproduced here as

Fig 2.4. An attempt is therefore made here to provide a preliminary assessment. Firstly, however, the graph, which shows a general slackening of innovation in the late 1960s and 1970s, needs to be placed in theoretical context.

The classic distinction amongst innovations is between product innovations, which develop new consumer products, and process innovations which, although they might be responsible for modifying a product, have their main effects in reducing costs of production.[161] Process innovation, and the diffusion of process innovation, are held to be the main mechanisms behind productivity increases in the long run (which broadly determine the maximum sustainable economic growth rates), while capital deepening (the increase of physical capital per worker) is held to have only a secondary effect.

A high and steady growth rate in the economy requires a flow both of product and of process innovations. Product innovations are required in order to maintain full employment while process innovations are required in order to maintain levels of productivity increase and thus rates of possible economic growth. In general, it might be suggested that there ought to be a positive relationship between the rate of economic growth, seen as an independent variable, and the rate of innovation, whether product innovation or process innovation, but the relationship is complicated, as examination of Fig 2.4 shows. It is, for example, quite possible for a period of fast growth to be one of rapid product innovation, but very slow process innovation; the late 1940s and early 1950s represent a very clear case of this. The favoured interpretation here is that the rate of product innovation responds fairly directly to the prevailing rate of economic growth, but that the time curve for the rate of process innovation is more complicated. For there to be a high rate of process innovation, it is necessary but not sufficient that there should be a high rate of economic growth. An equally critical factor is the specifically *technological* dynamic. In a rapidly advancing technological system, new technologies breed further new technologies, leading to the "bandwagon effect" identified by Freeman, Clark and Soete (1982). It takes time, however, to set the bandwagon in motion; the time series for process innovations in the long boom (Fig 2.4) shows very clearly that there was a definite shortage of radical process innovations in the late 1940s and early 1950s, but that there was a consistent and substantial acceleration of the rate of process innovation throughout the 1950s. By the early 1960s, the rate of process innovation was very high.

In practical terms, this peaking of the rate of process innovation in the late 1950s and early 1960s led to an economic boom of great

magnitude. There were no real structural barriers to the maintenance of full employment, while the new technologies ensured that this was linked to an unusually high rate of productivity growth and in turn rapidly rising real wages. One can suggest that there was at this stage a switch from "austere" full employment to "affluent" full employment. Up to the late 1950s, there was full employment, but ownership of the main consumer durables of the long boom (cars, televisions, telephones, washing machines, etc.) was still confined to a minority. The real wage explosion in the late 1950s and early 1960s meant that ownership of these goods diffused rapidly. Fig 2.3 shows this happening, nationally and internationally, in the time series for car ownership. Similar diffusion curves can be noted in, for example, the markets for telephones and televisions.[162] An important point to note is that from the side of demand, such a consumer boom cannot last indefinitely; the boom is based on a *diffusion* of ownership, and eventually a critical phase will be reached in which the diffusion curve flattens considerably, as saturation of ownership for particular sets of products is reached. The phenomenon of "industrial retardation" which results has been much discussed.[163]

It is perhaps more straightforward to identify the results of a high rate of product or process innovation than to identify the results of a low rate of product or process innovation. In general terms one can suggest that a low rate of product innovation will weaken the possibilities of the expansion of consumer demand into new sectors, and will weaken the forces counter-acting job losses in industries at later stages of the product life cycle. In terms of industrial life cycles, one can suggest that a low rate of product innovation will lead to an "ageing" industrial structure. A low rate of process innovation, or to state it more broadly, investment in new processes, will tend to slow down productivity growth rates, and output growth rates, without necessarily being responsible for any increases in unemployment; the rate of productivity growth affects the natural rate of growth, but also the actual rate of growth to a similar extent, the result being that the rate of growth of employment is statistically independent of the rate of productivity growth.

In a period of slow innovation and rising unemployment, however, it is much more difficult to separate the component effects of product innovation, process innovation and general macro-economic change than it would be under a regime of continuous full employment. If however the rate of investment is adversely affected by the appearance of a regime of slow growth, then one would expect the rate of innovation to decline in the downswing of the long cycle. Fig 2.4 shows that this is indeed the case, with the decline being particularly sharp after 1970. The much noted decline of productivity after 1973,[164] common to all the main

industrialised countries, may be seen in terms of a slowing down of investment and basic process innovation induced by the declining growth potential of the capitalist economies. Clearly such a process is cumulative; the low rate of innovation induced by a declining growth rate is itself a factor likely to retard future growth rates, and to make it more difficult to stage an economic recovery.

It is not clear how much credence should be placed on the apparent sharp recovery in the rate of process innovation in the late 1970s suggested in Fig 2.4. The graph which is being discussed was based on a large scale interview project[165] and reflects the importance that technical experts in the firms involved placed on particular innovations. It is quite possible, and likely, one suspects, that very recent innovations would be evaluated according to their *prospective* significance as much as to their *proven* significance, while past innovations would be tended to be evaluated solely according to proven significance. This factor, which it would be extremely difficult to eliminate in any interview programme, would tend to give an upward bias to the measured rate of innovation in a very recent past. It would be useful to have this issue clarified; one's own suspicion is that the rate of innovation would undoubtedly have shown a genuine increase after the post-1973 recession, but not as sharply as Fig 2.4 suggests.

There is still much work which needs to be done in order to identify with precision the basic relationships, during long cycle upswing and long cycle downswing, between the development of new technical systems, investment, innovation, economic growth and unemployment. With the help of Fig 2.4, at present perhaps the most informative of the several time curves for basic innovation which have been generated, it is possible to suggest an outline of the main technological and economic trends of the post-war boom. During the early stages of the long cycle upswing, in the mid-1930s as well as in the late 1940s and 1950s, the steadily expansionary economic conditions encouraged the development of a significant number of new products. Furthermore, science and technology had reached a stage ("technological surplus") at which it could be virtually guaranteed that there would be enough significant inventions to fill the vacant niches created by economic expansion; there was no need to wait long periods for significant technical bottlenecks to be broken before rapid economic growth could resume. Stage I of the upswing, lasting from about 1932 to about 1950, involves a cluster of basic product innovations, which creates new areas of potential consumer demand. The presence of these new industries, creating new possibilities of consumption, meant that rising income did not necessarily imply a chronic tendency for the proportion of income devoted to consumption to fall, the

spectre which worried Keynes (1936 pp.29-32). The demand for labour after the Second World War was healthy enough to maintain full employment without great difficulty.

Stage I is dominated by the development of lots of new products. At this early stage of development, however, there is still a lot which needs to be learned about how to develop these products, and how to product them more cheaply and effeciently. There are several new industries, therefore, where there is scope for a high degree of process innovations, and several of the technologies of new processes are applicable to a wide range of industries. During this stage, the development of "new technology systems", the aspect of the long cycle emphasised most strongly by Freeman, Clark and Soete (1982), gathers pace. The main disagreement the present suthor has with the emphasis of Freeman et al. is that while Freeman et al. suggest that this bandwagon effect is "the main explanation of the upswing in the long waves" (p.67), it is suggested here that the new technology systems *consolidate* the upswing rather than generate the upswing.

Fig 2.4 shows clearly a strong rising trend through the 1950s in the number of radical process innovations. Stage III, lasting from about 1959 to 1966, occurs when the flow of process innovations is at its peak and is intense enough to raise the growth of productivity to unusually high levels. This is the phase of "big boom"; productivity rises sharply, full employment is maintained, real incomes rise sharply, allowing very rapid expansion in the markets for consumer durables, and, in general terms, "austerity" is replaced by "affluence". Such an intense boom, in which full employment is continuously maintained, is without historical precedent; previous booms of such intensity had generally been associated with the large scale uptake of labour during a period of high unemployment.

The one weakness in the boom was precisely the transition from austerity to affluence, which caused such a rapid acceleration in the diffusion of new consumer products as to undercut the possibilities of further market expansion. One can only sell cars, televisions, telephones, washing machines, etc., to new consumers for a certain period of time before the market becomes saturated; after that it is necessary to seek new products. It is difficult, however, to find new products to compete with the advanced consumer products, continually incorporating ever newer technology, which are already on the market. As a result the rate of basic product innovation fades away, weakening the potential growth of demand for industrial products. There is still a high rate of process innovation in the industries of the long boom, but as the expansion of demand weakens, the incentive to innovate, whether in terms of new

products or new processes, weakens. The sharp downturn of the rate of innovation in the early 1970s (Fig 2.4) shows that the long cycle downswing is full under way.

2.8 Prices and the Long Cycle

The analysis in this thesis of critical transitions in the course of the long cycle has concentrated mainly on the lower turning point, the slump, rather than on the upper turning point. This is largely a result of the current direction of research having been prompted by the practical question of the economics of slump, although even from a different historical perspective it might well still seem appropriate to suggest that a theory of the long cycle necessarily requires a theory of slump, and that a theory of slump necessarily requires a theory of the long cycle. The question of the transition from the upswing to the downswing of the long cycle has perhaps been neglected more than it should have been. One can tentatively suggest, however, that towards the end of the long cycle upswing, the unhampered forces of economic expansion produce a substantial boom, as in the early 1870s, the early 1910s, or the boom of affluence of the early 1960s. In this boom, the forces of expansion reach their zenith, and having done so start to wane. Market saturation, amongst other factors, starts to become a significant problem; there is a danger, in this post-boom phase, that attempts to increase production will tend to increase over-production. A more depressive business climate then sets in. The economic depression does not clear spontaneously, but on the contrary tends to become more intense, and eventually to lead to a slump.

The analysis of the transition from upswing to downswing could be left, for the time being, at this rudimentary stage, were it not for the important practical question of inflation. Fig 2.5 shows that the period between the mid-1960s and the early 1980s was one of high rates of inflation, sandwiched between periods of more modest inflation; there is an obvious indication of a long cyclical component to the recent price inflations. The situation is complicated, however, by the fact that prices have generally tended to *fall* during earlier long cycle downswings, various post-war hyperinflations excepted. It is an important theoretical question to establish why these contrasts between different long cycle downswings should exist.

It has historically generally been the case that periods of prosperity have been marked by rising prices, while periods of recession have been marked by falling prices.[166] The rise in prices during a period of prosperity may be conveniently described as "classical inflation". Periods of inflation may be prolonged, but under "classical" conditions, the rise in prices during inflationary eras has generally been counteracted by the degree of fall in prices during a deflationary period, so that over a period of several centuries up to the mid-20th

century the price level has been fairly stable in the long run, even if shorter-term fluctuations have been considerable; the British price index of 1913 matched that of 1670, 1710, 1772, and 1880 for example (Fig. 2.6). Under a "classical" system rising prices are generally favourable for production, in that they allow for increasing profit margins between the time of commencement of production and the time of sale, while falling prices make the conditions of production less favourable, as profit margins are falling.

The variations in the price level have been regarded as particularly significant by early long cycle theorists. van Duijn (1983)[167] suggests that the early emphasis placed on prices can largely be attributed to long-term series on prices being available much earlier than long-term series on, for example, industrial output. Thus, the first comprehensive historical indices of British industrial output were not developed until after the Second World War (Hoffman 1955), while the methods for producing national accounts statistics were developed not much earlier.[168] In effect, early long cycle theorists were forced to use primarily "monetary" series (prices, interest rates, etc.), rather than "real" series. As a result, the statements of the course of the long cycle presented by the early writers tended to concentrate more on changes in the price level, here regarded as secondary, rather than on systematic disequilibria in the growth process operating over long periods of time, here regarded as of primary importance. In general, periods of long cycle upswing have been periods of inflation, while periods of long cycle downswing have been periods of falling prices. This is not to suggest, however, that the 50 year long cycle has *dominated* the movement of prices. Inspection of Fig 2.6 suggests instead that the main recent breaks in trend have been in the 1740s (from falling to rising price trends), with later reversals in the 1810s and 1890s, and that changes of price regime within the long cycle have generally been less marked.[169]

Changes in the price level within the business cycle, as opposed to the long cycle, are highly important. Under "classical" conditions, prices tend to rise during cyclical upswings and to fall during cyclical downswings, whether the longer-term trends are towards rising or falling prices. Such "classical" conditions may be regarded as having existed until the mid-1960s, even though the period between the Second World War and the mid-1960s was one of persistent inflation. The critical point in the post-war boom was that with the capitalist states adopting counter-cyclical policies during the recessions of the long boom, the recessions never became severe enough to reverse the general inflationary trends. It needs to be emphasised, however, that the inflations involved, although persistent, were mild, with the rate of inflation for

a given unemployment rate being roughly similar in the Keynesian and pre-Keynesian eras. This point will be examined further in the context of a discussion below of the Phillips curve, the historical curve linking rates of inflation with rates of unemployment. The fact that this curve remained stable from the 1860s up to the mid-1960s[170] suggests that the economy had remained in a regime of classical inflation throughout, with the exception of war years.

The transition from upswing to downswing resulted in a dramatic change in the relationship between the rate of inflation and the business cycle. After 1968, prices tended to rise during cyclical upswings and to *rise even faster* during cyclical downswings; the process of inflation became concentrated in the recessions, contrary to earlier experience. This form of inflationary experience may be termed as "stagflation",[171] a portmanteau word indicating stagnation and inflation.

The transition from classical inflation to stagflation at the upper turning point of the most recent long cycle is to be regarded as a fundamental shift in the dynamics of the capitalist economies. The rates of inflation involved were severe, generally between 10% and 25% in the UK case, rather than the 3% average of the post-war boom. These high rates of inflation, far from stimulating production, tended to depress production, as industrial costs escalated. Under conditions of stagflation, the long cycle downswing becomes a period of rapidly rising prices, while in any subsequent long cyclical upswing price rises are moderated. A noticeable feature of the last few years has been that rates of inflation have fallen to those of the early 1960s in the advanced industrialised countries, a fall in inflation which even the UK economy has shared in. This would appear to be a distinctive feature of a post-slump recovery under a regime of "stagflation".

Whether such a regime is likely to persist during the whole of a long cyclical upswing is open to debate. The author's own tentative projection is that the stagflationary form of inflation is likely to be present in any long cyclical upswing prior to the attainment of full employment, so that the rate of inflation increases during any recession, and in any long cyclical downswing, but that a regime of classical inflation might reappear during periods of full employment. What can be stated with more certainty is that in a regime of stagflation the proper way to keep inflation under control is not to deflate the economy, the normal recipe under a classical regime, but on the contrary to attempt to generate *sustainable* economic expansion. In terms of the formulation of practical economic policies for the late 20th century, this is perhaps the most important single argument in this thesis. It is being suggested that it is useless, and indeed highly counter-productive, to attempt to

squeeze inflation out of the economy by squeezing the economy, the recipe followed in the early 1980s. It is far more important to bolster the productive structure of the economy, which will necessarily involve the operation of a well-formulated industrial policy, in order to help resolve the conflicting demands over a weakened resource base which fuel inflation under recessionary conditions.

The forces behind stagflation are fairly novel, as shown by the non-appearance of persistent price rises in earlier long cyclical downswings (hyper-inflations and war-time inflations excluded). A set of factors present in the 1960s, but not in the 1870s or 1920s, needs to be invoked. The important *general* principle here is that production relations have become far less atomised in the late 20th century, and that wage levels and prices for individual products (as opposed to the general price level) are increasingly set by large organisations (large employers, large trade unions, the state) rather than by small scale employers and weakly unionised employees in a competitive market. The lower degree of atomisation of economic decision making has enabled major power groups to resist to some extent adverse trends in the economy, but in such a way as to force up the general price level. Trade unions can to a large extent force through wage increases to counteract inflation, and to a lesser extent force through wage increases to counteract a deceleration en economic growth, while producers can raise prices to offset adverse conditions of profitability. A substantial deceleration in growth in an oligopolised economy tends to increase the pressure on economic resources and to force a substantial rise in prices, while a substantial deceleration in growth in an atomised economy, in which organised resistance to adverse economic conditions is more difficult, tends to weaken the position of producers and workers to such an extent that prices fall. This, however, is a highly generalised form of explanation; a more detailed examination of the 1960s is required.

The period from the late 1940s to the mid-1960s was one of steady growth and full employment in all Western European economies. This generally expansionary climate would have been internalised in negotiations over pay and conditions of work, in such a way that, for example, a steady 4% growth rate would allow real wages and real profits each to grow by 4% per annum without any intensification of overt class conflict. If such growth rates persist for nearly 20 years, and indeed are even enhanced in a boom in the late upswing, future negotiations over conditions of work and pay will tend to be based on the assumption of a continuation of these high growth rates, even if economic growth has in reality slowed down, as in the recession of the mid-1960s. If growth stands at 2% in any particular year, but capital and labour (and

also the state) attempt to extract from the economy what they would have accepted as their due with a 4% growth rate, obvious problems occur. There is likely to be an intensification of overt class conflict, reflected for example in an increasing number of strikes, while an intensification of inflation will be generated by the economic system as a response to increased class conflict over limited resources at a time of slow growth. If total incomes rise from 100 to 104 units a year, whereas total output rises from 100 to 102 units per year, a gap is created which can be filled only by rising prices, a process of inflation in a time of recession. Inflation, recession and the intensification of overt class conflict are all closely linked. This general conclusion has been reached in a series of papers edited by Crouch and Pizzorno (1978) although the primary intention of their research project was to examine the reasons behind the intensification of class conflict, industrial and otherwise, in Western Europe since 1968 rather than to examine the question of inflation.[172]

Before discussing further why the intensification of industrial militancy and the start of stagflation can be dated at 1968 rather than at the long cycle turning point of 1966, two important points concerning the cyclical nature of inflation need to be made. If the general thrust of the above argument is correct, and modern inflation results from the increase of production in the economy being insufficient to meet the continuing pressures for wages, profits and state expenditure to increase, then there is the implication that inflationary pressure will be stronger during a recession than during a cyclical upswing; the faster expansion of the cyclical upswing will tend to *offset* inflationary pressures rather than, as mainstream economic theory would suggest, to *increase* inflationary pressures. Table 2.5, based on UK experience, shows that inflation rates have consistently been higher during recessions than during recoveries; this general experience is shared by other advanced industrialised countries.

The picture so far presented is basically that of a single business cycle with moderate ("classical") inflation during the upswing but a higher rate of inflation during the recession. If however a succession of degenerative business cycles, as in a long cycle downswing, is considered, the possibility of an inflationary *spiral* occurs in which the average rate of inflation tends to increase through successive business cycles. This is because target levels of wages, profits and state expenditure are set to take into account not just the rate of growth in the economy, but also the current rate of inflation. If for example the economy is growing at 3% while the rate of inflation is expected to be around 7%, then the target wage increase to maintain

the share of wages in the national income would be closer to 10% than to 3%. The high background rates of inflation would tend to imply the continuation of high rates of inflation into the future, with the degree of intensification or otherwise of inflation from this base level depending in part on the strengths of cyclical upswings or recessions. External price shocks, very prominent in the early 1970s in oil and in other raw materials, may be capable of providing a substantial extra twist to the inflationary spiral.

The 1966-67 recession was the last recession in which the rate of inflation fell (Fig 2.5); by the time of the next recession (1970-72) a stagflationary regime was clearly in place. The earlier recession followed a prolonged period of rapid growth and relatively high inflation throughout the main industrialised countries. Soskice (1978 p.233) notes that Italy, France, West Germany and the UK all were forced to adopt policies to counter the problems of inflation and the balance of payments difficulties during the period between 1963 and 1966, while a reduction of the share of profits in national income was another aspect of the boom. Soskice suggests that the reactions to this boom which took place in the recession of the mid-1960s helped create a climate of intensified industrial conflict in several countries. This reaction could be seen in part in attempts by employers to cut unit labour costs and in part by various actions of the state. Crouch (1978 pp.210-211) (not the present author) emphasises the implications of considerably increased taxation in the UK through this period, which resulted from the contradictory pressures of attempting a heavy public spending programme while undertaking deflationary budgets in order to restore the balance of payments. The increased tax take severely undermined the pay advances of the low paid and led to considerable increases in militancy during the late 1960s, with unofficial strike action increasing considerably. Different western European countries showed differences in detail in the development of industrial militancy, but the national case studies presented in Crouch and Pizzorno (1978 volume 1) all show a general pattern of boom ending in the mid-1960s, a sharp recession in the mid 1960s with increased pressure on the workforce, and a sharp increase in industrial militancy in 1968 and 1969.[173] The number of working days lost per annum in strikes in the late 1960s was about five times the number of days lost in the early 1960s in the UK, Belgium and Italy,[174] with other western European countries also showing a tendency to strike-proneness.

The general picture which can be presented of the second half of the 1960s is of a recession in which boom-tired employers and governments attempt to restructure the economy in favour of profits and macro-economic

stability, followed by an upswing in which increasingly militant labour attempts to compensate for the ground lost in the recession. As far as wage demands are concerned, it is emphasised that it is *not* being argued that the workers were greedy and making excessive demands (the "conventional" wage-push theory)[175] but rather that the capitalist economy had become unable to meet even relatively moderate wage demands in the context of a deceleration of economic growth. Crouch (1978 p.211) notes that

> "It is .... possible to interpret the wage explosion and subsequent high plateau of pay settlements in terms of an attempt by workers to protect their existing standard in life, and perhaps to secure continuous but minor advances in it .... In the context of price increases, devaluations, freezes and increasing taxation ...., expectations of a constantly improving real standard of life would not themselves need to have increased to generate the dramatic increase in demands for money wages which occurred."

The cyclical behaviour of the rate of inflation through the 1970s and early 1980s is complicated when examined in detail, but the dominant tendency was for the rate of inflation either to increase or to remain high during recessions (1970-72, 1974-76, 1979-81) but to decrease substantially during recovery phases (1976-79, 1981 to date). The one exception to this was the economic recovery in 1972 and 1973 in which the advanced industrialised countries reflated simultaneously in order to correct for years of slow growth, greatly increasing demand for raw materials and certain other commodities, and thus generating a commodity price boom as the output of these commodities could not be expanded sufficiently quickly to meet the increased demand. This, as Cairncross and McRae (1975) note, caused substantial inflation in the advanced industrialised countries. At first sight, the situation of this inflation during a cyclical upswing might suggest an extreme element of "classical inflation" rather than of stagflation. The fact that this inflation ultimately resulted from an attempt by powerful interest groups (in this case, the advanced western states) to protect income growth at a time when the structural possibilities for sustained income growth were fading suggests, however, a strong link with the stagflationary process.

The approach to the recent inflation outlined above differs considerably in structure from mainstream approaches, whether neo-Keynesian or monetarist. The neo-classical mainstream approaches explain the wage level, and wage inflation in terms of economic *exchange*, thus the interaction between the supply and demand for labour. Questions of *production* and of the *distribution* of income are treated as at best

secondary. In the analysis of stagflation presented here, the emphasis is strongly on the aspects of production and distribution; the level of production sets overall income levels, while the struggle over distribution broadly sets wage levels. Under current conditions the level of unemployment is regarded as being only of secondary importance in wage setting, although undoubtedly it remains the case that severe recessions under a regime of "classical inflation" in which the defensive strength of workers is low can lead to severe wage cutting.[176]

For a long time, the central foundation of mainstream theory on the relationship between inflation and unemployment was the Phillips curve. Phillips (1958), arging that the rate of wage inflation was an indicator of the relationship between supply and demand in the labour market, suggested that there was an inverse relationship between the rate of wage inflation and the rate of unemployment. In analysing historical data for the UK from 1861 to 1957 he derived the historical relationship

$$y + 0.900 = 9.638x^{-1.394}$$

where y is the rate of wage inflation and x is the rate of unemployment. This curve visually suggests that any rate of unemployment below about 1¼% is associated with an exceptionally rapid increase in wage rates, while between about 1¼% and 4% there *appears* to be a clear trade-off between wages and inflation, and at 5½% unemployment wage inflation reaches zero. Various other writers, notably Lipsey (1960 p.4) have provided modified versions of the Phillips curve, but the basic inverse relation still remained. Lipsey (1960 p.26) suggests, however, that the figures suggest that wages have chased prices more in the mid 20th century than in the 19th century, and were less dominated by the supply and demand for labour.

The period covered by this analysis was dominated by classical inflation (prices rising in the upswing and falling in the downswing) rather than by stagflation. Insofar as the Phillips curve remained stable until about 1968 the period to 1968 may also be regarded as one of "classical inflation" even though the rate of inflation was persistently high as a result of the persistence of full employment.

An important feature of the Phillips curve is that it is a historical curve, representing past outcomes, rather than a prospective curve, giving the range of future options from a particular situation. One could not, for example, conceive of an economic situation where the conditions of 1930 (16% unemployment, 0% wage inflation) and 1955 (1% unemployment, 7% wage inflation)[177] represent realistic *short-term* policy alternatives, even though both these points are data for the Phillips curve. The curve giving the short-term pay-off

between unemployment and inflation is therefore not the same as the historical Phillips curve. One would expect that the short term Phillips curve would have a steeper gradient than the long-term Phillips curve at any point (Fig 2.7), even though the short-term curve is in principle unknowable. At any given stage of the business cycle, one could reflate, giving a higher rate of wage inflation than if the final rate of unemployment had been reached spontaneously, or one could deflate, giving a higher rate of unemployment than is necessary for a particular stage of the business cycle.

It is theoretically unsound, therefore, to conflate the short term and long term Phillips curves, even though in practice the difference would not be noticed under full employment conditions. Fig 2.7 suggests however that there are likely to be considerable differences between the historical Phillips curve at less than full employment. Friedman (1968) provided an important critique of the use of the Phillips curve as an instrument for predicting outcomes of government policies when he suggested that any attempts to make the economy run as though the long-run curve had the same properties as any short-term trade-off would lead to a situation in which the Phillips curve would progressively shift upwards and to the right. Friedman suggested furthermore that any attempt to reduce unemployment below its "natural rate" (that consistent with stable prices) would produce an inflationary spiral which would continue to get worse the longer it took to initiate remedial action. Thus, in Fig 2.7, any attempt to shift the position of the economy from X, to X_2 on the long run Phillips curve would instead shift the economy to a position such as Y_2. Furthermore, the long run Phillips curve would have shifted to the right, requiring a policy of deliberate deflation to recover its previous position.

Friedman's argument should not be taken lightly; soon after his presidential address to the American Economic Association (Friedman 1968) inflation and unemployment rose substantially and simultaneously. It is accepted, along with Friedman, that the attempt to use the Phillips curve to force the economy to product what it would not do spontaneously is likely to shift the Phillips curve to the right.[178] The *inversion* of the cyclical form of the Phillips curve, the shift from classical inflation to stagflation, is another matter; monetarist analysis does not indicate why inflation should be faster in recessions than in cyclical upswings. In a monetarist analysis, the inflationary spiral starts when allegedly ill-judged state meddling in the economy no longer allows stable prices to be maintained; the possibility that capitalist production may itself be cyclically deeply unstable, regardless of the activities of the state, is not entertained by monetarists.

The dominant economic features of the period from the mid-1960s to the early 1980s are the ending of the long boom, and the consequent development of a series of recessions, becoming successively deeper. Unemployment rises. The rate of inflation also tends to rise. Variations in the rate of inflation are neither the cause nor the effect of variations in the rate of unemployment; instead high inflation and high unemployment are each the effects of the deeper process of the deceleration of capitalist production.

If this argument is accepted, then it would seem to be futile to view the statistical movements of unemployment and inflation as being mechanically related without reference to underlying conjunctural shifts. This applies in theoretical terms as well as in statistical terms. Fig. 2.5 shows clearly the naivety of the approach which suggests that large increases in unemployment tend to bring down the rate of inflation; increasing unemployment, an indicator of a weak production base, tends to be associated, under a stagflationary regime, with rising inflation. It is only when conditions for production start to improve that the rate of inflation declines. In cyclical terms (Fig 2.5) the series for inflation tends to lead the series for unemployment; inflationary pressure builds up during the later stages of the cyclical upswing as the boom brings about various forms of scarcity. This inflation itself acts as a signal of impending problems in the economy, and of dangerous increases in the cost of production. An inflation rate of 10% is a strong sign that unemployment will soon start to rise significantly (Fig 2.5). It depends on a wide range of economic and institutional factors whether inflation will subside, maybe even with falling prices, when recession sets in. If the productive base is weak and vulnerable to recession, and if strong inflationary expectations are incorporated into a wide range of economic activities, then the onset of recession will tend to perpetuate inflation rather than remove it.

Note (August 1989)

During the earlier preparation of the text, comments which concerned themselves with long term movements in prices have been based on a graph presented in Deane and Cole (1967, endpiece) and reproduced elsewhere, for example van Duijn (1983 p.78). This series appears to show a high degree of price stability between the late 18th century and the early 20th century. In the preparation of Table 2.6, however, it was found that some questionable data splicing in the Deane and Cole series led to considerable overstatement of 18th century price levels with respect to later price levels. According to the series reproduced in Table 2.6, prices increased by 31% (0.1% per annum) between 1701 and 1913, rather than remaining stable, as suggested by Deane and Cole.

The main reason for bias in the earlier series was that in compiling a "Schumpeter-Gilboy index" for prices up to 1801, Deane and Cole gave equal weight to consumer goods and producer goods, which gave a 68.8% increase in prices between 1790 and 1801, a critical overlap period between series. However, the Gayer, Rostow and Schwartz series, reproduced in Deane and Cole's graph, indicates a 74.3% increase, while the Lindert and Williamson series, as used in Table 2.6 (and like the other series cited, available in Mitchell 1988) shows a 77.9% increase. Clearly the weighting of consumer and producer prices carried out by Deane and Cole on the Schumpeter and Gilboy series has inadvertently damped down the true cyclical variation in prices. For Table 2.6, consumer goods have been weighted three times as heavily as producer goods in compiling an index from the Schumpeter-Gilboy series. This produces a 76.6% increase in average prices between 1790 and 1801, more in accordance with the two alternative series. The data splicing was completed by comparing arithmetic means for each series in the 1790-1801 period.

It would seem that in the pre-Keynesian era the overall price regime was one of slight long term inflation, with considerable cyclical fluctuations, rather than one of static long term prices with cyclical variation. The proper interpretation of this is of course open to debate.

2.9 Before the Industrial Long Cycle

Until a very late stage of editing, this chapter was titled "the Economic Long Cycle." Such a title is not fully satisfactory, however, and the term "industrial long cycle" is preferable. When analysing the British experience from 1815 to the present day, it does not make much *practical* difference whether the 50 year Kondratieff cycle is described as an economic long cycle or an industrial long cycle, but when the analysis is extended to non-industrial countries or to earlier times, it is important to make a distinction between the more specific term "industrial," and the more general term "economic." The 50 year long cycle is primarily a product of the *industrial* era. This long cycle is generated by systematic variations in the pace of development in the industrialised countries, but also sets the pace of development of non-industrialised countries within or attached to the industrial capitalist world system.[179] The level of demand for primary products within the industrialised countries is a fundamental factor setting the level of income in non-industrialised countries; a downswing in the industrialised countries sets in motion a possibly even sharper downswing in non-industrialised countries, the primary mechanism often being not so much a reduction of physical output in these countries, but rather a decline in the price of non-industrial output relative to industrial output and, after 1973, oil. There is also the likelihood that economic crisis in the non-industrialised countries, and the weakly industrialised countries, will tend to persist even after the economy has stabilised in the advanced industrial countries; the upswing starts rather later in the less industrialised countries. Two examples may be cited. In the late 1980s, there is still widespread economic crisis in the third world, with mass starvation in Africa, and a heavily publicised international debt crisis. Nearer to home, but further back in time, the Irish famine of the 1840s was at its most acute at precisely the time when the British economy was undergoing a vigorous post-slump revival.

There is clearly much more which needs to be said about the modern world economic system and the industrial long cycle. The theoretical discussions of this chapter so far have been based primarily on the experiences of the metropolitan industrial economies, and this is indeed where long cyclical fluctuations originate. The 50 year pulse of the industrial economies has been transmitted throughout the capitalist world system during the industrial period. What, however, was the pulse of economic development before the industrial period?

There are two main issues to be considered here. Firstly there is

the question of when the series of 50 year long cycles started, and secondly there is the question of the existence or otherwise of long cycles with an even greater wavelength. There has been much fruitful work on pre-industrial economic development using the concept of the 300 year long cycle comprising an A-phase of expansion and a B-phase of relative stagnation. Wallerstein (1979) suggests the following sequence:[180]

A-phase	1100 - 1250/1300	(expansion)
B-phase	1300 - 1450	(decline)
A-phase	1450 - 1600	(expansion)
B-phase	1600 - 1750	(stagnation)

This periodisation has been used, by Wallerstein (1974, 1980 and other works) in particular, to create a framework for the concrete analysis of the historical development of the capitalist economy; relatively little attention has been given to the question of the internal structure of the 300 year long cycle. It is, however, doubtful whether one could point to such detailed structures as a slump followed by a definite turning point, as is possible for the 50 year industrial long cycle. Some thought was given to the possibility that the Black Death of the mid-14th century, which caused population in England to drop by perhaps a third,[181] and which had equally devastating effects in the rest of Europe and elsewhere,[182] might be regarded as a slump-like turning point. This would of course necessitate a re-timing of the A- and B-phases. This possibility was rejected, even though there appears to have been quite a sharp economic rebound after the Black Death, since it would appear to have been the case that the economy was relatively depressed in the first half of the fifteenth century, as in the first half of the fourteenth century.[183] The Black Death, it seems, had an important impact on economic time series, without itself causing a switch from a B-phase to an A-phase.

It would seem that the 300 year pre-industrial long cycle is less sharply delineated than the 50 year industrial long cycle. The pressure of economic expansion is less strongly marked in a pre-industrial society than in an industrial society, with the result that the onset of crisis is delayed; if an economy is geared to slow growth, it will reach the limits of a particular stage of expansion more slowly than an economy geared to fast growth.[184] Once the upper turning point has been reached, furthermore, the development of crisis is probably a longer drawn out affair in a pre-industrial world economy than in an industrial world economy.

Assuming that the 300 year long cycle is defunct, and that the period since the industrial revolution has not been merely the A-phase

of such a cycle, there is the implication that at some stage the 300 year long cycle faded away to be replaced by a 50 year long cycle. There are some quite complex questions of historical analysis to be considered if the origins of the 50 year long cycle are to be uncovered.

The first question is whether the 50 year long cycle is a *capitalist* long cycle or an *industrial* long cycle. Undoubtedly such a long cycle is best developed under *industrial capitalism*, but did the cycle also exist under pre-industrial capitalism? Empirically, there are some Kondratieff type features in the middle half of the 18th century, prior to the Industrial Revolution. Statistics of trade, for example (Fig 2.8), show a depression of British foreign trade in the 1730s, intensifying in the early 1740s, and followed by a sharp upturn in trade thereafter. This expansion continued until the American War of Independence, when trade dropped sharply, only to increase even more sharply thereafter as the Industrial Revolution took off. The time series shown for trade in Fig 2.8 so clearly matches that which might be expected from the time profile of a 50 year long cycle that there is at least some indication of a 50 year long cycle prior to the Industrial Revolution. A closer analysis of the period is required.[185]

This of course does not preclude the possibility of a 50 year long cycle starting in the late 17th century; there is scope for further investigation, even if the results turn out to be negative.

The transition to capitalism, it can be suggested, brought about a more vigorous process of economic development, with both an increased pace of structural change and an increased tendency to crisis. It is notoriously difficult to draw a dividing line between capitalism and non-capitalism, or between capitalist processes and non-capitalist processes; one can tentatively suggest, however, that at some stage when the capitalist system was firmly in place in at least some parts of Europe, the 50 year long cycle made its first appearance. This cycle was presumably weak in its early stages, before the Industrial Revolution, but once the transition from pre-industrial capitalism (commerce) to industrial capitalism (commerce plus manufacture) had been made, the 50 year long cycle became very firmly established.

Attention now turns from broad historical trends to specific features of the economic geography of modern Britain.

Note: Some of the author's views expressed in this section have since changed considerably as a result of the evidence discussed in chapter 9.8 below.

Table 2.1 Annual Growth Rates in Four Major Industrial Economics, 1830-1984

Year ending	UK	France	Germany	USA	Year ending	UK	France	Germany	USA
1831	4.5	*(1.1)*	-	14.0	1862	0.0	*(6.4)*	5.6	-3.7
1832	-0.5	*(9.5)*	-	5.2	1863	1.0	*(5.0)*	6.6	2.7
1833	0.5	*(1.0)*	-	9.0	1864	1.5	*(-0.8)*	0.3	-8.9
1834	4.1	*(-1.3)*	-	5.6	1865	2.9	*(3.0)*	1.2	5.6
1835	5.6	*(6.0)*	-	8.9	1866	-0.1	*(0.2)*	1.7	11.5
1836	3.7	*(-1.9)*	-	5.5	1867	1.4	*(-6.7)*	0.0	6.5
1837	-1.5	*(4.5)*	-	2.6	1868	3.5	*(12.4)*	10.0	6.1
1838	5.8	*(1.2)*	-	-1.2	1869	3.0	*(4.2)*	-5.8	9.9
1839	(4.7)	*(-7.9)*	-	5.9	1870	7.8	*(-12.9)*	6.7	10.5
1840	(-2.9)	*(14.1)*	-	1.5	1871	6.4	*(3.6)*	4.1	6.9
1841	-2.0	*(1.2)*	-	1.2	1872	-0.7	*(7.6)*	10.0	6.9
1842	-2.0	-0.6	-	2.0	1873	0.0	*(-6.2)*	3.3	6.7
1843	1.5	*(1.4)*	-	2.6	1874	6.0	*(13.2)*	7.8	2.0
1844	6.2	*(5.9)*	-	7.7	1875	1.4	*(4.3)*	-1.2	0.8
1845	5.4	*(-4.0)*	-	5.6	1876	1.1	*(-3.9)*	-0.9	3.3
1846	6.6	*(-2.2)*	-	6.3	1877	0.9	*(2.2)*	-0.9	4.3
1847	0.7	*(15.1)*	-	4.0	1878	0.7	*(-2.0)*	5.3	13.5
1848	1.2	*(-5.2)*	-	12.0	1879	-1.8	*(-3.1)*	-2.8	11.2
1849	1.7	*(3.9)*	-	-0.1	1880	7.7	*(6.0)*	-2.9	9.2
1850	-1.0	*(0.3)*	-	7.7	1881	-0.1	*(3.0)*	3.7	5.7
1851	4.0	*(-1.5)*	3.2	7.4	1882	1.7	*(3.7)*	-0.8	-6.6
1852	1.8	*(5.3)*	5.2	6.0	1883	4.4	*(-2.0)*	7.2	13.0
1853	3.8	*(-5.8)*	-4.4	9.1	1884	-0.6	*(-2.4)*	3.7	1.1
1854	2.7	*(5.4)*	3.1	1.8	1885	-0.2	*(0.8)*	3.3	3.5
1855	2.7	*(-1.2)*	-5.9	1.7	1886	1.1	*(1.3)*	2.9	5.8
1856	3.9	*(4.7)*	12.0	3.4	1887	4.8	*(0.3)*	1.7	6.4
1857	2.2	*(8.2)*	2.5	-7.4	1888	1.6	*(-0.6)*	5.2	1.9
1858	0.7	*(5.2)*	1.8	9.2	1889	2.0	*(1.6)*	2.5	8.7
1859	2.1	*(-7.6)*	1.4	4.2	1890	1.4	*(2.8)*	4.8	7.3
1860	1.5	*(5.1)*	11.3	-1.9	1891	3.4	*(1.8)*	-3.4	4.6
1861	5.1	*(-3.6)*	-4.4	-6.8	1892	-1.5	*(2.8)*	5.8	9.6

Year ending	UK	France	Germany	USA	Year ending	UK	France	Germany /W.Ger.	USA
1893	-0.5	*(-2.5)*	7.8	-4.8	1926	-4.1	4.4	-0.7	5.9
1894	5.3	*(7.2)*	-1.3	-2.8	1927	6.9	-3.5	14.0	-0.1
1895	3.0	*(-2.1)*	6.2	12.0	1928	1.6	5.9	1.6	0.6
1896	4.6	*(3.1)*	4.0	-2.1	1929	2.4	10.5	-4.2	6.7
1897	0.2	*(-1.8)*	4.1	9.5	1930	-0.1	-1.3	-4.7	-9.9
1898	5.6	*(5.5)*	6.0	2.2	1931	-5.1	-4.3	-10.9	-7.7
1899	5.2	*(5.2)*	0.1	9.0	1932	-0.3	-7.0	-4.9	-14.8
1900	-1.8	*(1.8)*	-1.1	2.8	1933	1.9	0.5	13.4	-1.9
1901	4.0	*(-3.4)*	-0.7	11.4	1934	6.7	-2.0	10.0	9.0
1902	0.6	0.0	2.0	0.9	1935	3.9	-4.3	12.6	9.9
1903	0.0	2.9	8.7	4.9	1936	3.1	-1.1	9.7	13.9
1904	0.6	8.1	5.3	-1.2	1937	3.8	3.5	10.5	5.3
1905	2.1	-1.1	2.6	7.4	1938	2.9	-1.0	11.2	-5.1
1906	2.4	1.1	2.2	11.6	1939	3.2	7.1	*(8.0)*	8.6
1907	0.3	2.6	4.2	1.6	1940	13.3	-17.4	*(0.7)*	8.5
1908	-2.8	0.7	0.5	-8.2	1941	5.5	-20.8	*(6.4)*	16.1
1909	3.3	3.2	2.4	16.6	1942	0.6	-10.5	*(1.4)*	12.9
1910	3.4	0.0	-0.1	2.8	1943	1.7	-5.0	*(2.0)*	13.2
1911	2.6	4.2	4.6	2.6	1944	-4.6	-15.5	*(2.6)*	7.2
1912	-0.0	9.3	4.6	5.7	1945	-6.2	8.4	*(-30.0)*	-1.7
1913	5.3	0.0	1.0	0.9	1946	-0.6	52.2	*(-42.9)*	-12.0
1914	0.6	*(-5.6)*	*(-14.8)*	-4.4	1947	-2.1	8.3	*(22.8)*	-0.9
1915	8.6	*(-7.9)*	*(-5.0)*	-0.9	1948	2.9	7.3	*(18.5)*	4.5
1916	-0.3	*(-4.3)*	*(1.0)*	7.9	1949	2.8	13.1	*(16.5)*	0.1
1917	-0.1	*(-3.0)*	*(0.1)*	0.7	1950	4.0	7.6	*(14.4)*	10.2
1918	-2.0	*(-5.3)*	*(0.2)*	12.3	1951	2.7	5.9	10.7	8.0
1919	-9.1	*(-1.6)*	*(-11.8)*	-3.6	1952	-0.6	3.2	8.3	3.0
1920	-6.6	*(8.8)*	*(8.7)*	-4.4	1953	4.6	2.7	7.5	4.4
1921	-5.0	-7.4	*(11.3)*	-8.7	1954	3.8	4.5	8.1	-1.4
1922	3.6	21.6	*(8.8)*	15.8	1955	3.1	5.1	10.8	7.5
1923	3.5	8.2	*(-16.9)*	12.1	1956	1.8	5.8	6.9	1.9
1924	3.1	15.8	*(17.1)*	-0.2	1957	2.0	5.0	5.4	1.5
1925	5.4	0.8	*(11.2)*	8.4	1958	0.5	2.8	5.2	-1.1

Year ending	UK	France	W.Ger.	USA	Year ending	UK	France	W.Ger.	USA
1959	3.8	2.7	6.9	6.0	1972	2.1	5.9	3.7	5.4
1960	4.7	7.1	8.8	2.3	1973	7.6	5.4	4.9	5.5
1961	3.4	5.4	10.4	2.5	1974	-0.9	3.2	0.5	-0.7
1962	1.2	6.8	4.0	5.8	1975	-0.9	0.2	-1.8	-0.7
1963	4.1	5.8	3.4	3.9	1976	3.7	5.2	5.2	4.9
1964	5.5	6.6	6.7	5.3	1977	1.2	3.1	3.1	5.2
1965	2.5	4.7	5.6	5.9	1978	3.5	3.8	3.1	4.7
1966	2.0	5.6	2.9	5.9	1979	2.0	3.3	4.2	2.4
1967	2.0	4.7	-0.3	2.7	1980	-2.6	1.1	1.8	-0.2
1968	3.1	4.8	7.2	4.4	1981	-1.3	0.3	-0.1	3.0
1969	2.0	8.0	8.1	2.6	1982	2.3	1.6	-1.0	-2.3
1970	2.2	6.0	5.7	-0.2	1983	*3.7*	*0.7*	*1.8*	*3.5*
1971	2.6	5.4	3.2	3.1	1984	*2.2*	*1.5*	*3.0*	*6.5*
					1985	*3.7*	*1.4*	*2.5*	*2.7*

Main sources: Mitchell, 1975 (pp.779-798) and 1983 (pp. 886-897) for pre-1970 data. Italicised figures taken from Maddison 1982, pp.169-177, in cases where gaps exist in Mitchell's data series.
1970-1982: *United Nations Yearbook of National Accounts Statistics 1980, United Nations National Accounts Statistics: Analysis of Main Aggregates*, 1982 (successor to the *Yearbook of National Accounts Statistics*).
1982-1985, International Monetary Fund, *International Financial Statistics*, April 1987. These figures do not fully match the United Nations figures. IMF statistics show 1981-82 growth rates of 1.0% in the UK (instead of 2.3%), 1.8% in France, -0.7% in West Germany and -2.5% in the USA.

Note: These figures are to be treated with caution; see discussion in text, also Tables 2.4, 2.5 and 4.3. In particular, it is suggested (Table 4.3) that UK growth rates between 1918 and 1921, as calculated above, need substantial correction.

Table 2.2 Economic Growth in a Post-Slump Recovery, International Comparisons, 1932-1937

Country	Increase in Industrial Production		Increase in National Product	
	(%)	(% per annum)	(%)	(% per annum)
UK	+ 49.3	+ 8.3	+20.8	+ 3.8
USA	+ 70.3	+11.2	+40.9	+ 7.1
Germany	+100.0	+14.9	+70.3	+11.2
France	+ 4.3	+ 0.8	- 3.5	- 0.7
Italy	+ 49.2	+ 8.3	+17.2	+ 3.2
Netherlands	+ 46.7	+ 8.0	+ 7.7	+ 1.5
Belgium	+ 36.2	+ 6.4	+ 9.8	+ 1.9
Japan	+ 74.4	+11.8	+50.8	+ 8.6

For figures on unemployment, see Table 2.7 below

Sources:

Industrial Production: Landes (1969, p.391), based on League of Nations data.

National product: Mitchell (1975 pp.783-790; 1983 pp.889, 897), Maddison (1982 pp.174-175) for Belgium and Japan.
A weighted average of sixteen advanced industrial economies, calculated from Maddison (1982 p.86) shows aggregate GDP increasing by 29.1%, or 5.2% per annum, between 1932 and 1937.

Table 2.3 Sequences of Business Cycles in the UK, 1881-1982

Trough		Peak		Cycle	
Date	Unemployment rate (%)	Date	Unemployment rate (%)	Period	Sign
		1882	*2.3*		
1886	*10.2*				-
		1889	1.7		+
1892	10.2	1899	1.7	1889-1899	+
1904	7.1	1907	2.8	1899-1907	-
1908	9.5	1913	1.7	1907-1913	+
		1920	2.6		
1921	23.4	1924	9.3	1920-1924	-
1926	14.6	1927	8.7	1924-1927	+ (weak)
1932	23.0				-
		1937	9.9		+
1938	13.2	1939	9.0		+
		1951	1.0		
1952	2.4	1955	1.0	1951-1955	=
1959	3.0	1961	1.3	1955-1961	= (?)
1963	4.0	1966	1.3	1961-1966	=
1968	2.8	1969	2.2	1966-1969	-
1972	4.2	1973	2.2	1969-1973	-
1977	6.9	1979	5.4	1973-1979	-
1982	13+			1979-1982	-

The long cycle, 1932-1982:

$\overset{*}{-}$ (+ + + = = = - - - $\overset{*}{-}$) ....

1932 1982

A star indicates a slump
(It is assumed that had there been peace the 1939-1948 period would have consisted of one constructive and one neutral cycle).

Figures for 1882 and 1886 are annual averages, not individual months. For purposes of comparison, annual averages stood at 2.1% in 1889 and 7.5% in 1893, each being lower than the respective 1882 and 1886 figures.

Pre-1914 figures are trade union figures; later figures are based on the national insurance scheme.

Source: Table A8, and sources cited therein.

Table 2.4 Years in Which U.K. GDP and GNP Growth Rates Differed by 0.4 percentage points or more, 1870-1913

Year	Annual change in GNP	Annual change in GDP
1872-3	0.0	-0.4
1883-4	-0.6	-1.0
1884-5	-0.2	-0.6
1885-6	1.1	0.6
1891-2	-1.5	-1.9
1904-5	2.1	1.7
1907-8	-2.8	-3.5
(Average, 1870 - 1913		
	1.9	1.8

Source: Based on Feinstein 1972, pp.T14-T15

Table 2.5 GDP Annual Changes on Five Measures, U.K. 1920-1938

Year ending	Annual GDP Change				Annual GNP Change
	Output data	Income data	Expenditure data	Compromise estimate	Expenditure data
1921	-12.1	-6.1	-5.8	-8.1	-5.0
1922	7.5	3.7	4.2	5.1	3.6
1923	3.3	3.1	3.2	3.2	3.5
1924	5.0	4.5	2.9	4.2	3.1
1925	3.0	6.2	5.4	4.9	5.4
1926	-2.3	-4.0	-5.0	-3.7	-4.1
1927	8.7	8.4	7.3	8.0	6.9
1928	0.0	1.8	1.9	1.3	1.6
1929	2.6	3.8	2.4	3.0	2.4
1930	-1.6	-0.5	-0.1	-0.7	-0.1
1931	-3.5	-6.3	-5.5	-5.1	-5.1
1932	0.2	1.5	0.7	0.8	-0.3
1933	4.2	3.4	1.0	2.9	1.9
1934	5.4	7.2	6.9	6.6	6.7
1935	4.4	3.4	3.9	3.8	3.9
1936	5.4	5.0	3.0	4.5	3.1
1937	3.8	2.4	4.4	3.5	3.8
1938	-1.2	1.9	3.0	1.2	2.9
(1920-1938 average)	1.7	2.1	1.8	1.9	1.8

Source: Feinstein 1972 p.T19; Table 2.1 above
Maddison (1982) uses the compromise estimate, whereas Mitchell (1975) uses the expenditure series for GNP.

Table 2.6 International Unemployment Rates in the Post-1979 Slump

Country	Unemployment rate (%, annual average)							
	1966	1979	1980	1981	1982	1983	1984	1985
UK	1.5	5.3	6.8	10.4	10.9	*11.6*	*11.7*	*11.9*
Ireland	6.1	10.5	9.1	10.1	12.1	14.7	16.3	17.4
France	1.9	5.9	6.3	7.3	8.1	8.3	9.7	10.2
West Germany	0.7	3.8	3.8	5.5	7.5	9.1	9.1	9.3
Italy	3.9	7.7	7.6	8.4	9.1	9.9	10.4	10.6
Spain	1.0	7.9	9.9	12.1	14.2	16.7	18.8	19.9
Belgium	2.7	8.4	9.1	11.1	13.0	14.0	14.4	13.5
Netherlands	1.0	5.1	5.9	9.1	12.6	17.1	17.2	15.9
Austria	2.5	2.0	1.9	2.4	3.7	4.5	4.5	4.8
Sweden	1.6	1.5	1.4	1.9	2.5	2.8	2.8	2.5
USA	3.8	5.8	7.0	7.5	9.5	9.5	7.4	7.1
Canada	3.6	7.4	7.5	7.5	11.0	11.9	11.3	10.5
Australia	1.5	5.8	5.9	5.6	6.7	9.9	8.6	7.9
New Zealand	0.3	2.4	3.3	4.2	4.6	6.2	5.5	4.3
Japan	1.4	2.0	2.0	2.1	2.3	2.6	2.8	2.7

Source: International Labour Office *Year Book of Labour Statistics* (1976, 1986) supplemented by Sorrentino (1981 p.170) for France and Japan, 1966. Percentage rate for France 1985 estimated by calculating on the basis of figures for numbers unemployed published in more recent issues of the *Bulletin of Labour Statistics*. Figures for Ireland 1980, 1981 from 1983 *Year Book of Labour Statistics* (0.2 percentage points subtracted for continuity).

These figures are based on national official unemployment statistics, filtered through UN definitions, and comparison between national time series needs to be undertaken with care. In particular, UK unemployment rates after 1982 are affected by change in the method of calculation, and are underestimates.

Note, however, a general international tendency for unemployment rates to increase substantially between 1966 and 1979/80, to increase sharply between about 1979/80 and 1983, and then to stabilise. International Labour Office publications also give unemployment rates for third world countries, which are in many cases measured as being substantially lower than in advanced industrial countries. Godfrey (1986 pp.1,30) emphasises, however, that definitions of unemployment applicable to an advanced industrialised country (those not working but seeking work) fail to capture anything like the full problem of third world unemployment; "In the absence of a social security system most people cannot afford to be *both* not working *and* seeking work", Godfrey 1986 p.7, (emphasis in original).

Table 2.7 The Decline of Unemployment, 1932-1951; Advanced Capitalist Economies

Country	Unemployment Rate			Rate of change of unemployment rate (percentage points per annum)		Total change in unemployment rate (percentage points)	
	1932	1937	1951	1932 -1937	1937 -1951	1932 -1937	1937 -1951
UK	15.1	7.7	2.2	-1.5	-0.4	-7.6	-5.5
France‡	(301)	(380)	2.1	n.a.	-0.1	n.a.	-1.7
Germany	17.2	2.7	7.3	-2.9	+0.3	-14.5	+4.6
USA**	22.3	9.1	3.2	-2.6	-0.4	-13.2	-5.9
Australia**	19.1	8.1	1.3	-2.2	-0.5	-11.0	-6.8
Austria	13.7	8.1+	3.5	-0.9	-0.3	-5.6	-4.6
Belgium	11.9	7.2	4.4	-0.9	-0.2	-4.7	-2.8
Canada **	17.6	9.1	2.4	-1.7	-0.5	-8.5	-6.7
Denmark	16.0	11.0	4.6	-1.0	-0.5	-5.0	-6.4
Finland	5.8	2.6	0.3	-0.6	-0.2	-2.8	-2.3
Italy	5.8	5.0	7.3	-0.2	+0.2	-0.8	+2.3
Netherlands	8.3	10.5	3.2	+0.4	-0.5	+2.2	-7.3
Norway	9.5	6.0	1.5	-0.7	-0.3	-3.5	-4.5
Sweden*	6.8	5.1	1.6	-0.3	-0.2	-1.7	-3.5
Switzerland*	2.8	3.6	0.0	+0.2	-0.3	+0.8	-3.6

+ 1938; major fall in unemployment between 1937 and 1938
‡ France: Numbers unemployed ('000s) in 1932 and 1937 (Mitchell 1975 p. 169); percentage rates not available. 1938 percentage rate: 3.7%.
* Non-combatant in the Second World War
** Combatant, but geographically removed from the centres of conflict.

Source: Maddison (1982) pp.206-208. All rates adjusted to standardised (USA) basis.

Table 2.8 The Return to Full Employment, 1932-1951, in Two Non-Combatant Countries, Sweden and Switzerland

Year	Unemployment rate (%), local definitions		Year	Unemployment rate (%), local definitions	
	Sweden	Switzerland		Sweden	Switzerland
1932	22.8 (6.8)	9.1	1942	7.5 (3.8)	1.9
1933	23.7 (7.3)	10.8	1943	5.7 (3.1)	1.4
1934	18.9 (6.4)	9.8	1944	4.9 (2.8)	1.6
1935	16.1 (6.2)	11.8	1945	4.5 (2.6)	1.6
1936	13.6 (5.3)	13.2	1946	3.2 (2.1)	1.0
1937	10.8 (5.1)	10.0	1947	2.8 (1.9)	0.8
1938	10.9 (5.1)	8.6	1948	2.8 (1.9)	0.6
1939	9.2 (4.4)	6.5	1949	2.7 (1.9)	1.6
1940	11.8 (5.5)	3.1	1950	2.2 (1.7)	1.8
1941	11.3 (5.3)	2.0	1951	1.8 (1.6)	0.8

Source: Mitchell 1975 p.171

Unemployment rates are given using local definitions, and refer only to relatively limited sections of the labour force. The rate of unemployment is considerably overstated in comparison with figures in Table 2.7 as a result; see chapter 3.5 for a discussion of this issue in the U.K. context.

Bracketed series for Sweden respresent an attempt to place Swedish unemployment figures on an approximately comparable basis with the international unemployment rates shown in Table 2.7. Figures for 1932-38 and 1950-51 are taken from Maddison (1982 pp.206-208), but no unemployment rates are given for intervening years. Estimates have been made on a basis of linear interpolation, with 10.9% mapping on to 5.1%, and 2.2% mapping on to 1.7%.

Unemployment in Ireland also fell substantially during the war, from 15.6% in 1939 to 10.6% in 1945, without full employment being regained thereafter.

Table 2.9 The Post 1843 Long Cycle: Some Characteristics of Growth

		Growth rate Percent per annum		
		UK	Germany	USA
I	Recovery	(1843-46) 6.1	n.a.	(1843-48) 7.1
II (a)	Early upswing	(1846-57) 2.1	(1850-57) 1.7	(1848-57) 3.2
II (b)	Late upswing	(1857-67) 1.6	(1857-67) 2.5	(1857-67) 2.2
II (c)	Pre-1873 boom	(1867-71) 5.2	(1867-74) 5.0	(1867-73) 7.8
Complete upswing		2.8	-	4.2
Downswing:				
Definition (a)		(1871-86) 1.4	(1874-82)-1.0	(1873-82) 4.7
Definition (b)		(1871-96) 1.8	(1874-96) 1.9	(1873-96) 4.5

(Definition (a) is preferred)

USA growth rates in the late upswing were considerably affected by the American Civil War. An average growth rate of 4.4% may be calculated for peace-time years in this period.

Growth rates calculated from Mitchell (1975, 1983)

Table 2.10 Main Price Movements, 1870-1914

	Change in prices % annual rate		Date of turning points in prices		
	"Downswing" 1870s -1890s	"Upswing" 1890s -1910s	Peak	Trough	Peace-time peak
UK	-1.7	+1.2	1873	1896	1913
France	-0.6	+0.9	1871	1897	1912
Germany	-0.8	+1.4	1874	1894	1913
Italy	-1.6	+1.0	1873	1888	1913
Sweden	-2.1	+1.2	1874	1887	1913
USA	-2.0	+0.9	1864	1895	1913
Australia	-1.5	+1.7	1873	1894	1913

Source: Maddison (1982 pp.236-237), consumer prices indices;
Mitchell (1983 P.841) for USA

In years in which the price index has remained static, notably in the USA between 1895 and 1901, the first year of the series is taken as the turning point if one is required.

USA statistics are affected by war-time inflation, during the course of the Civil War, and peace-time deflation; as a result the long downturn in prices started ten years earlier in the USA than elsewhere.

Table 2.11 Cyclical Movements in British Industry and Agriculture, 1815-1830

Year	Industry	Agriculture
1815	Strong industrial activity	Good harvest, but depression as a result of falling prices
1816	Extreme and unexpected distress	Exceptionally poor year
1817	Continued depression	Continued depression
1818	Extreme activity	Revival
1819	Revival, followed by gloom	Gloom
1820	Continued depression	Continued depression
1821	Slow revival	Deep gloom
1822	Confirmed revival	Settled gloom
1823	Prosperity	Revival
1824	Flourishing beyond example	No distress
1825	Climax of prosperity	Prosperity
1826	Commercial crisis and collapse	No complaints
1827	Revival	No complaints
1828	Steady progression	Bad harvest
1829	Sudden relapse	Bad harvest
1830	Depression and quick recovery	Poor harvest; settled gloom

Source: 1815-1820 Based on discussions in Smart (1910)
1821-1830 Smart (1917 p.571); all descriptions of this period are direct quotes from Smart.

Table 2.12 The Railway Boom of the 1840s: Some Key Statistics.

Date	Cyclical phase (UK)	Length of railway line open ('000 kms)			UK Capital authorised	UK Index of railway share prices	UK Gross expenditure on railway capital formation
		UK	Germany	USA	(£m)	(1843=100)	(£m)
1839		1.6	0.2	3.7	-	-	-
1840		2.4	0.5	4.5	2.5	88.0	8.7
1841	(a)	2.9	0.7	5.7	3.4	85.3	6.0
1842		3.1	0.9	6.5	5.3	91.0	4.8
1843		3.3	1.3	6.7	3.9	100.0	4.0
1844	(b)	3.6	1.8	7.0	20.4	122.5	4.2
1845		3.9	2.1	7.5	60.5	151.7	13.2
1846	(c)	4.9	3.3	7.9	131.7	142.0	32.7
1847		6.4	4.3	9.0	44.2	119.2	36.8
1848		8.0	5.0	9.7	15.3	96.2	26.1
1849	(d)	9.0	5.4	11.9	3.9	78.5	17.1
1850		9.8	5.9	14.5	4.1	70.4	9.2

Phases: (a) Long cycle slump

(b) Recovery; boom in railway speculation

(c) Peak of construction; sharp upturn in railway mileage

(d) Fading of boom

Sources: Mitchell (1975 pp.581-582, 1983 p.656) for length of railway line open. Boot (1984 pp.5, 12) for remaining columns.

For graphs of some of the UK series, see Freeman and Aldcroft (1985 pp.19-23). For details of the lines constructed see James (1983).

Table 2.13 The Timing of Major Innovations, 1830-1940, According to Mensch

Year	Number	Year	Number	Year	Number	Year	Number	Year	Number
1830	0	1852	1	1874	0	1846	0	1918	0
1831	1	1853	0	1875	2	1847	1	1919	0
1832	0	1854	0	1876	0	1898	2	1920	0
1833	1	1855	0	1877	0	1899	0	1921	0
1834	2	1856	0	1878	1	1900	0	1922	2
1835	1	1857	0	1879	2	1901	0	1923	2
1856	0	1858	0	1880	3	1902	0	1924	0
1837	0	1859	1	1881	1	1903	0	1925	0
1838	1	1860	1	1882	4	1904	0	1926	2
1839	1	1861	1	1883	1	1905	0	1927	0
1840	0	1862	0	1884	2	1906	0	1928	1
1841	0	1863	0	1885	3	1907	0	1929	0
1842	0	1864	0	1886	2	1908	1	1930	1
1843	0	1866	0	1887	2	1909	2	1931	0
1844	1	1866	2	1888	1	1910	0	1932	3
1845	0	1867	2	1889	0	1911	0	1933	0
1846	2	1868	0	1890	1	1912	0	1934	3
1847	0	1869	1	1891	1	1913	0	1935	5
1848	0	1870	0	1892	1	1914	0	1936	2
1849	1	1871	0	1893	0	1915	0	1937	3
1850	0	1872	1	1894	1	1916	0	1938	2
1851	0	1873	2	1895	2	1917	0	1939	1

Source: Mensch 1979 pp.124-128.

Table 2.14 Medium Term Growth Rates in Three Major Economies, 1870-1911

Year	Medium term growth rate (% per annum)			Year	Medium term growth rate (% per annum)		
	UK	Germany	USA		UK	Germany	USA
1870	4.5	6.9	8.1	1891	0.5	3.3	2.9
1871	1.9	5.8	6.8	1892	1.1	4.0	0.5
1872	1.7	7.0	5.2	1893	2.6	4.2	1.2
1873	2.4	3.3	3.1	1894	4.3	2.9	2.2
1874	2.8	1.9	2.0	1895	2.6	4.8	6.3
1875	1.1	-1.0	2.8	1896	3.4	4.7	3.1
1876	0.9	1.1	7.0	1897	3.7	3.4	6.9
1877	-0.1	0.5	9.6	1898	3.0	1.6	4.6
1878	2.1	-0.2	11.3	1899	2.4	-0.6	7.7
1879	1.8	-0.7	8.7	1900	0.9	0.1	5.0
1880	3.0	-0.0	2.6	1901	1.5	3.2	5.7
1881	1.9	3.3	3.7	1902	0.4	5.3	1.5
1882	1.8	3.3	2.2	1903	0.9	5.5	3.6
1883	1.2	4.7	5.7	1904	1.7	3.3	5.8
1884	0.1	3.3	3.5	1905	1.6	3.0	6.8
1885	1.9	2.6	5.2	1906	-0.1	2.3	1.3
1886	2.5	3.3	4.7	1907	0.2	2.4	2.8
1887	2.8	3.5	5.6	1908	1.2	0.9	3.2
1888	1.7	4.2	5.9	1909	3.1	2.3	7.1
1889	2.3	1.3	6.8	1910	2.0	3.0	3.7
1890	1.1	2.4	7.1	1911	2.6	3.4	3.0

The medium term growth rate is the average growth rate from the year preceding the date cited to two years after the date cited.

Source: as Table 2.1.

Table 2.15 The Acceleration of Productivity Growth in the Post-War Long Boom

	Productivity growth (% per annum, GDP per worker hour)			
	1870-1913	1913-1950	1950-1973	1973-1979
United Kingdom	1.2	1.6	3.1	2.1
Unweighted average, 16 OECD countries	1.6	1.8	4.5	2.7

Source: Maddison 1982 p.96.

Notes to Chapter 2

1. The earliest reference van Duijn gives, however, dates back as far as 1847, when Dr. H. Clarke, writing in the British *Railway Register*, noted a possible cyclical link between the famines of 1793 and 1847. It was wondered whether this might not have been a misprint for 1874, Dr. Clarke having contributed several papers to the Royal Statistical Society between the mid-1860s and the mid-1880s; the paper itself is difficult to gain access to, and is cited only indirectly, via Jevons, in sources such as Schumpeter (1954 p.743). The published dating is correct, as indicated in for example Clarke (1878, 1884), where Dr. Clarke refers to his work in the mid-1840s. Emphasis is given in this later discussion on Clarke's work on the ten year cycle, with the possibility of longer cycles being regarded as a side issue. Jevons (1884 p.224) noted that Clarke's "supposed period of fifty-four years is perhaps deserving of further investigation", but it was not until nearly a century after Clarke's first speculations that Schumpeter (1939) proposed his own system of multiple cycles. Instead of Schumpeter's scheme of six Juglars to a Kondratieff, one might even propose an alternative scheme of six "Clarkes" to a Kondratieff, Clarke giving 1793, 1804, 1815, 1826, 1837 and 1847 as years of famine and distress. An accessible reprint of Hyde Clarke's 1847 paper would be welcome.

2. Mandel (1975, 1978, 1980), Freeman (1984), van Duijn (1983), Mensch (1979) etc. There are exceptions, for example Imbert (1959).

3. Such an interpretation is open to debate, but such a debate is needed if Schumpeter's credentials as a long cycle theorist are to be properly assessed. Schumpeter had read widely, managing the unlikely synthesis of the ideas of Marx (especially in Schumpeter 1943) and of Walras (1874) (especially in Schumpeter (1934, 1939). This eclecticism makes it hard to "label" Schumpeter. Seidl, for example, in one place (Seidl 1984 p.VI) emphasises the Walrasian (French), rather than the Austrian, roots of Schumpeter's conscious economic thought. The basic point being made, however, is that the features of the long cycle which Schumpeter chose to analyse, and regarded as explaining the long cycle, are precisely those which an Austrian/neo-classical economist would be most expected to concentrate attention upon.

4. The central role of the entrepreneur is very clear in Schumpeter (1939, 1943). Schumpeter was dismissive of the macro-economic approaches of Keynes, regarding the *General Theory* (Keynes 1936) as practical advice arrogated to scientific theory (Schumpeter 1951).. He also dismissed the possibility of a macro-economic theory of the business cycle: "It follows on the one hand, that relations between aggregates being entirely inadequate to teach us anything about the nature of the processes which shape their variations, aggregative theories of the business cycle must be inadequate, too: and on the other hand, that it is not a valid objection against an analysis of business cycles that it deals "only" with partial situations" (Schumpeter 1939 p.144). Schumpeter builds his theory of the business cycle very much on *micro*-economic grounds.

5. When writing the text, it was assumed that the use of the terms "objective" and "subjective" in this context was commonplace, distinguishing between the classical and marginalist views of the economy. References to this quite natural use are, on close examination, hard to find, although Linder (1977 vol. 2 pp.117-121) makes the distinction clear. Hicks (1939) explicitly proposes a "theory of subjective value" without pressing the underlying implication of a possible theory of objective value. Kregel (1975 pp.19-33) distinguishes between "subjective" and "real cost" (or "physical") theories of value, while Gamble and Walton (1976 p.41)

distinguish between the "objective" and the "subjective" theories of value. Maybe more could be made of this kind of distinction.

6. Dow (1985 pp.9-40) somewhat picturesquely suggests that the framework of analysis which emphasises realism rather than axiomatic tightness, implies the use of a "Babylonian" mode of thought, rather than a "Cartesian/Euclidean" mode of thought. It should perhaps be noted that it has even come into question whether the Euclidean mode of axiomatic thought represents a suitable background to mathematics (see for example Lakatos 1978, volume 2); this mode of thought becomes even less plausible when one moves away from the abstractions of pure mathematics and into the study of natural systems or human society.

7. Phillips (1958), Lipsey (1960) and several later writers developed the idea of the Phillips curve.

8. At a broad level, Marx (1848/1969) argued in the *Communist Manifesto* that it was the dynamism of capitalism, and of the bourgeois class, that created the conditions for the collapse of capitalism. On a more narrow level, the process of capital accumulation was itself the factor which created the possibility of crisis. This form of argument is shown most clearly in volume 2 of *Capital* (Marx 1885/1956). Capital accumulation, based on the excess of capitalists' income over capitalists' expenditure, provides the basis for a new round of investment, but also the possibility of crisis in that capitalists' saving, the other facet of capital accumulation, unbalances capitalists' income and capitalists' expenditure and creates a shortage of demand in the economy as a whole. There are various parallels to be drawn with Keynes' (1936) theory of effective demand, especially if Keynes is read throughout with the class distinction between capital and labour firmly in mind.

9. Popper's critique of "historicism" (Popper 1957) is as unconvincing as it is well known. Without entering into a detailed critique here, it can be suggested that Popper misunderstands a basic position in social science research if he considers that the point of the analysis of historical tendencies (which if strong might be called "historical laws") is prediction. *Anticipation*, the preparedness for a range of possibilities is a more important criterion. The attempt to predict the future is fundamentally anti-historicist, not "historicist", since it assumes no fundamental change in background conditions, no historically specific laws, to make prediction impossible.

10. E.g. van Duijn (1983 pp.20-44).

11. Pollard (1969 p1409) notes that post-war changes in industrial structure, although large, "followed, and in some cases completed, the structural transformation in the economy which had begun in the 1920s," with older industries in relative decline, and newer industries expanding. See also Wright (1979 pp.30-45). Freeman, Clark and Soete (1982) emphasise a process in which the development of the newer industries set off a whole chain of innovations, creating in time a highly technologically progressive long boom.

12. Maps of the spread of the railway network at this stage are given by James (1983); see also Freeman and Aldcroft (1985) and Carter (1959). For discussion of the economics of the great railway boom, see Gourvish (1980), Mitchell (1964). In addition, Reed (1975) discusses, with special reference to capital markets, the building up of railway investment in the quarter century before the mid-1840s boom. For an attempt to assess the impact of the railway boom on the wider economy, see Hawke (1970).

13. See for example Deane (1979 pp.65-71, 87-102). For accounts of the structure of the cotton industry in the Industrial Revolution, see Edwards (1967) and Chapman (1972).

14. In the very early stages of the Industrial Revolution, USA cotton exports to Britain were negligible, Britain importing mainly from the West Indies. From the early 1790s, however, the USA cotton trade expanded sharply (North 1961 pp.40-41), while between about 1815 and 1860, cotton dominated American economic growth, according to North (1961 pp.66-74). Not surprisingly, a substantial cotton manufacturing industry, located mainly in New England, developed as cotton growing expanded (V. Clark 1929, vol. 1 pp.533-560). See also Bruchey (1967) for a series of readings on the American cotton industry.

15. See Trebilcock (1981), Pollard (1981 pp.219-277). Trebilcock indicates "spurts" of industrial growth around 1780 in England, 1829 in France, 1850 in Germany, 1880 in Austria, 1884 in Russia and 1886 in Italy. Pollard, concentrating more on the regional dimension notes that even within these countries, industrialisation was a spatially uneven process, with some areas going through their industrial spurt while other areas did not industrialise.

16. The accelerated development of the "white periphery", to be discussed further at a later stage, was an extremely important feature of the late 19th and early 20th centuries. The combination of substantial savings in industrialised nations seeking investment opportunities, a perpetual surplus of rural labour seeking employment, vast temperate land areas which could easily be colonised, and improvements in transportation (allowing, for example, inter-continental trade in refrigerated meat) combined to generate major flows of both capital and labour from the European core to the white periphery. The use of the terms "white periphery" and "black" periphery is not meant to indicate that the "white"areas were empty lands, devoid of a non-white presence. Rather, the economic attractiveness of such areas to white settlers brought about a very intensive subjugation of native populations in for example North America, Australia and New Zealand. In intermediate cases, most especially in South Africa, the battle between white settlers and the indigenous population has continued long past the period of main settlement.

17. From the perspective of a hundred years later, it is perhaps easier to grasp why British capital flooded to the white periphery, than to grasp why Britain got involved in the "black periphery". In Africa, Munro (1984) notes that the motives for the late 19th century imperial push varied from the strategic (need to protect the Suez Canal) to the speculative (real estate in Southern Africa), to the wish to extend existing trade (West Africa) to the search for possible new fields for colonisation and investment (East Africa). Latham (1978) criticises dominant approaches to the economic history of the period as being excessively Eurocentric and Americocentric, with systematic neglect of the independent role played by Asia and Africa in world development. To some extent this point can be accepted, though the global penetration of British, European and American capital must still be regarded as the dominant force in the developing international economy; peripheral circuits of capital, though important, may be regarded as secondary.

18. This argument is presented to provoke further discussion. The concept of "stagnation management", counter-posed to the "demand management" of full employment years, seems to be important; one tries to hold growth at a steady level of about 3%, and hopes to absorb any forces tending to disrupt this smooth growth path. A growth rate of 3% is quite sufficient for the majority of the population to feel increasingly

affluent, and is thus politically satisfactory for a government in power.

19. Mandel's writing draws heavily on Trotsky (1923) on this point (see especially Mandel 1975 pp.126-134, 1980 pp.28-30). Day (1976) sees Kondratieff's most famous article (Kondratieff 1926/1978) in terms of a direct argument against Trotsky's position that major phases of capitalist development are generated by external events.

20. Schumpeter (1939 pp.72-102) poses the question of how an economic system, reproducing itself at constant rates and in equilibrium, generates evolution, and comes to the conclusion (p.84 onwards) that the answer is innovation, defined as "the setting up of a new production function" (p.87). Innovations, Schumpeter argues (pp.100-102) are not evenly distributed in time but rather tend to cluster, as one successful innovation breeds others, causing disruption to the existing system and enforcing a distinct process of adaptation. The form of the argument, starting from an *assumed* equilibrium, means that the case that innovations generate the business cycle, rather than that they cause economic evolution, is not proven. It is suggested here that the economic system would never find itself in the timeless equilibrium which Schumpeter starts by positing, but that there would always be cyclical movement around an "average". The working through of various innovations and innovation clusters accentuates the basic cycle, and sets the broad pace of economic evolution; it does not, however, *create* the basic cycle.

21. Richardson (1967) gives various UK domestic series.

22. Day (1981 p.249).

23. As presented in Walras (1874/1977). Schumpeter appeared to be arguing not that innovation was external to the economic system in real life, but rather that innovation was an external factor as far as the Walrasian general equilibrium system is concerned. Innovation "is an *internal* factor because the turning of existing factors of production to new uses is a purely economic process ... It is a *distinct* internal factor because it is not implied in, nor a mere consequence of, any other." (Schumpeter 1939 p.86). Innovation thus disrupts the equilibrium not the economy.

24. Later work, notably by Schmookler (1966, 1972) has opened up various questions on the pace of innovation which had tended to be neglected by Schumpeter.

25. Rosenberg and Frischtak (1984 p.25).

26. ibid. pp.21, 10-11.

27. van Duijn (1983 p.143).

28. Kondratieff (1926/1978 p.60). The dual dating of this work, contrary to usual bibliographic conventions, is undertaken both to emphasise the date on which the paper was first published (in 1926, in German) and to allow textual reference to the published source actually used.

29. See criticisms by Garvy (1943) and Maddison (1982 pp.67-73).

30. Kondratieff, op.cit., p.53.

31. Bracketed clauses indicate a commentary by the current author on Kondratieff's text.

32. Kondratieff, op.cit., p.53.

33. ibid. p.55. van Duijn (1983 p.66) notes this important passage with approval, suggesting that Kondratieff had sharper insights on the economic nature of innovation than the majority of post-war macro-economists.

34. Kondratieff (1976/1978 p.55).

35. Doubts are mentioned by, for example, Garvy (1943 p.207). It is perhaps worth remembering, however, that the Napoleonic Wars, the American Civil War, the First World War and the Vietnam War all started in the mature stages of a long cycle upswing.

36. Garvy (1943 p.207) notes that Kondratieff's lists of inventions, wars and revolutions "are simple inventories of events, in which no guiding principle of selection can be detected. No attempt was made by Kondratieff to evaluate the importance of the events or inventions listed." An examination of Kondratieff (1926/1978) suggests however that Kondratieff did not attempt to *list* wars, inventions, etc., but simply cited a few important illustrative examples.

37. This is an explicit rejection of the often implicit notion in recent work that Kondratieff might have produced some interesting empirical work while it was Schumpeter who was the first to examine long cycles theoretically. Kondratieff (1925) stressed, long before Harrod (1939, 1948), the importance of theorising in dynamic rather than in static equilibrium terms, yet Schumpeter bases his analysis on a static general equilibrium framework, with a single factor (innovation) breaking the equilibrium. Kondratieff's theoretical framework is, it is suggested, both more flexible and more realistic than Schumpeter's.

38. Though van Duijn (1983) appears to be moving strongly towards an "endogenous" conception of this issue.

39. But cited by Garvy (1943), Mandel (1975 pp.134-317) and Day (1981). See also the bibliography of Kondratieff's work in van Duijn (1983 pp.71-72).

40. Kondratieff's work was heavily attacked in the USSR; see for example the accounts in Day (1981 pp.87-95, especially p.94) and Garvy (1943 pp.215-216).

41. van Duijn (1983 p.64), Solzhenitsyn (1974 p.50).

42. Jevons (1884 pp.194-243). One can suggest that the modern conception of the business cycle pays particular attention to pressures building up *within* the economy, which then have to be periodically released. Jevons, a century ago, had a much more mechanical approach: "It is a well-known priciple of mechnanics that the effects of a periodically varying cause are themselves periodic, and usually go through their phases in periods of time equal to their cause" (Jevons 1884 p.194). He then suggested that the solar period affected the weather, which affected the harvest, which affected the price of the corn, and that a price cycle resulted. Later Jevons (1884 p.207) accepted that the figures did not bear out this theory, but still hoped that the sunspot theory could explain commercial crises (!). Many years later, Moore (1921) suggested with even greater implausibility that winds on Venus might be the cause of the eight year business cycle. This whole approach to business cycle theory is inadequate and, not surprisingly, outmoded.

43. Described as such by van Duijn (1983 pp.62-63), who notes Marx as being an advocate of the "echo" theory of the business cycle.

44. In recent years, Gordon (1980). Also in later works by Kondratieff, probably written under political pressure, unavailable in English (see Garvy 1943 p.219, van Duijn 1983 p.67) and in a 1929 paper by de Wolff (cited in van Duijn 1983 p.63).

45. The most basic modern theories of the business cycle rely heavily on an accelerator-multiplier mechanism. The accelerator mechanism, by which the level of investment responds to the rate of growth of income rather than the level of income, means that any fluctuations in the rate of income growth will cause greater proportional fluctuations in investment. The multiplier mechanism means that any autonomous increment to investment raises total national income by more than the value of the investment. From these two relations it is possible to model a series of oscillations in the level of economic activity; see for example Hicks (1950), Matthews (1959).

46. The capacity ceiling of labour (full or "overfull" employment) is a more important constraint to economic growth in a situation approaching full employment than is the capacity ceiling of machinery; it is easier to expand investment than to expand the total size of the workforce.

47. Harrod (1939, 1948, 1973).

48. *Economic Trends*, various.

49. Pasinetti (1981 pp.88-91). Unfortunately "active vigilance" may not be enough to maintain full employment if it is found that the development of new sectors is relatively weak, and that the demand created is increasingly Government demand (leading eventually to fiscal and inflationary problems) rather than consumer demand.

50. See van Duijn (1983 pp.20-44), who explicitly draws on the work of Kuznets (1930) and Burns (1934). The argument in the text is essentially a varsion of the "retardation in growth" argument presented by Kuznets and Burns, with aggregation across all existing industrial sectors.

51. See Freeman, Clark and Soete (1982) for the idea of a technological band-wagon, which accelerates output and productivity growth in leading sectors, encourages the development of technologically related sectors, but, arguably, marginalises the role of non-related sectors.

52. Slutzky (1937, based on a 1927 paper) argued that a series of random disturbances, smoothed, could produce a quasi-cyclical time series, and furthermore that a long series of random numbers when smoothed could produce the appearance of changes of cyclical regimes (from, for example, cycles of great amplitude to cycles of small amplitude) at critical points. Certainly Slutzky's results, which may be regarded as an implicit critique of Kondratieff's time series, demonstrate the need for caution in interpreting apparent cyclical time movements. However, Slutzky based his argument on a *continuous series* of random shocks rather than a few, dominant, random impulses at particular but indeterminate times. Without some *systematic* input into the system, the random shocks are more likely to be damped down than to initiate an explosive series, as Frisch (1933) notes. It is suggested here that there are both random and systematic impulses into the economic system (though even random impulses work themselves out systematically), but that systematic impulses dominate. If after 1966 each business cycle becomes successively more depressive, this results, it is argued, from systematic tendencies rather than from the working out of a few quasi-random "shocks" (the Vietnam war,

the 1973 oil shock, the 1980 oil shock). There is scope here, however, for considerable legitimate disagreement.

53. Compare with the discussion of Myrdal (1957) in chapter 1.5 above.

54. These recessions are discussed in more detail in chapters 6 to 8 below.

55. See section 2.6(iii) below.

56. It is, for example, doubtful whether full employment was ever reached in Britain in the post-1886 long cycle upswing. Trade union unemployment figures *appear* to show full employment at various cyclical phases, but this is a statistical illusion in that the extent of trade union membership was limited to the number of people who could reasonably be expected to be employed at the peak of the business cycle. Even at the peaks of business cycles, there is strong evidence to suggest relatively high levels of unemployment, concentrated particularly in the casual labour markets of large cities, and in rural areas. See chapter 9 below.

57. The word "average" is placed in inverted commas, since the term is used to denote a theoretical construction and not an empirical measure. In the circumstances mentioned in the text, the whole point is that the empirical average will considerably exceed the "theoretical" average.

58. The use of the terms A-phase (for expansion or upswing) and B-phase (for contraction/stagnation or downswing) is becoming more fashionable, due largely to its use by Wallerstein (various).

59. Thus Stewart (1967), in perhaps the most articulate popularisation of the Keynesian "conventional wisdom", argued (pp.168-169) that it would require merely a tightening up of Keynesian forecasting models to remove even the cyclical unemployment that developed in recessions to the mid-1960s. Stewart develops this theme in his conclusion, noting that "the basic fact is that with the acceptance of the *General Theory*, the days of uncontrollable mass unemployment in advanced industrial countries are over. Other economic problems may threaten; this one at least has passed into history" (p.254). Thus the acceptance of Keynesianism leads to a permanent long boom. Later, Stewart (1978), in assessing why high unemployment had returned, pointed to about-turns in policy, to restrictions in freedom of action imposed by international bodies (the IMF, GATT and EEC) and to various elements in the class structure; the question of whether a permanent long boom is *structurally* maintainable is not raised.

60. "The Kuznets cycle in America lived, it flourished, it had its day, but its day is past" (Abramovitz 1968 p.367). See sections 2.5 and 2.6 for further discussion, where it is emphasised that it was large scale exports of capital and labour from Europe to the white periphery which provided the "energy" for maintaining this cycle.

61. The basic techniques for calculating national accounts are outlined in Stone and Stone (1966). It is quite possible, of course, that data are neither sufficiently extensive nor sufficiently accurate for calculating national income with precision. Also, national accounts totals generally concentrate on marketed production, excluding for example production within the household. This, suggest Stone and Stone (1966 p.30) suggest, is a matter of convenience rather than of principle, measurement of production in the non-marketed sector being hazardous.

When a national income has been calculated in monetary terms, there remains the problem of reducing the resulting total to "real" terms, allowing for price changes. The index number problem poses several difficulties; indeed because of this Keynes argued his *General Theory* using money income and employment as his fundamental units, without attempting to introduce discussion of *real* product (Keynes 1936 pp.37-45). In calculating a price series to act as a deflator, it is necessary to construct figures for prices and relative quantities for a particular base year, which of course ought to be representative of the period as a whole. Relativities of prices and production levels evolve through time, however, with demand tending to increase faster in goods that are cheapening relatively. As a result, growth rates recorded using an early base year will systematically tend to exceed those recorded using a later base year (Feinstein 1972 p.5). There are also problems of how to account for quality changes in time series; a 1987 car might be much more expensive than a 1937 car, but how much of this is due to the rising price of cars, and how much due to the improving quality of cars? Different series can be produced, furthermore, according to whether prices are based on market price (including the effects of taxes and subsidies) or at factor cost (excluding the effect of taxes and subsidies). Finally, the question of the representative of the base year needs to be considered; relative prices might vary considerably during a sharply delineated business cycle (Stone and Stone, 1966 p.69), or in transitions to or from war-time production, violating the assumption of generally stable relative prices on which the calculation of the price level is based.

All these are important technical problems, which make the series produced in Table 2.1 in many respects highly tentative. A brief point should be added concerning the common criticism (e.g. Myrdal 1974 pp.182-196) that national accounts figures do not measure social well-being. This is true but irrelevant; the production and interpretation of national accounts statistics is part of a project to evaluate the changing structure of economies; it is *not* an extension of the late 19th century view (e.g. Edgworth 1881) of economics as the science of calculating pleasure and pain. This argument applies even more strongly when the focus is on wage labour in a monetary economy.

62. The basic argument is, in effect, that it is easier to identify trends than amplitudes of cycles on interpolated and incomplete data, and that a cautious statistician will choose a series which keeps deviations from the trend fairly low. Sometimes, however, incomplete data might show an exaggerated cyclical fluctuation, which may lead to *overestimates* of the strength of the cycle. Pre-1914 trade union unemployment statistics, which concentrate on trades particularly vulnerable to recession, are an example; drops in unemployment from 12% to 2% in the space of a couple of years seem excessively large. Furthermore, any economic time series basing itself on such a time series for unemployment would tend to overstate the strength of the cycle.

63. The United Nations *Yearbook of National Accounts Statistics* provides more detailed information on the national conventions currently in use.

64. Pigou (1947) suggests that while there was a slight post-Armistice contraction in economic activity, there was a considerable boom, not a slump, starting in early 1919 and that the boom continued for a year.

65. See Table 2.2, also Lewis (1949 pp.68-72). Richardson (1967) discusses in detail the British recovery, which was strong. Other accounts, however, suggest that the recovery was patchy internationally in the early post-slump years and gathered pace only during the late 1930s rearmament boom, which itself resulted from the perilous political situation. See

for example Hodson (1938), Kindleberger (1973), Davis (1975), Aldcroft (1980).

66. Posted prices for Arabian light oil stood at $3.011 on October 1st 1973, $5.119 on October 16th, and $11.651 on January 1st 1974 (Hill and Vielvoye 1974 p.73). Not surprisingly, several accounts of the oil crisis and its implications soon came to be written, with for example Hill and Vielvoye (1974) and Chevalier (1975) concentrating on short to medium term questions, and Stork (1975) relating the onset of the oil crisis to the longer term history of oil production in the Middle East.

67. One of the key features of the long boom in Western Europe was the immigration of labour to take up low status jobs, with Britain receiving *permanent* immigrants from the Commonwealth and other countries tending to operate a "guest worker" system of temporary immigration (Castles and Kosack 1985). In times of recession, unemployment becomes concentrated amongst the new Commonwealth population in Britain, while West Germany and France have to some extent been able to export unemployment by reducing the number of foreign labourers. However, as Castles and Kosack (1985 p.499) show, unemployment rates for foreign labour are much higher than average in West Germany and France. Earlier, in the 1930s, France had kept unemployment down, despite a very weak economic performance, by a strong anti-immigrant policy (Lewis 1949 pp.99-103; Cross 1983 pp.186-212).

68. By, for example, Kondratieff (1926/1978). It is easy to assume that the demarcation of Britain's economic history into such phases as the "Great Victorian Boom", the "Great Depression", etc. was a development of Kondratieff's scheme. This seems not to be the case. A year before Kondratieff's most famous paper was first published in English, Beales (1934) was able to note that such a periodisation was *already* merely standard text-book practice: "The first phase, from 1815 to 1846, has not yet acquired a generally accepted distinguishing label; the second, from 1846 to 1873, is known as the "good years"; the third, from 1873 to 1886 as the "great depression"; the fourth from 1886 to 1914, or even unto now, as the "end of laissez-faire" " (Beales 1934 p.65). Quite possibly Kondratieff took these generally accepted periodisations, and attempted to see if these phases could be detected in statistical series, and then explained. There is scope for some interesting historiographical research on this issue.

Church (1975) and Saul (1969) have questioned this periodisation of the 19th century, and Saul argues that the notion of a great depression from 1873 to 1896 is a "myth". It is suggested here that there was not so much an 1873-1896 "great depression", but rather an 1873-1886 "long cycle downswing".

69. Kuznets (1930) referred to "secondary secular movements". Lewis and O'Leary (1955) introduced the term "Kuznets cycle".

70. Milward (1984a) points firstly to the "classical liberal" interpretation "that war was an almost unmitigated economic disaster" (pp.9-10), and then to the more recent interpretation that the demand created by the prosecution of war was quite capable of leading to an economic boom. Thus "in the Second World War the idea that the War might be paid for out of the increase in national income it engendered became the guiding light of policy" (Milward 1984 p.16). This view is perhaps rather Anglocentric, the view from a country which had fought in wars, but not had wars fought on its soil. Clearly, in "battleground" countries, economic costs would be higher. For recent accounts of the economic effects of the two World Wars, see Hardach (1977), Milward (1977, 1984a). For various accounts of the economic effects of war over a longer historical time span, see the essays in Winter (1975).

71. UK exports to the USA fell from £21.7 million in 1860 to £9.1 million in 1861, while imports fell from £49.4 million in 1861 to £17.9 million in 1864 (Mitchell and Deane 1962 p.318; all figures are at current prices). Much of the drop in imports was accounted for by raw cotton. Checkland (1964 pp.41-42) notes an urgent search for alternative supplies of cotton, which caused a sudden boom in India, particularly Bombay, but a crash in 1865 as the American economy recovered. UK trade figures again reflect this process, with imports from Asia increasing from £36.9 million in 1861 to £74.9 million in 1864, but falling back to £40.8 million in 1867. Despite the opening up of new sources of supply, however, UK cotton imports in volume terms were generally about a third to a half below normal levels in the Civil War Years (Kelly 1973 p.356).

72. The most detailed history of the Lancashire "cotton famine" is still Henderson (1932). Farnie (1979 pp.135-170), drawing on, and extending, Henderson's arguments, explicitly rejects the case that it was the American Civil War which caused distress in Lancashire. He argues that despite the blockade of the Confederate ports, there was never any absolute shortage of raw cotton, in part because of earlier stockpiling in anticipation of the War, and in part because of the availability of other, though more expensive sources of supply. Farnie stresses instead problems faced by the saturation of markets for manufactured cotton following an intense boom in 1860, and the inevitability of a subsequent sharp cyclical contraction. An aggravating character was a succession of bad harvests in India in the early 1860s, reducing the prosperity of Britain's largest market for cotton goods.

Further examination of this question seems to be required. While the extreme case, that the American Civil War made it in effect impossible to produce cotton, can probably safely be rejected, one suspects that it would be possible to substantiate the more moderate case that the Civil War had an important indirect effect on Lancashire's prosperity by distorting the patterns of supply of raw cotton, increasing prices and thereby considerably aggravating the cyclical downturn which was in the air.

For a recent summary of the social effects of the cotton famine, see Oddy (1983).

73. It has for a long time been a matter of controversy whether the Civil War represented a major turning point in America's economic history, with Southern economic pre-eminence being halted, and Northern industrialisation becoming dominant for the first time. As in so many long-running historical debates, the issue tends to be clouded by the fuzziness of the distinction between smooth continuous change and sharp radical change; there is a wide range of intermediate cases which can be interpreted in either way, according to the predilections of the writer. It would require a deeper knowledge of American economic history and economic geography than has been developed in the production of this thesis to unravel fully the economic impact of the American Civil War. Some broad outlines can be suggested, however, using the methods of analysis shown in the main text.

The first point to note is that wars have a much more profound transforming effect on the political structure than on the economic structure. If, for example, economic trends are highly expansionary before a war, they will, unless an *economic* crisis was on the horizon before the war, continue to be expansive after the war. There has been a long tradition of regarding the Civil War as the decisive triumph of Northern industrial capitalism over Southern agricultural capitalism, based largely on cotton. Thus Beard and Beard (1927) refer to "the second American Revolution", while Hacker (1940) stated the theme even more strongly, arguing that before the Civil War the economic and political power of the

South was actually retarding industrial development in the North, and that this obstruction had to be removed before American capitalism could flourish. While the change in the *political* balance of power was sharp and far-reaching, it seems likely that the *economic* changes, though working in the same direction, were more gradual. Some sources (e.g. Cochran 1961, Engerman 1966) have attempted to read the Beard-Hacker thesis in totally economic terms, arguing that the central point was an argument that the Civil War was the catalyst for "modern" industrial growth to take off in America. They then argue that the presence of substantial economic growth in the decades before 1860 discredits the (assumed) Beard-Hacker thesis. This argument seems to be based on a rather crude reading of the position being attacked. It is clear for example that Beard and Beard (1927) regard the second Revolution as lasting not just from 1861 to 1865, but as being rooted in earlier events: "the armed conflict had been *only one phase* of the cataclysm, a transitory phase; .... at bottom the so-called Civil War .... was a social war" (p.53); "The process of reconstruction in the South helped to accelerate the revolution *hastened* by the war" (p.119; emphasis added in each quote). To take the argument a stage further, if there had not already been substantial economic and industrial development in the North before 1860, representing a threat to Southern influence, the intensity of conflict in the 1860s would not have developed. The Civil War was the focal point for a longer transformation rather than the transformation itself. As far as detailed cyclical movements in the economy are concerned, the contention of Nevins (1927), that the South recovered very slowly from the war while the North boomed, deserves closer attention. If this is the case, then a highly important shift, even a reversal of polarity, in American economic geography can be identified; see also V. Clark (1929, vol 2) for a detailed description of individual industries during the period.

74. It is not totally clear whether it is possible, even in principle, to give a meaningful answer to this question, there being such a complex of questions to be resolved first. There was a world boom, but how much of this can be explained by the general tendency of the economy to boom at a very late stage of the long cycle upswing, and how much due to a reintegration of the United States into the world economy? Also, was the cyclical rhythm of the American economy at this time dominated by the 20 year Kuznets cycle, or is it simply the case that the economic shifts occasioned by the Civil War (depression 1861-65, followed by upswing) gives the *appearance* of a 20 year cycle, as opposed to a double-peaked long cycle upswing starting in the 1880s? The absence of any obvious strong world upswing between 1865 and 1867 on balance seems to favour the interpretation that the 1867-1871/3 boom was a natural boom far more than it was a reconstruction boom.

75. See also Chandler (1970 pp.53-66), Potter (1985 pp.25-30). Rasmussen (1975) has compiled an extensive documentary history of United States agriculture between the wars, part of a four volume series. Inevitably, when dealing with contemporary documents, the detailed structure of American agriculture can be discerned more effectively than the broad trends.

76. See for example Guttmann and Meehan (1976), Hardach (1980 pp.10-28), Born (1977), Feldman et al. (1982). The German crisis was manifested mainly in terms of a total collapse of the currency, rather than in unemployment; indeed Hardach (1980 p.24) notes that Germany at this time was close to full employment, and that Britain with 20% unemployment was viewed at around 1921 as the example to avoid.

77. Keynes (1919/1971, especially pp.71-142). The issue of German reparations was of course a matter of heated political debate at this

time. It gradually became clear (see for example Moulton and McGuire 1923) that the whole structure of the European economy had been severely dislocated by the Great War, and that in particular Germany could not, without considerable internal destabilisation, meet a large reparations bill with her pre-war sources of invisible earnings having largely disappeared, and with a weak European market for industrial products.

78. Mitchell (1975 pp.743-745).

79. The *International Labour Review* (various) provided detailed statistics on price levels in various countries and cities at this time.

80. Based on Mitchell (1975 pp.744, 746); also *Historical Abstract* (Table 89), Pigou (1947 pp.230-239).

81. All figures based on Mitchell (1975 pp.741-747).

82. The type of approach being described permeates the bulk of the macroeconomic literature up until the early 1970s. Even if one can regard as overstated the case that Keynesian policies *created* full employment, there is still much plausibility in the argument that Keynesian policies *prevented* a lapse into mass unemployment and hyperinflation after the war. In developing this argument one could cite not just the *General Theory* but also Keynes's warning on the reparations problem after the First World War (Keynes 1919/1971), and his role in developing the blueprints for the post-1945 international financial system (Harrod 1951 pp.525-650). To close the circuit of explanation, one could quote the famous passage from Keynes (1936 pp.383-384) where he stresses the centrality of economic *ideas*, rather than of vested interests, in the running of the economy.

The present author takes a different view, and ascribes centrality to economic *forces* rather than to economic ideas. In the issue under discussion, the important point is that the First World War completely disrupted the complex system of world trade and territorial expansion which was the basis of economic expansion up to 1914, while the Second World War was, economically, merely an interruption to the development of new science-based products, which was at the centre of economic development from 1932 onwards. Thus the economy developed smoothly after one war, but not after the other.

83. Milward (1984b), in a careful analysis of economic conditions in Western Europe just after the war finds no real support for the notion that the American-instigated European Recovery Programme of 1947 (the "Marshall Plan") was essential in rescuing the European economy from "crisis" and setting it on the path to recovery. He suggests (pp.90-92) that much of the emphasis given to the Marshall Plan needs to be seen in the context of the question of the Cold War, rather than in purely economic terms.

The standard notion being challenged by Milward is that post-war recovery was weak, and being impeded by a serious shortage of dollars which hindered the purchase of raw materials from outside Western Europe. In contrast, Milward notes that during 1946 and 1947 industrial production throughout Western Europe expanded rapidly, apart from a very brief lapse in Britain in early 1947, when an exceptionally severe winter prevented coal being moved to industrial customers. The "crisis" of 1947 was in effect little more than a typical balance-of-payments problem, so common during the 1950s and 1960s, where rapid expansion of the domestic economy causes imports to increase sharply, leading to a balance of payments deficit. Milward suggests (p.19-20) that the contemporary perception of crisis was based on an analogy with the period after the First World War.

Then, the timing of the reconstruction boom led to a severe balance of payments deficit in the early stages, with a move towards balance as the boom faded; it was expected that the deficit in the balance of payments after the Second World War would start to correct itself in 1947. This did not happen, though, because the boom continued, leaving the deficit far greater than expected. This created alarm,hence the notion of crisis in 1947.

Milward's results appear to be wholly consistent with the argument developed in this thesis that there was a continuous economic upswing, interrupted *only* by war,from 1932 to the mid-1960s. His results fit less conveniently with standard Keynesian interpretations, and do not give any support whatsoever for Mandel's notion that American aid was necessary to set the upswing of the long cycle in motion in Western Europe.

84. See for example Pollard (1969 pp.311-314, 376-379). Obviously it is possible to provide a list of economically important technological innovations developed in the context of war, but this of itself does not necessarily indicate that war *accelerates* technological developments. In peace-time periods, a high proportion of research expenditure on military, rather than civilian, projects, would appear to weaken the technological dynamism of the economy, since effort is being concentrated on developing industrial systems which do not further the expanded reproduction of the civilian economy (see for example Chalmers 1985 pp.113-133). In war-time, however, ths situation is different; the demands of total war require economic production to be conducted at very high pressure, thus stimulating a concerted search for more efficient methods of production and industrial organisation. It is quite possible that these war-time indications of the steps needed to improve the efficiency of production represented lessons learnt for the post-war periods. For example, one can calculate from Maddison (1982 p.212) that productivity, measured in terms of man-hours, increased by 0.9% per annum in the UK between 1900 and 1913, and by 1.6% per annum in the USA. Between 1913 and 1929 these figures had increased to 1.5% and 2.4% respectively, despite the switch from long cycle upswing to long cycle downswing. Between 1929 and 1938 productivity increased very slowly, by less than 1% per annum, in the UK and the USA, while in Germany, where there was a war economy at a very early stage, productivity increased by 2.4% per annum. The period from 1938 to 1950 saw an upsurge in productivity in countries which avoided occupation; 2.2% per annum in the UK and 4.1% per annum in the USA for example. This type of productivity growth, when maintained in peace-time, set one of the central patterns for the post-war boom.

On balance it seems probable that the demands of war have some effect in accelerating economically useful technological development, though often in highly roundabout ways; Milward (1984a p.61) notes " the extent to which the experience of the world wars did force British industry away from the world of the skilled artisan and towards a situation where it was able to find comparative advantages through higher levels of productivity". Aldcroft (1969) emphasises the positive effects that war-time advances ultimately had on British industries in the 1920s. Milward (1977 pp.169-207) emphasises however that the *direct* effects of war, in particular the 1939-45 war, on technology should not be overstated; spectacular advances in some sectors were made only at the expense of technological retardation in other sectors.

85. Average of 16 countries, based on Maddison (1982 p.86).

86. A point emphasised by Cairncross and McRae (1975 pp.21-24). See also Griffith-Jones (1985 pp.25-36).

87. On closer examination it appears that what is happening is not that there is a large body of economists arguing that all the West's economic problems started with OPEC in 1973, but rather that economists are trying to *distance* themselves from the naive mid-1970s "conventional wisdom" that the rot started in 1973. Certainly the moment of intense crisis appeared in 1973, but steering problems (rising inflation, increasing unemployment, etc.) had become more acute since the mid-1960s. Perhaps the situation is as suggested by Frank (1980 p.68):

> "Meanwhile, the "oil crisis" became the convenient scapegoat for the real crisis, and particularly for the renewed cyclical recession beginning in 1973. Business, labor, govenments, politicians, publicists, and the public everywhere blamed all their troubles on the Arab "oil sheiks" .... This political masking of the real crisis and its causes continued for nearly two years into 1975 before the hard evidence, particularly of steeply rising unemployment, obliged some statesmen to tell people of the truth of the matter."

88. It is emphasised that neither Mandel, nor Cairncross and McRae, themselves indicate the process of decline as *starting* in October 1973. They are well aware that every crisis has its origin in earlier events.

89. It is important to expose what might be termed the "technological fallacy", that unemployment is caused by technological improvements through which the same volume of production is undertaken by fewer people. Such technological displacement is a much less significant factor than is commonly supposed, and certainly cannot be legitimately held to explain mass unemployment. The period from 1973 to 1982, marked by an extremely sharp rise in unemployment, was one in which productivity increases were unusually slow (Matthews 1982, Hazeldine 1984 pp.13-21), rather than, as might be expected from the "technological fallacy" model, unusually fast.

An increase in productivity means that more can be produced for the same level of inputs. If, for example, productivity increases by 3% per annum, 100 people will produce 100 units in year 1 and 103 units in year 2. Furthermore, there will be a tendency for the units to be sold more cheaply in real terms (thus, in terms of wage hours) in year 2 then in year 1. The level of output in year 2 depends on what the firm can sell on the market at a price which covers cost of production plus "normal" profits; this depends primarily on demand factors. Thus, according to the state of demand, output in year 2 would stand at, say, 102, 103 or 104 units, and employment at 99,100, or 101. If 102 units are produced, employment falls by 1 because of slack demand, while if 104 units are produced, employment increases by 1 because of heavy demand.

From this viewpoint the accounting procedures of Massey and Meegan (1979, 1982) should be rejected. On the case cited above, with production at 102 units, Massey and Meegan would argue that 2 jobs have been created through demand factors, and 3 jobs lost through technical change. Yet the increase of output would most likely only have been possible because of increased productivity; it is the output increase, not the job loss, which should be attributed to

new technology. With static productivity, it is more likely that the firm would be employing 99 people to product 99 units, rather than 102 to produce 102.

This is a fairly basic point, and unless it is fully understood much of the point of the argument in later chapters will be lost.

90. It is of interest to tabulate the changes of phase given by various writers. Thus, from the 1840s to the 1960s:

	L	U	L	U	L	U
Kondratieff (1926/1978)	1844-51	1870-75	1890-96	1914-20	-	-
Schumpeter (1939), as interpreted by Kuznets (1953p.109)	1843	1869	1886	1911	1939	-
Imbert (1959)	1849	1873	1896	1920	1933	-
Rostow (1978)	1848	1873	1896	1920	1936	?
Mandel (1975)	1847	1873	1893	1913	1939-45	1966
van Duijn (1983, 1984)	1845	1873	1892	1929	1948	1973
Crouch (present work)	1843	1873	1886	1914	1933	1966

L refers to the transition from downswing to upswing, while U refers to the transition from upswing to downswing.

Imbert's series may be regarded as perhaps the standard one, and matches that of several other writers, although the 19th century lower turning points are placed rather later than in the current work, as is also the case with Kondratieff's series. The series given by Schumpeter closely corresponds with the current series, except for the 1930s, although the boom at the tail end of the upswing (1869-73, 1911-13) is given as part of the downswing. van Duijn's turning points correspond more closely with the present text than the table above suggests, since he uses a four stage model of the long cycle (prosperity, recession, depression, recovery) and defines the transition points as being at the end of the recession and the recovery phases, rather than at the end of the prosperity and the depression phases, which would correspond to the usage here. Such definitional differences are legitimate, but lead to different aspects of the cycle being emphasised. To use a physical analogy, "high tide" can be defined according to how much of the beach is covered by sea (cf van Duijn), or it can be defined as the point at which the tide stops coming in and starts moving out (cf Crouch). Moving back to the economic long cycle, the series of turning points in van Duijn's series which would be given under comparable definitions would be 1836, 1866, 1883, 1913-20, 1937, 1966. Even so, van Duijn's chronology needs to be treated with caution. Rostow's emphasis on price levels, rather than on production, means that it is difficult to give a coherent interpretation, in terms of upswings or downswings, of his scheme of post-war "trend periods"; is the post 1972 period one of upswing (price rises) or downswing (weak production)?

91. See table above.

92. Great caution is needed in the interpretation of British trade union unemployment statistics (see chapter 9 below), since the level of trade union membership during any cyclical upswing is heavily dependent on the level of demand for labour, while the production of representative unemployment figures would require the

level of trade union membership to be independent of economic conditions. Thus, trade union membership in the later stages of upswing is effectively limited to those who will be able to find employment in unionised industry, while there may still be considerable unemployment in the rest of the economy. The registered unemployment rate of 0.9% in 1872 is probably unrealistically low, especially given the rate of population increase, but signs of a substantial *increase* in unemployment between 1872 and 1878 can confidently be regarded as genuine.

93. See especially the critique of the idea of an 1873-96 "Great Depression" in Saul (1969). Saul's critique, however, is based on radically different grounds to the critique implicit in the main text here. The difference in approach can best be illustrated by a quotation. Saul (1969 p.38) asks

> "How do we treat cycles of unusual amplitude? The high levels of production and productivity around 1900 makes two views possible. One can write of growth up to this peak and stagnation afterwards to 1914, or one can argue that the rise of 1897-1900 was a flash in the pan and ignore it in looking at the long-term trends. In line with our former arguments we shall take the second approach, but the reader should remember the other point of view."

The present author, in emphasising crisis, uncertainty and spurts of growth in the long term economic process, finds himself on the opposite side of this important methodological divide. Saul's basic argument is that there is nothing particularly special about the years 1873 and 1896 such that the period in between can be regarded as a unified period of depression. The argument here criticises the notion of the Great Depression from an opposite angle; the years from 1873 to 1896 need to be *subdivided*, not assimilated into a longer time period, in order to understand what is going on. In particular, the 1880s can be regarded as very depressed in Europe but prosperous in the white periphery, while the 1890s, in contrast, were very depressed in the white periphery, but prosperous in Europe. The 1900s saw another reversal of this pattern. It is this chequer-board mosaic of tendencies that is destructive of the notion of a unified 1873-96 Great Depression, and not, it is suggested, the argument of Saul.

94. Boot (1984) is very illuminating on this critical post-slump period.

95. The main early discussion was Kuznets (1930), although as Abramovitz (1961) points out, discussion of the intermediate cycle was "in the air" at the time, with Wardwell (1927) working on the same problem, but publishing slightly earlier. The present author has not had the opportunity to inspect Wardwell's book, but to judge by the addendum in Kuznets (1930 pp.265-266), Wardwell based his idea of the intermediate cycle very much on the idea of cyclical overcompensation outlined in section 2.4 above (p.120, cyclical sequence (g)). Overoptimistic expansion in one cycle means that a subsequent cycle will have slower expansion. Wardwell uses a sequence of three business cycles to a major cycle.

Kuznets (1930) wrote of "secondary secular movements" rather than major cycles, emphasising the point (p.258) that these "secondary variations are not major cycles but rather specific, historical circumstances," it being reasonable firstly to expect that major exogenous shocks do not come at regular intervals, and also, Kuznets argues, that the processes of exaggeration and retardation of an initial disturbance, do not necessarily operate on

a regular time-scale. In later work, Kuznets (1973, 1979, etc.) paid considerable attention to the statistical examination of the relation between population growth, income growth and the long swing.

96. These *inverse* swings were noted by Cooney (1949) in connection with levels of building activity on either side of the Atlantic. The basic analysis was expanded considerably by Cairncross (1953), Thomas (1954, 1973), Lewis and O'Leary (1955) and Habakkuk (1962). Thomas placed considerable emphasis on the idea of a single interlocked "Atlantic economy" while other writers, such as Habakkuk, tended to emphasise domestic swings in single countries. Thomas's approach seems more productive, but one suspects that it is even more profitable to use a world-systems type of approach, and examine the patterns of internal development of, and the international relationships between, the European core, the white periphery (with the USA rapidly advancing to core status) and the black periphery. The inverse swings between core and white periphery were particularly noticeable in demographic series and construction series, which themselves are responsive to waves of migration. These waves of migration arise from a complicated set of forces, such as excess saving in Europe seeking investment outlets, demographic pressure in Europe, labour shortages and surplus land in the periphery. Waves of population migration are closely phased with waves of capital export.

97. Indeed the 20 year cycle was first identified from an examination of American statistics (Kuznets 1930, which also includes statistical series on European production and consumption). Perhaps the most familiar of all the time series is the graph showing UK domestic investment, or some indicator of it, with pronounced cyclical peaks in the 1870s and early 1900s and troughs in the 1880s and late 1900s, this being compared with a time series representing either capital exports or level of economic activity in the periphery, in which the phasing of peaks and troughs is reversed (e.g. Thomas 1973 p.97, Ford 1965 p.23). Statistical series covering a wide range of other indicators in the international economy, and showing the Kuznets swing, are presented in, for example, Bloomfield (1968), Thomas (1973).

98. Ford (1971 p.658) also attempts to divide waves of investment into phases, based on the Argentine experience. The sequence is essentially one of upswing, speculation, over-expansion, crisis (1890), maturing of earlier investment projects and renewed expansion. See note 109 below.

Abramovitz's scheme, outlined in the text, is of particular interest because of the parallels with the model of the 50 year long cycle, divided into periods of depression, recovery and fast growth, developed in the main text.

99. See, especially, Thomas (1973).

100. One simply needs to look at an atlas and examine the land area of Canada, the USA, Argentina, Australia and New Zealand, and compare that with the land area of Europe to gain some idea of the potential size of the total resource base. Even if an area might not be suitable for agriculture, it might still have important mineral reserves. The pace of development was not even, however. One possible model, bearing in mind that Europe at this stage would always be having a considerable surplus of population, is that in the early 19th century the pace of development would be set by the

availability of European capital and labour, while in the late 19th century, with much higher European incomes and savings, and thus ample capital reserves, the pace of development was set by the levels of investment the peripheral economies could absorb.

101. Abramovitz (1961 p.226), Kuznets (1930 p.258). See also note 95 above.

102. See, for example, Kuznets (1958).

103. Deane (1979 pp153-71, especially pp.55-56) indicated the almost bewildering complexity of patterns of trade at this time. Simplifying slightly, weapons, hardware and spirits from Britain and calico from Europe were exchanged for West African slaves, who were then sold to the West Indies, where sugar, cotton and other goods were bought. African gold and ivory were traded for tropical goods from the East and Near East, which were sold in the Baltic for timber, iron, etc. The coming of the Industrial Revolution added still more links to the chain of trade. Clearly such a pattern of trade required the development of both a sophisticated financial economy (in London and other major port cities) and the development of various forms of colonialism. Cain and Hopkins (1986) examine in more detail the ways in which post-1688 "gentlemanly capitalism" were embedded in the domestic economy, and how "old colonialism" developed from various internal economic and political impulses.

104. "After 1850, as one form of gentlemanly capitalism began to fail, another rose to take its place." (Cain and Hopkins 1986 p.525). There was an important shift, as Cain and Hopkins (1987) emphasise, from protected trade in commodities to free trade and heavy movements of financial capital. In the new colonialism "investment abroad was no longer confined to entrepots and coastlines; and railway companies (many with headquarters in the City) began to develop the interior of continents which had hitherto proved impenetrable" (Cain and Hopkins 1987 p.11).

105. In any *economic* account attention needs to be concentrated on the white periphery (Australia, Argentina, etc.). In such countries, empire was relatively informal. In any *political* account, more attention would be given to the black periphery, and such factors as the 1880s rush for Africa in which a more formal political control was initiated, and where, as Munro (1984) points out, there was a complicated mix of economic and political motivations. This account, being an economic account, concentrates on the white periphery. See also chapter 1, notes 40-41.

Edelstein (1982) is a recent attempt to unravel the complicated structure of domestic and foreign investment during the period of "high imperialism."

106. See note 96 above. Reference to table 2.1 clearly indicates, for example, slow growth in the UK in the 1880s and 1900s, while growth in the periphery was faster than average in precisely these periods.

107. There are always complications in defining home investment and foreign investment on a basis which is both comparable and operationally useful. Edelstein (1982 pp.30, 313-314) shows net foreign lending as exceeding gross domestic fixed investment in the last few years before the First World War. On average, though, domestic investment stood at about 7% of national income and net foreign lending at about 4%, but with each series swinging sharply,

and inversely. A series of peaks and troughs may readily be noted:

	Foreign lending as % of domestic investment
1861	19
1872	85
1877	7
1888	102
1901	9
1912	124

(based on Edelstein 1982 pp.313-314)

This basically indicates the phases of the inverse Kuznets cycles, although the *volumes* for foreign investment peaked slightly later (1890, 1913).

108. Edelstein (1981 pp.75-83) suggests that on balance pull factors (the attraction of the periphery) outweighed push factors (low profitability at home, high rates of saving) in drawing investment abroad. There has been a long-running debate, summarised in chapter 9.1 below, concerning whether such a massive export of investment was economically rational, and thus good for the economy, or economically ineficient, and thus bad for the economy. The argument implied in the text is that when *wages* are taken into account, a rational set of decisions by investors to export capital might have sub-optimal results at the national economic scale.

109. Ford (1971) outlines the basic patterns of development in the Argentine economy prior to financial collapse. Between 1878 and 1881 military expeditions had subdued the native population, making the extensive and fertile Pampas "safe" for cultivation. A wave of railway construction was needed to open up the territory, and this provided a major outlet for British investment at a time when prospects in the European economy were gloomy. This led to speculative mania in the late 1880s. In railway construction, there are considerable lags between the raising of funds and the increase in physical capacity, and further lags before the areas opened up are economically developed. Between 1889 and 1891 the Argentine economy was precariously based, with foreign debt-service charges reaching 60% of export proceeds, and with the long-term benefits of railway construction not yet filtering through. The result was a financial collapse, although the Argentine economy later picked up as a result of the improved physical infrastructure.

For the impact of the Baring crisis, see Flamant and Singer-Kérel (1970 pp.38-40).

110. Overborrowing and overexpansion in the late 1880s was not confined to Argentina; Australia, for example, was going through a similarly unstable boom (Boehm 1971). The Baring crisis acted as a severe initial warning about the dangers of colonial overexpansion (Boehm 1971 p.321), while another international banking crisis struck in 1893, when the USA economy went into deep depression.

111. For the USA, see Hoffman (1970), also Grant (1983). Hoffman (1970 pp.108-109), while recognising the difficulties of dealing with early unemployment figures, estimates that in the winter of 1893-94 industrial unemployment stood somewhere around 17 to 19% For Australia see Boehm (1971).

112. Some of this literature will be discussed in chapter 9. There are a large number of long-standing controversies about the British economy in the late Victorian and Edwardian years, based largely on

the question of whether late Victorian Britain failed economically, and if so, why.

113. See especially Gourvish (1980), also Mitchell (1964), Hawke (1970).

114. See chapter 3.3 below. Cousens (1960 p.119) suggests that 800,000 people (out of a population of 8,000,000) died of starvation or famine-related disease in the late 1840s, and that about 1,000,000 people emigrated. Table 3.3 shows that the population of Ireland fell by 1,600,000 between 1841 and 1851. Irish migration during the famine and subsequent decades has been extensively discussed (for example Carrothers 1929 pp.186-206 and Miller 1985 provide different approaches); the detailed impact of the Famine *within* Ireland perhaps less so. General accounts are given by Edwards and Williams (1958) and by Woodham-Smith (1962); Mokyr (1983) essays a quantitative historical approach.

The Great Famine was undoubtedly an extremely important watershed in Irish economic history; it could hardly be otherwise, having brought a period of rapid population growth to the end, and having initiated a period of decline. Yet precisely because of its great importance, the effect of the Famine on the structure of the Irish economy can easily be stated in too extreme terms. Goldstrom (1981 p.156) criticises "the popular story" that "the destructive force of the Famine snapped all links between (pre-Famine and post-Famine Ireland) so that economic and social developments are invariably given a pre-Famine or post-Famine label." There would seem to be more than a touch of 1960s style revisionism here ("Not until the 1960s was the watershed theory subjected to close scrutiny;" Goldstrom 1981 p.157). The obvious way to treat the Great Famine is as an *exceptionally* severe slump, following a period of over-rapid population growth, based on an unstable agricultural structure, and representing an economic depression on which the potato blight was superimposed. Because of long-standing weaknesses in the economy, an intense and specifically Irish slump was endured at a time when the British slump had already blown itself out. Any slump occasions immense changes in economic structure, with old activities contracting sharply and niches being created for the growth of new activities. Even in a slump as severe as the Great Famine, however, there will be *elements* of continuity between pre-slump and post-slump periods; it is not as if *all* economic activity disappears in the slump. That certain elements of continuity may be found is thus not a sufficient argument against the case that the Famine represented, in fundamental respects, a great divide as well as a great tragedy.

115. Quotes, and summary, from Matthews (1954 p.2).

116. Checkland (1964 p.8).

117. See for example Smart (1910, 1917), Gordon (1976, 1979). Adams (1932/1965) also examines in detail the course of agricultural depression in the post-Napoleonic decades, and the various discussions among policy makers which resulted. The timing of this work is noteworthy; Adams, an American writing at the trough of the Great Depression which had hit American agriculture so severely (note 75 above) was attempting to draw parallels between the contemporary situation, with a war-time agricultural boom followed by a long depression in agriculture, and the state of British agriculture after the Napoleonic boom between 1793 and 1815 (see especially Adams 1932 pp.vii-xiv).

118. Various price series may be cited. Jevons (1865), in an early attempt to produce a series of index numbers from the price variations of commodities noted by Tooke (1838/1928), shows that, with 1782 prices being set at 100, the 40-commodity price index stood at 93 in 1792, and peaked at 157 in 1809, falling back to 91 in 1816; this corresponds to an inflation in the war upswing of an average of 2.0% per annum (although with much sharper internal fluctuations), followed by a deflation of (-)7.5% per annum. This clearly represents a very sharp fall in prices.

Prices for domestically produced foodstuffs fluctuated far more than those for imports or industrial materials. The corn index (wheat, barley, oats, rye, beans, peas) stood at 110 in 1792, increasing to 252 in 1800 (+10.9% per annum), falling back to 123 in 1803 (-21.3% per annum), increasing to 221 in 1812 (+6.7% per annum) then back to 114 in 1815 (-20.0% per annum), then up to 203 in 1818 (+21.2% per annum), then down to 92 in 1822 (-18.0% per annum) before starting to stabilise at about 130. Such sharp fluctuations, followed to a lesser extent by the price index for meat, indicate an unusually severe degree of disruption to the agricultural economy. The price index for metals, in contrast, fluctuated between 96 (in 1815) and 159 in the same period.

See also the discussions in Adams (1932 pp.30-69).

119. See for example Smart (1910). Another factor also needs to be noted, the depression in manufacturing. Smart (1910 pp.490-491) notes that "among the manufacturing classes the distress was as extreme as it was unexpected. During the war, England had been preparing to be the "workshop of the world" and vast stocks of manufacturing goods had been accumulating in the warehouses waiting for the opening of the markets by peace. But .... England required no less than the world for its market, and the continent, exhausted by war was too poor to pay .... accordingly .... the European markets were oversupplied."

The outstanding contemporary analysis of the post-Napoleonic depression was that of Malthus, towards the end of his *Principles of Political Economy* (Malthus 1836 pp.413-437; first edition published 1820). In a sense this can be regarded the first Keynesian analysis of an economic depression; Keynes himself fully acknowledged his intellectual debt to Malthus (Keynes 1933/1972 pp.71-103, 1936 pp.32, 362-364).

Malthus starts by emphasising that the problem was not so much that capital is deficient compared with population (a situation that would be remedied by a spontaneous expansion of the capital base) but rather that "both labourers *and capital* may be redundant, compared with the means for employing them profitably" (Malthus 1836 p.414; emphasis added). To support this, Malthus notes that the demand for new capital at the time was slack rather than intense. Malthus suggests a situation in which even if there were mass unemployment ("distress of the labouring classes") there would be "no pressing and immediate demand for capital, because there would be no pressing and immediate demand for commodities." (Malthus 1836 p.415). Further, if capitalists tried to remedy the situation by saving from revenue to add to capital, this would only exacerbate the problem, and add to the outflow of capital.

Malthus (p.416) visualises the post-Napoleonic years in terms of "a very unusual stagnation of *effectual demand*" (emphasis added; cf Keynes 1936), "commencing with the extraordinary fall in the value of the raw produce of the land," which caused various chain reactions. The situation was aggravated by the "pouring in of fresh supplies of labour .... aided by the disbanded soldiers and sailors." Malthus

(pp.429-430) views the maintainence of unproductive labour not in terms "of a mass of sinecurists in State or Church, of large armies, pensions and titles for the priests," etc.(which is merely Marx's inaccurate parody; Marx 1972 p.51), but rather in terms of employing the poor in roads and public works (Malthus p.430). There is a close correspondence with the suggestions of Kahn (1931) and Keynes (1936).

The fact that Marx missed the basic point here suggests very strongly that Marx cannot be regarded as having anticipated the *Keynesian* theory of effective demand. To have anticipated this theory he would have had to have fully grasped and expanded Malthus's theory, rather than just dismissing it as a partial and reactionary analysis. Meek (1953) hardly helps clear the air when he suggests that Keynesian analysis is wrong through following Malthus's "reactionary" formulations rather than Marx's "scientifically correct" formulations, though one can of course reverse the pluses and minuses and suggest a different framework in which, on this issue at least, Malthus and Keynes were right and Marx wrong.

There are several interesting questions which could usefully be taken further, and which the present author plans to investigate in a future work on Keynes. Despite all the voluminous literature on Keynes, relatively little has been said about detailed influences of Malthus and Keynes, and virtually nothing about *why* the theory of effective demand vanished, not just in the period of Ricardo's pre-eminence (see Checkland 1949) but also thereafter. It would seem that, removing Malthus's exaggerations of the problems created by the Poor Laws and by fast population growth, there would be two prongs to a Malthusian theory of demand-deficient unemployment. Demographically there was, during the late 18th and 19th century conditions, a massive rate of expansion in the size of the labour force, but because the pace of economic expansion varies according to the state of effective demand, and to the productivity of land and degree of accumulation of capital, and not according to the rate of increase of population, an excessive rate of increase of population will lead to unemployment. The "Malthusian" solution to this was to encourage emigration (Carrothers 1929, Johnston 1972) and to discourage population growth. The other prong to Malthus's writings on unemployment is, as this note shows, that unemployment can arise as a result of a cyclical deficiency in effective demand. Clearly whether unemployment is *primarily* demographic or *primarily* cyclical depends largely on the rate of population growth, but at all times both aspects need to be considered, a point of considerable importance when examining the empirical record on unemployment.

120. Checkland (1964 p.11).

121. One is reminded, also, of Marx's observation (Marx 1969 p.497) that Ricardo's economic work was conducted before the industrial crisis had come into being, leading Ricardo to underestimate the possibility of crisis in the capitalist system. Such an interpretation would require the 1816 crisis to be regarded as "exceptional", and not an inherent weakness in the capitalist system (Flamant and Singer-Kérel 1970 p.14). There is a problem of definition, though; how industrial does a country have to be in order to exhibit *industrial* crises? Undoubtedly agricultural crises were numerous in earlier centuries.

122. Checkland (1964 p.14).

123. ibid. p.19.

124. ibid. pp.18-19.

125. ibid. p.19. Matthews (1954 pp.106-113) outlines the 1830s railway boom, and notes (p.112) that 1838, 1839 and 1840 mark the peak years for construction (although the peak for promotion of new lines was in 1836). Matthews also speculates (p.116) that the significant rise in house construction in 1839-40 might have been largely due to the railway factor. In shipbuilding there was also a large boom in the very late 1830s (Matthews 1954 pp.118-120). In each of these industries there was an extremely sharp downturn between 1840 and 1842. Perhaps the most drastic effects of slump were felt by the hand loom weavers in the cotton industry (Bythell 1969; note 150 below).

126. Matthews (154 p.130).

127. ibid. p.214.

128. ibid. p.216.

129. Boot (1984 p.77) notes that recovery in the manufacturing sector started in the Spring of 1843.

130. ibid. p.4.

131. See also Mitchell (1964) and Hawke (1970).

132. Mitchell (1964 p.320).

133. Boot (1984 pp.33-39, 78).

134. Boot (1984). It should also be noted that the crisis of 1847 had little effect on the economies of the United States or Germany (Flamant and Singer-Kérel 1970 p.23).

135. Or similar terms. Hobsbawm (1975) takes 1848 to 1873 as his *Age of Capital*, the beginning of the period being marked by the 1848 Revolutions and the end of the period by depression. The notion that the third quarter of the 19th century could be regarded as a "good" period goes back at least as far as Knowles (1922).

136. Mitchell (1964 p.321).

137. Most notably Freeman, Clark and Soete (1982), Mensch (1979), Kleinknecht (1984a). Several of the papers in Freeman (1984) also develop Schumpeterian themes.

138. Mensch (1979 pp.130-136).

139. This reworking of Mensch's data is not meant to imply that the basic series is fully acceptable. Later discussion indicates that his time series is open to several basic criticisms, and that the "stalemates in technology" emphasised by Mensch are largely illusory. Solomou (1986) provides a more detailed critique, suggesting (p.103) that Mensch has used "an arbitrary selection procedure from an unknown population."

140. Lamfalussy (1961 pp.68-78, especially pp.74-78).

141. ibid. pp.79-94.

142. Kondratieff (1926/1978 p.53). See also section 2.2 above.

143. Other writers have attempted to produce alternative series for the timing of basic innovations, for example van Duijn (1983),

Kleinknecht (1984b).

144. Jewkes, Sawers and Stillerman (1969 p.52). That these authors regard the 1880s as a heroic age quite probably introduces an important bias into Mensch's figures, which were taken from listing the case studies of Jewkes et al. It would be over-fastidious to demand that any series of case studies should be so arranged as to avoid any temporal bias whatsoever, but great care is needed if a series of case studies is used as a statistical base.

145. Schmookler (1966 pp.228-230); see also Schmookler (1972), and Freeman, Clark and Soete (1984 pp.57-60) for an updated graph.

146. See for example Figs. 2.2, 2.4. The sharp reduction in the rate of productivity growth since 1973 (Matthews 1982, Maddison 1982) corroborates this impression.

147. The basic point is that innovation, like any other type of investment, is not cost-free and that the firm must calculate whether prospective income is likely to meet the costs at a satisfactory rate of profit. Neither should be forgotten that a firm, in introducing a new product, might well be undercutting the market of its existing products, and the firm might well refrain on these grounds from innovating.

148. The Bell (1974) thesis of "the coming of the post-industrial society" is not regarded here as convincing. Bell's thesis is based on the idea that at some stage a society matures and becomes a modern, capitalist, industrialised society, but that any later development is in the direction of a post-modern, post-capitalist, post-industrialised society (Bell 1974 pp.49-54). From this piece of post-modernist prophecy comes the notion that a stage is coming in which the rise of the service sectors will reduce the significance of industrial employment in the advanced economies to roughly the same level of significance that agriculture currently has. In criticising this notion, Gershuny (1978) suggests that the replacement of services by goods which allow service tasks to be conducted within the household (washing machines instead of laundries, cars instead of railways, etc.) is a more important factor. It is probably best to regard the industry-services question as indeterminate, there being a complex of conflicting forces involved. What needs to be emphasised most strongly is that a period of declining employment in manufacturing does *not* necessarily imply that a post-industrial society is emerging. One may regard post-industrialisation as a process in which high rates of economic growth are maintained, with the bulk of that growth taking place in the service sector, and with industrial employment declining as a result of the falling proportion of total demand being accounted for by goods, as opposed to services. The situation in Britain in the 1970s and early 1980s was more one of deindustrialisation (see Blackaby 1979), in which economic growth was slowing down, and industrial employment was declining without matching increases of employment in the service sector. These two concepts need to be clearly distinguished.

149. See chapter 6 below. The large increase of employment in the miscellaneous services and distributive trades since the early 1970s is regarded as being largely due to the high degree of slack in the labour market, as more people are prepared to accept service sector jobs at a low wage. This hardly represents the development of Bell's high-technology post-industrial society.

150. Bythell (1969) provides the most comprehensive account of the rise and fall of the hand loom weavers, on which the following account draws heavily. He emphasises that far from the hand loom weavers representing a labour aristocracy (which might be regarded as the traditional view), hand loom weaving was often casual in nature, with a large proportion of weavers alternating between agriculture and cotton weaving. Spinning was more fully industrialised. The possibility of increasing the efficiency of production by the development of machine weaving was recognised in the late 18th century, yet there were several technical shortcomings to be sorted out, and it was not until the 1820s that the diffusion of the power loom gathered pace. That the removal of an important bottleneck in production took place in a long cycle downswing (between about 1825 and 1843) meant that the decline of employment in hand loom weaving was exceptionally severe. The hand loom weavers had already been highly vulnerable to the depressions of the Napoleonic and post-Napoleonic years, while the coming of the power loom added a significant extra problem. The basic pattern was that there was considerable investment in power looms during years of boom, but considerable distress amongst the hand loom weavers in years of depression. Ultimately the hand loom weavers were forced to leave the industry and seek other occupations, possibly in the factories. Bythell suggests that considering the severity of the circumstances this process took place with remarkable smoothness, with persistence of the dying trade, and long-term unemployment, being found chiefly in the more remote areas in the north of Lancashire.

151. For example, Baker (1976), statistically summarised by Freeman, Clark and Soete (1982 p.62).

152. See Nevens and Hill (1954) for a detailed business history account.

153. Freeman, Clark and Soete (1982 pp.48-49).

154. Mensch (1979 pp.124-128).

155. Freeman, Clark and Soete (1982 p.67).

156. For example Dennison (1939, especially pp.138-156), and Royal Commission (1940 pp.36-50), where the point is made that fundamental to the geography of industrial change in the inter-war period was the decline of old industries in the North and the rise of new industries in the South. Chapter 4 below attempts to expand this analysis.

157. The old-new dichotomy is central to Richardson's view of the inter-war period (Richardson 1967; essays by Richardson in Aldcroft and Richardson 1969).

158. A similar point is made, in a slightly different context, in Dowie (1968) and Broadberry (1983). To define an industry as "old" or "new" is not to determine fully the performance of that industry.

159. Miller and Church (1979, especially pp.81-88). The car industry was not as depressed as, say, the cotton industry, but was certainly more depressed than the electrical goods industries.

160. It should be noted that under the industrial classification then in use, employment in motor repairs and garages would have been included under the vehicles manufacturing heading. Thus not all the recorded employment growth in vehicles took place in the

manufacturing sector.

161. See for example Rosenberg (1982 pp.3-8). If one considers the diffusion stage, and not just the innovation stage, one arrives at something near Lamfalussy's (1961) distinction between enterprise investment and defensive investment.

162. The number of telephone calls made in the UK expanded relatively slowly from 2,900 million in 1947 to 4,000 million in 1960, before increasing sharply to 6,300 million in 1964 and 9,600 million in 1969. The number of television licences held increased from 15,000 in 1947 to 4,504,000 in 1955 and 10,470,000 in 1960, after which the diffusion curve started to slacken noticeably due to most of the ultimate market already having been covered. 15,510,000 licences were held in 1970. (Figures from Mitchell 1975 pp.663, 669).

163. See for example the review by van Duijn (1983 pp.20-41). The basic idea of sigmoidal growth as being characteristic for industries, and indeed for other social and natural growth processes, is long-standing; a slow start is followed by rapid acceleration, followed by a slowing down of growth, and perhaps even decline, as natural limits to growth are approached. Kuznets (1930) suggested that retardation of growth in the more mature sectors would slow down growth in other sectors, which broadly corresponds to the interpretation of the downswing given here. Pasinetti (1981) suggests, however, that it might in principle be possible, with state intervention, to perpetuate high rates of growth despite retardation in older sectors; the role of product innovation is regarded by Pasinetti as crucial.

164. See for example the papers presented in Matthews (1982), also Wenban-Smith (1981). For a longer term perspective see Maddison (1982).

165. The statistics, collected by the Science Policy Research Unit, upon which Table 2.4 is based, were derived from an interview programme amongst technical experts in the industries involved, rather than from any existing written record (Freeman, Clark and Soete 1982 p.51).

166. Even as late as 1959 Matthews (1959 p.3) could note that "in the typical boom output and prices both rise, and in the typical slump output and prices both fall", the term slump being used to indicate what would here be described as a recession. The persistent expansion of prices up to the mid-1960s indicates a very prolonged boom. Background conditions changed sharply in the late 1960s, as the main text emphasises.

During the inter-war slump, when prices were falling sharply (with the cost of living index dropping by 7.8% in 1930, and the cost of food dropping by 13.1%; *Historical Abstract* Table 89), Kahn (1931 p.178) notes the "extraordinary fatuity" of the objection to relieving unemployment by national development that prices would rise; he emphasises that *any* improvement in economic conditions would cause prices to rise. Further back still, prices were falling in the "Great Depression" of the 1870s and 1880s, and were rising again as the economic recovery gathered pace in the 1890s (Table 2.10, Fig. 2.6).

167. van Duijn (1983 pp.59-73, especially pp.59-60).

168. For example, Clark (1932, 1937), Meade and Stone (1944), Stone (1947), the last providing the most detailed early treatment of the standard methods used.

169. Various writers, such as Landes (1969 pp.233-234) and van Duijn (1983 p.73) have pointed out that the graph for British prices in the 19th century tends to show a long-term tendency to decline, dating from the Napoleonic wars, with a brief rise of prices in mid-century, rather than any long cyclical pattern.

170. Phillips (1958) provides the first discussion, considering the period from 1861 to 1957. Diagrams showing the continuation of the basic Phillips relationship up to the mid-1960s and its lapse thereafter are fairly common, for example Hazeldine (1984 pp.13-21), Sinclair (1987 p.14), and for the USA, Bowles, Gordon and Weisskopf (1984 p.22).

171. This term came into widespread usage in the mid-1970s, by which time the phenomenon described had become highly conspicuous. A.K. Cairncross, in Bullock and Stallybrass (1977 p.596) attributes the coinage of this term to Ian MacLeod, indicating perhaps a very early 1970s origin. It is hoped that the making of a distinction between "classical inflation" and "stagflation" helps add precision to the latter term.

172. Crouch addresses the question of inflation more directly in an essay in Hirsch and Goldthorpe (1978).

173. See also Soskice (1978).

174. Crouch and Pizzorno (1978 pp.36, 105, 202).

175. Precisely because of the conventionality of the standard wage-push theory, there are too many references to list in detail here. See however Vines, Maciejowski and Meade (1983 p.3) for the notion that overambitions claims for rises in money incomes faster than the rate of productivity increase are responsible for the inflationary spiral. The resulting policy response, tried several times through the 1970s with moderate degrees of success, has been the "incomes policy" in which policy measures are taken to restrict the rate of growth of wages.

It is not clear why "excessive" wage claims should be regarded as the culprit behind accelerating inflation. In a steadily growing economy, both wages and profits would increase at a rate corresponding to the rate of productivity growth plus the rate of inflation (assumed to be low but steady). If wages rise slightly faster than this for a short period, then the only way this can be said to give an inflationary push is if the rate of profit is sticky downwards. Otherwise all that happens is a slight shift in the share of total product from profits to wages.

The situation becomes vastly more complicated, and more lifelike, if the assumption of steady growth, presumably at the Harrod natural rate, is dropped, and rates of output growth are allowed to fluctuate significantly and to diverge from the natural rate of growth. One complication is that wage *rates* and *total* wages will show different relationships to total profits through the business cycle, since total wages are increased by an increase in employment, because of the increased number of wage-earners, while the effect of increased employment on wage rates is problematic. This asymmetry between capital and labour would appear to have some important

implications for any downswing. If money wage rates and money profit rates are flexible downwards, as in the case of a classical depression, prices tend to fall and real wages for those in work actually tend to increase. In a stagflationary recession, competing groups in the economy are more firmly entrenched, leaving very little room for downward flexibility, and the maintainance of pressure on a weak productive base pushes prices upwards. This is a response to recession, not a matter of workers, employers or the state being, in abstract, too greedy.

176. Wage cutting was frequently severe in the USA in the early 1930s; see Brogan (1951), Chandler (1970 pp.33-42). There was also more modest wage-cutting, associated with a rise in real income, as prices fell, in the UK (*Historical Abstract* pp.40-41, 53, 79), while the most intense industrial disputes took place in the coal industry, a heavily unionised industry in very deep recession in which large-scale wage cuts were attempted, and resisted.

177. Figures based on Phillips' own graphs (Phillips 1958 pp.294, 296).

178. It is also possible to reverse the x- and y- axes, and to argue along similar lines that any attempt to force the rate of inflation below its "natural rate" will tend to shift the Phillips curve to the right, causing an unnecessarily high level of unemployment without necessarily reducing inflation. This possibility Friedman does not consider, yet it is of central importance. In all likely conditions except for recessions under a regime of classical inflation, the "natural rate of inflation" will tend to be mildly positive. Attempts to squeeze inflation out of the system, thus to push the rate of inflation permanently below its natural rate, will simply cause the Phillips curve to shift to the right, and create unnecessary increases in unemployment, without causing any permanent decrease in the rate of inflation.

179. Since in disentangling the record of British economic history much attention has had to be given to the question of events in areas outside Britain but which could be regarded as part of a British economy in the widest sense, perhaps some attention needs to be given to the notion of a world system, or a world economy. Attention is drawn in particular to the discussion in Wallerstein (1974 pp.15-18), which the next paragraph follows.

The idea of a world economy does not simply mean the sum of economic activity on every corner of the Earth. This basic point might not be so obvious when considering the late 20th century, with the tentacles of Western capitalism penetrating into all but the most obscure areas, but if one goes back 600 years, it would be difficult to see how one could meaningfully conceive of a single world *system* encompassing, for example, Japan, England and the Inca territories of South America. For a world system to develop, a core economy needs to expand and to bring a wide range of external areas into its basic economic orbit. There is not necessarily a single world system in existence at any one time; as Wallerstein (1974) emphasises, in feudal times there were several. Usually, however, they were transformed into empires (China, Persia, Rome, etc.) as a unified political structure developed. Perhaps the most significant feature of capitalism is that in breaking the need to develop a unified political structure, by offering possibilities of extracting surplus appropriation more lucrative than the collection of tribute, the capitalist world system would expand far beyond any area of unified political control. An *international* economic order comes into being, with core-periphery relationships developing at a variety of scales.

180. Wallerstein draws on Simiand for the use of the terms A-phase and B-phase.

181. Hatcher (1977 pp.21-26) notes considerable statistical difficulties in estimating mortality during the Black Death, but suggests that in the light of current knowledge the most judicious estimate of the English death rate in 1348-9 would be between 30% and 45%.

182. Platt (1979 pp.144-148) maps the spread of the Black Death across Europe between 1347 and 1353, and notes the importance of trade routes in carrying the disease from its Himalayan origins across the Central Asian steppes and into Europe.

183. Hatcher (1977 p.31) readily admits that the economic and social history of the later fourteenth century is extremely puzzling, and that satisfactory explanations are still lacking. He notes, however, that "the often quoted epithet 'depression' fits the facts of the fifteenth century far better then those of the later fourteenth, while 'economic growth' can justifiably be applied to the later fourteenth but not to the fifteenth." This interpretation is followed in the text. Postan (1939, 1952) emphasises the fifteenth century as being one of decline, while Coleman (1977, especially pp.48-50) points to a substantial upswing following this depression, starting in the 1460s and gathering pace thereafter. London, Coleman notes, became a very important international centre during this long boom, and provincial port centres such as Hull and Bristol lagged. Antwerp at this stage was becoming Europe's pre-eminent centre of trade and finance.

184. This is a historical comparison, *not* a geographical, or cross-sectional, comparison. Areas with slow growth tend to be more crisis-prone than areas of fast growth.

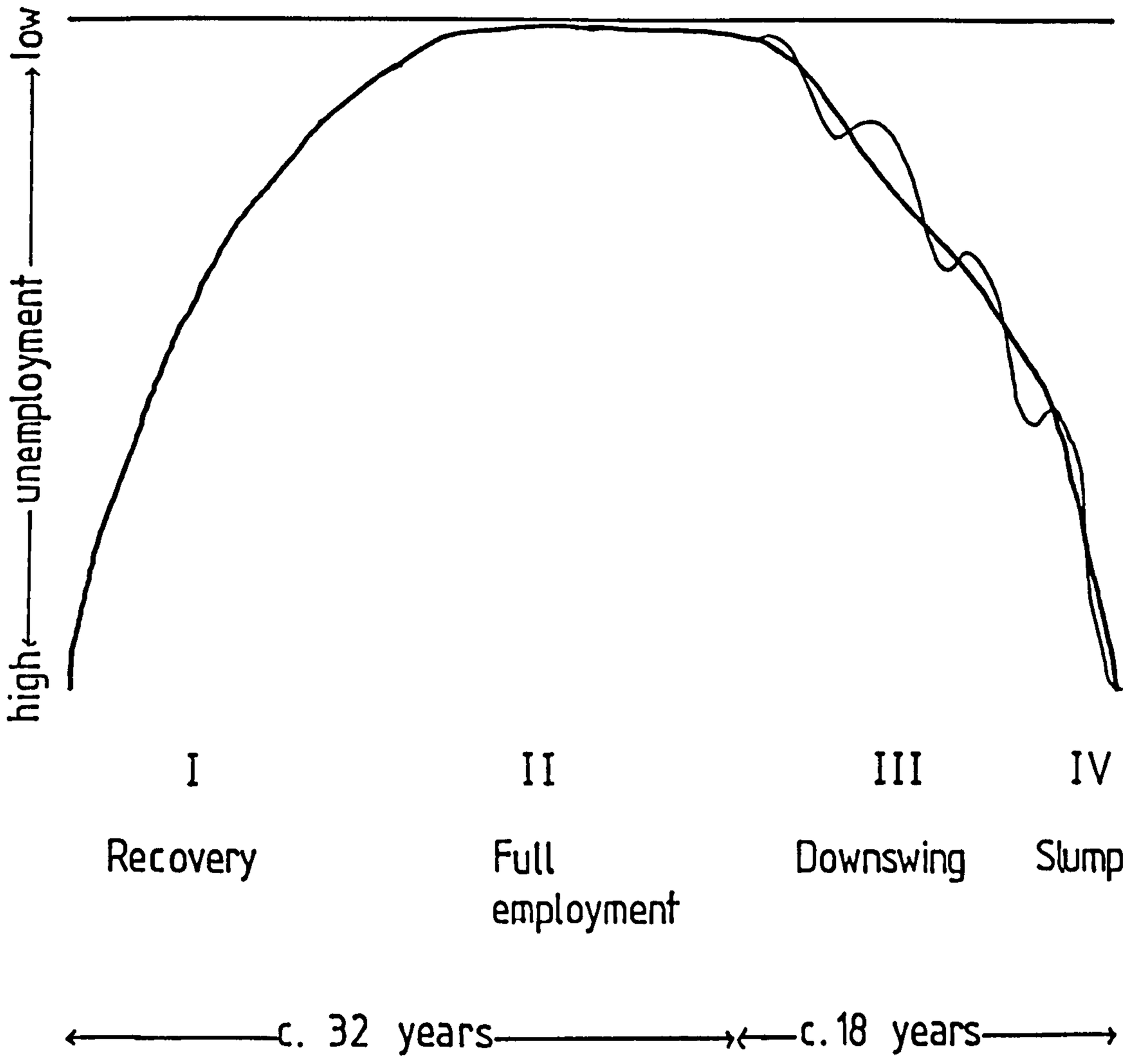
185. As Little (1976) points out, the interpretation of the middle half of the 18th century is complicated. He suggests (p.99) that it has been shown beyond reasonable doubt that there was a "deceleration" or "comparative stagnation" in economic development in the second quarter of the century. Little traces this back to a reaction to the pace of progress since 1660, and especially since 1690. The critical unanswered question is whether this can be seen in Kondratieff terms; there is no sign that Little himself directed his examination towards answering this particular question.

One of the main difficulties in establishing the existence of long cycles prior to the Napoleonic wars is the shortage of hard or even semi-hard data on year to year variations in the level of economic activity. In such cases it is necessary to rely almost exclusively on the written accounts of economic historians, which can create problems, especially if the historian referred to is predisposed to interpret economic changes primarily in terms of continuity. There is little scope, without a lot of hard work, for independently checking interpretations; one has to rely on finding a set of statements in a printed historical analysis which support or refute a particular interpretation of economic change. There is still much work to be done.

Two important challenges may be posed to the economic historians. The first challenge is to examine in depth the question of whether the basic interpretation of certain specific periods (of which the current author does not have specialised knowledge, e.g. the 1840s) is sound, and supports the interpretation of the long cycle presented here. Inevitably detailed analysis will reveal various misjudgements; it is hoped that these are minor, although it must be remembered that to *refute* a theory a substantial number of major

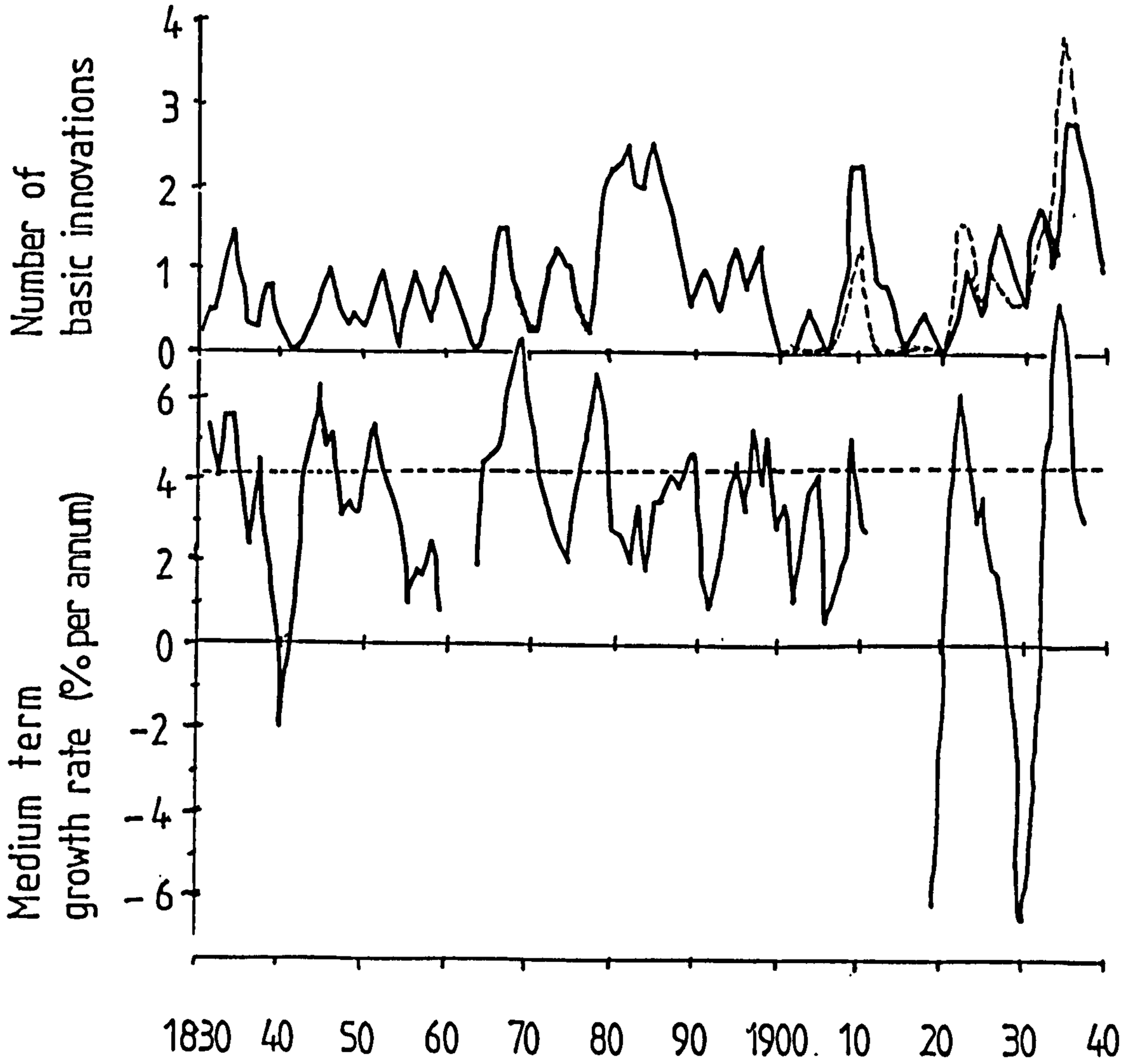
flaws and errors will have to be identified. The second challenge, and perhaps a more interesting one, is to see whether the detailed study of specific periods can be substantially enriched by the type of long cycle perspective being developed here. The following chapters may serve as an example of what can be done.

Fig 2.1 The Long Cycle; the basic form



The heavy line shows a smoothed form; the lighter line indicates cyclical movements in unemployment through the downswing of the long cycle.

Fig 2.2 Economic Growth and the Rate of Basic Innovation, 1830-1940



Sources: Innovation series: Mensch 1979; Freeman, Clark and Soete 1982 pp.48-49 (pecked line; alternative datings based on same sources as Mensch.

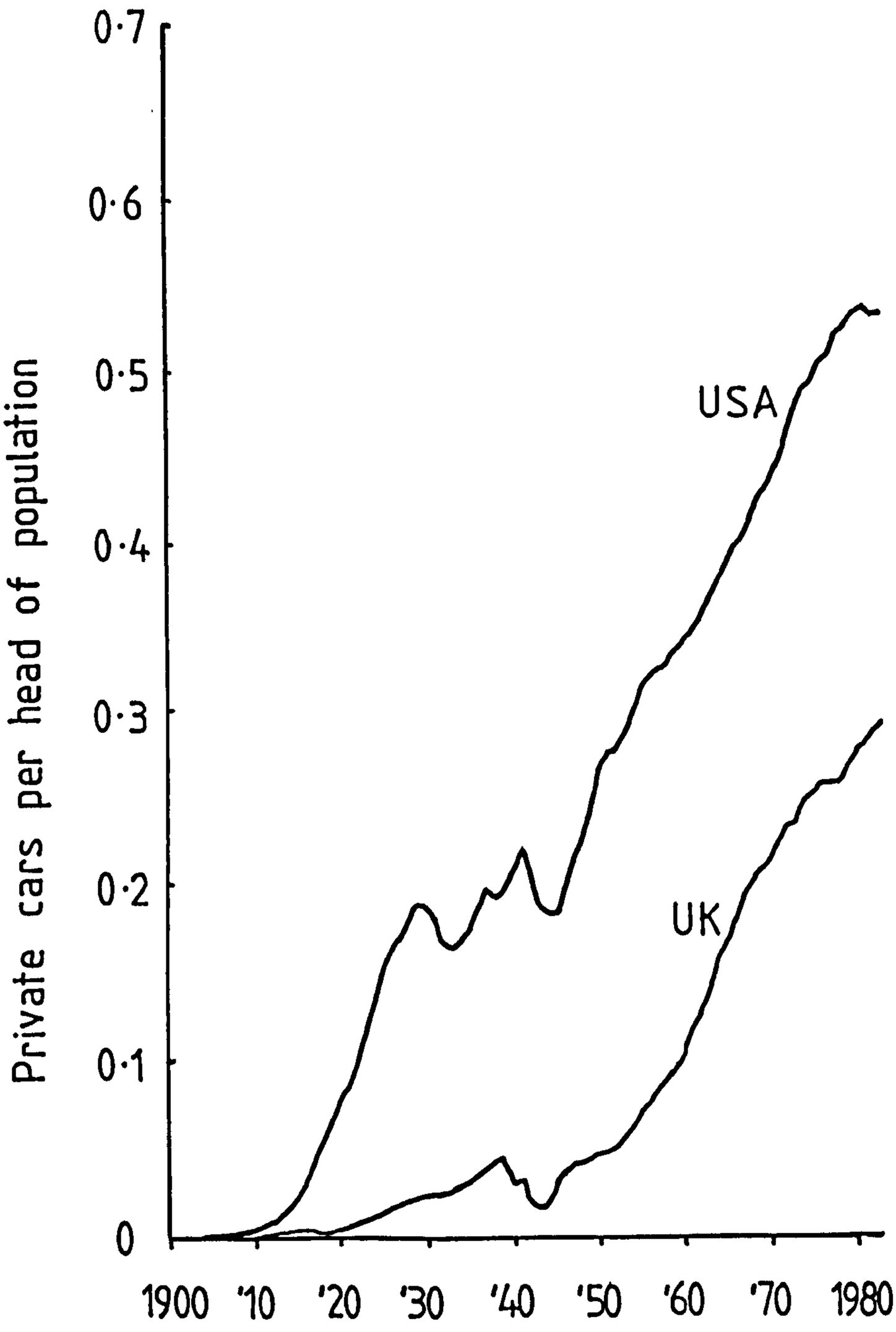
Growth rate: Arithmetic mean of UK and US figures based on series used in Table 2.1.

Each series uses a moving average; see text. In the innovation series this is to provide a slight smoothing of the data. A three year moving average is used, with the middle year weighted double.

In the growth series, the purpose of using a moving average is *not* to smooth the data, but rather to give an index for the economic incentive to innovate, argued to be closely related to the expansive potential of the economy. The growth rate cited for year t is based on the growth rate between year t-1 and t+2.

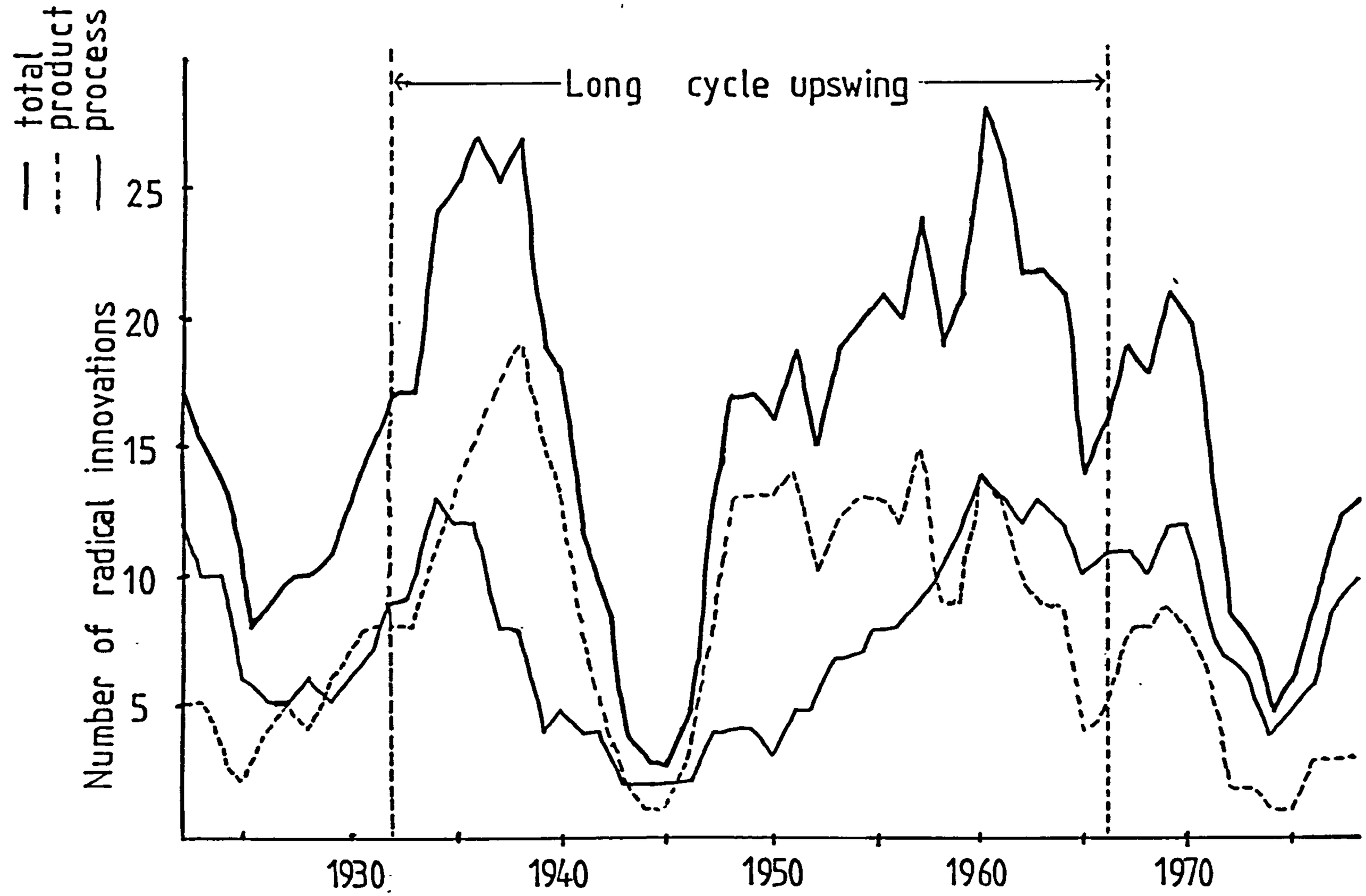
While this method can be refined, perhaps altering the lag slightly, the general impression is one of a good match between the graphs except for the period from the mid-1870s to the mid-1990s. All the main innovation peaks, except for that of the mid-1890s, are in periods of rapid economic growth.

Fig 2.3 The Diffusion of Car Ownership, UK and USA, 1900-1983



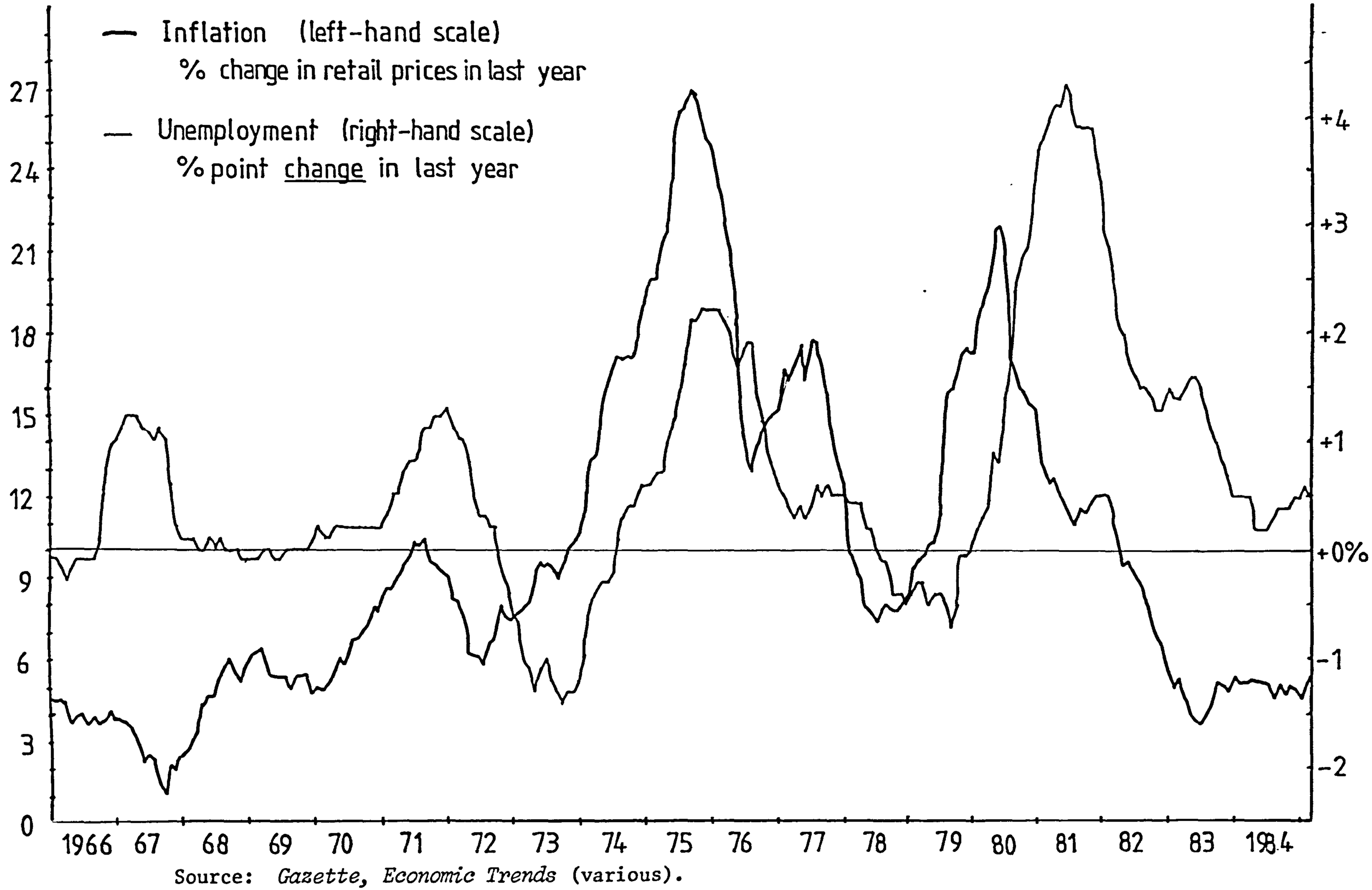
Source: Liesner 1985 pp.24, 34, 54, 64.

Fig 2.4 The Rate of Radical Innovation in Post-War UK Industry; after Freeman, Clark and Soete 1982



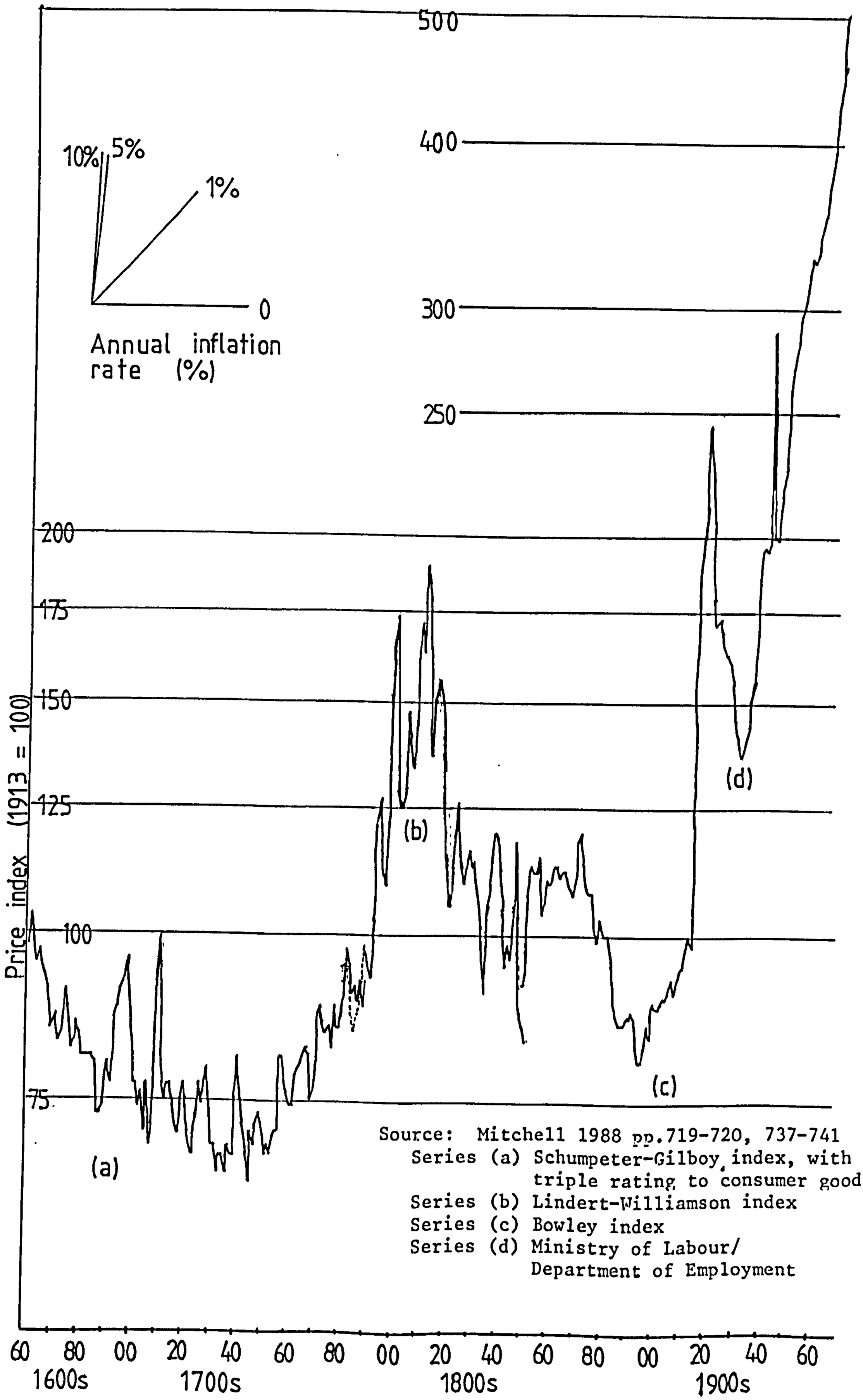
Source: Freeman, Clark and Soete 1982 p.52.

Fig 2.5 Inflation and Unemployment in the UK, 1966-1984



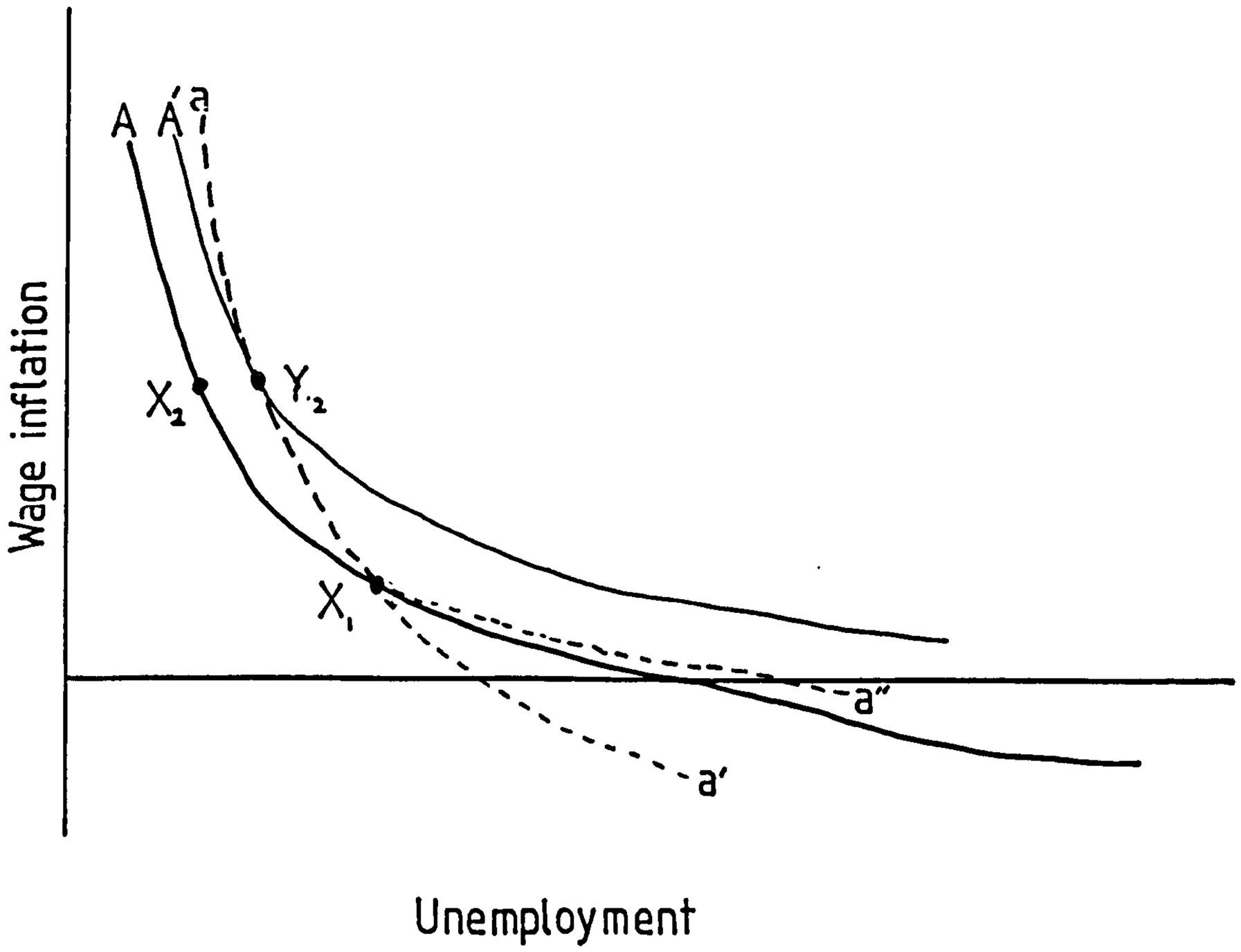
Source: *Gazette, Economic Trends* (various).

Fig 2.6 Long Term Price Shifts in the UK



Source: Mitchell 1988 pp.719-720, 737-741
Series (a) Schumpeter-Gilboy index, with triple rating to consumer goods
Series (b) Lindert-Williamson index
Series (c) Bowley index
Series (d) Ministry of Labour/ Department of Employment

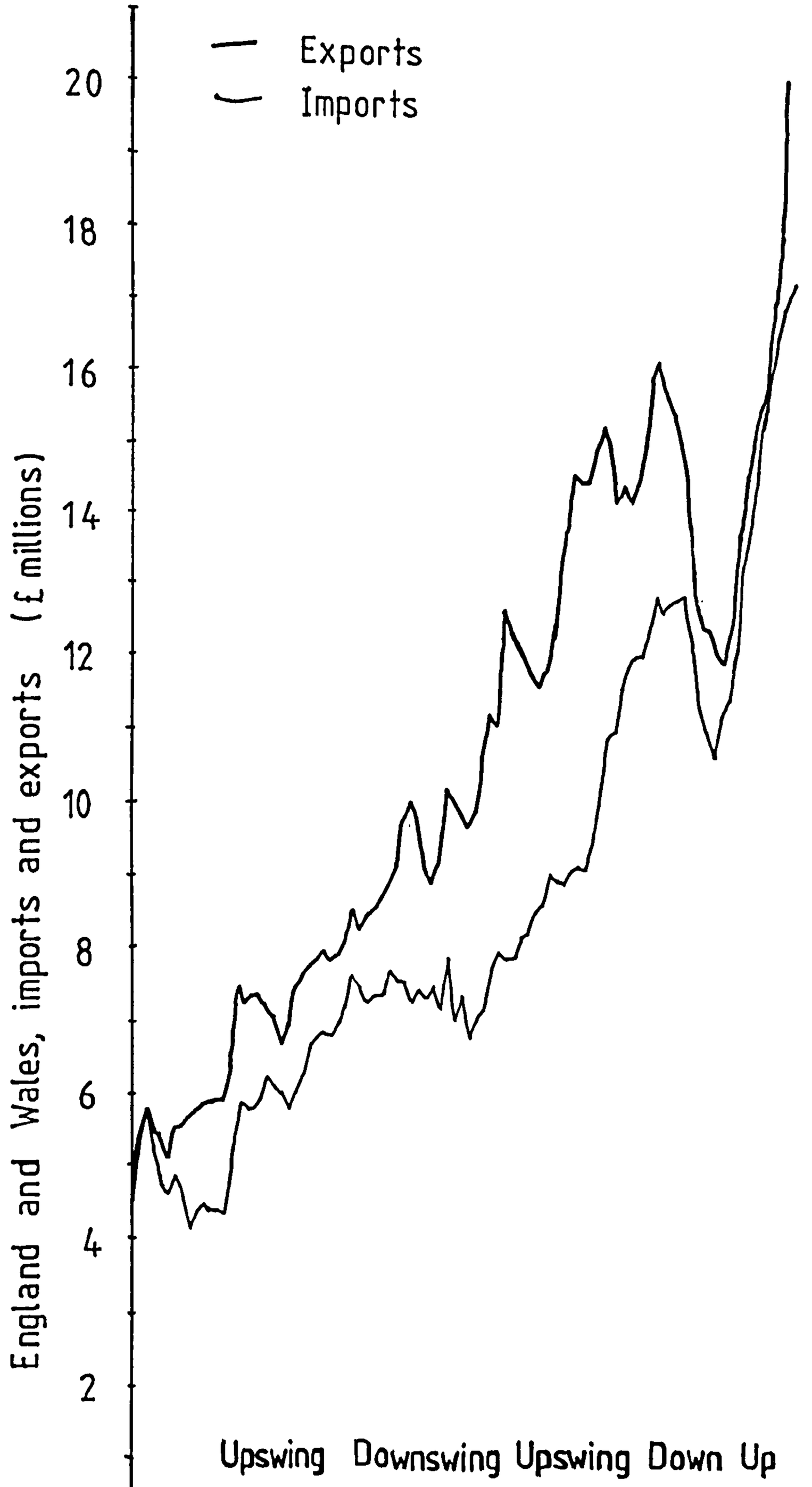
Fig 2.7 The Disintegration of the Phillips Curve



Solid lines represent historical curves, the spontaneous outcomes of past events. The short term prospective curve, as given by the peaked line, is less favourable, and dangers occur if the state fails to recognise this point. If at mid-cycle the attempt is made to shift the economy from X_1 to X_2, a position reached at a cyclical *peak*, a more likely payoff is indicated by the position Y_2, and the Phillips curve will have shifted from A to A'. If the "solid line" Phillips curve shifts continually to the right, the sequence of empirical observations will suggest a *positive* correlation between inflation and unemployment, rather than the expected negative correlation.

It is open to debate whether the form of the short term Phillips curve is a-a' or a-a'', thus whether attempts to deflate the economy below its equilibrium position improve the trade-off between inflation and unemployment, or further worsen it. The author's point of view is that if x- and y- axes are reversed, the short term Phillips curve would still give the appearance of being steeper than the long term curve, implying a curve of the form a-a''-, making it an impossibility to squeeze inflation out of the system in the absence of a spontaneous upturn of productive activity.

Fig 2.8 British Foreign Trade in the 18th Century



Source: Mitchell (1988 pp.448-449), relating to England and Wales only, but including trade with Ireland.

Smuggling was common in the 18th century, but does not appear in the "official" series for imports; it is thus invalid to use this graph as a statement of Britain's balance of payments position.

3 U.K. Regional Economic Change; data sources and methods of analysis

3.1 Introduction; the definition of regions

The discussion now turns to an examination of regional patterns of economic change through recent long cycles, in order to be able to link observable changes, past and present, in regional economies to the more general outlines of economic development presented earlier. To accomplish this it is necessary to have both a wide range of statistical series, preferably covering long time periods, and also detailed discussions of regional economic development in shorter periods, which can be related to particular stages of the economic long cycle. The primary concerns of this chapter are to collate regional economic time series covering long periods, and to provide brief initial interpretations which may provide a basis for more detailed examination in later chapters.

The statistics compiled here, and presented in appendix form later, are generally to be regarded as "reference statistics" (data compiled and stored for later use) rather than "demonstration statistics" (a subset of data being analysed for a particular purpose). This distinction, emphasised by Chapman and Mahon (1986), is important in that while the presentation of demonstration statistics is essential in the development of a reasoned argument on regional economic trends, such demonstration statistics are generally presented in such a way as to make it difficult to construct radically different interpretations from the limited and inevitably selective information presented in a "demonstration" table. In order to allow for the possibility that another researcher might wish to analyse a particular problem from a different angle, it is considered essential, for the purposes of fair practice, to present basic reference statistics, or at least to indicate where such reference statistics may be found. For example, much use is made in later chapters of demonstration tables showing rates of employment change by region over particular time spans; the presentation of the reference statistics in Tables A1 to A9 allow the reader to calculate statistics for different time spans, if he or she should consider that an alternative periodisation is more appropriate.

To save space, long time series which are readily available in a compact form elsewhere will not in general be fully reproduced, unless absolutely central to the argument, but in some cases graphical representations will be used, and reference made to the source material for the full data. The most important statistical abstracts for the period under consideration (the late 19th century onwards) are Department of Employment and Productivity (1971) (henceforth referred to as

Historical Abstract), Mitchell and Deane (1962) (see also Deane and Cole 1967), Mitchell and Jones (1971), Feinstein (1972) and Mitchell (1975). In addition, for any detailed examination of labour market trends, the various series presented in the officially published *Employment Gazette* are indispensable. All further references to this publication, or its direct predecessors under different names (*Employment Gazette, Minstry of Labour Gazette* etc.), will be cited as *Gazette*. For certain types of change over longer periods of time, notably those concerning shifts in population distribution, the decennial Census (1801-1981) provides important series. Lee (1979) has presented Census data on employment by county, from 1841 to 1971, in a compact form.

The data outlined in this chapter, and shown in various appendices and tables, are mainly labour market data, either directly (employment change, unemployment, etc.) or indirectly (population, etc.). In most cases the data have been presented at a spatially disaggregated scale, most especially at the regional scale, in order to see how the broad economic changes at the national scale affect, and are affected by, smaller spatial aggregates.

An important distinction in any discussion of British economic geography is that between core regions and peripheral regions, which may in approximate terms be seen as the division between South (core) and North (periphery). There are however various shades of distinction between and within the core and periphery, with the English Midlands in particular representing an intermediate case. In subsequent chapters, much attention is given to unravelling the implications of the North-South structure of the British regional economy, but here an operational definition is required.

The primary division made is that between the "North" (which includes Wales) and the "South". The current standard regions included in the North, thus defined, are Wales, the North West, Yorkshire and Humberside, the Northern region, Scotland and Northern Ireland (shortened to Wa, NW, YH, N, Sc, and NI respectively; see Tables A1 and A2). All these regions, except Northern Ireland, have either significant current employment in coal mining, or a substantial past history of employment in coal mining. In the 19th century these coal mining areas often showed considerable industrial development[1] although this early industrialisation was generally fairly poorly developed in employment terms in South Wales, where coal production was strongly geared to serving export markets and the iron and steel industry.[2] Northern Ireland represents a slightly different form of peripheral economy, with significant 19th century industrial development, particularly in the Belfast shipyards and in the linen industry, but with economic development lagging in the 20th century,

perhaps in part as a result of difficulty of access to the main U.K. domestic markets, resulting from the presence of a sea barrier.[3]

The boundary between North and South, operationally defined, runs along the Welsh border, then along the southern boundaries of Cheshire, Greater Manchester, the Yorkshire metropolitan counties, and South Humberside (Fig. A1). The area to the south and east of this line may broadly be regarded as the core, or South. In much of the later discussion a more restricted definition of the South, based on London and its hinterland, is required. This would imply a division between the South (South East (SE), East Anglia (EA) and South West (SW)) and the coalfield industrial zone of the Midlands (West Midlands (WM) and East Midlands (EM)). In future discussion, the narrower definition of the core is referred to as the South and the broader definition of the core is referred to as the South and Midlands. The Midlands represent in many respects the coalfield industrial portion of the core, there being no real history of coalmining near London, apart from the development of the relatively minor Kent coalfield in the 20th century. The relative proximity of the Midlands coalfield to the large Southern markets has encouraged the development since the late 19th century of a more dynamic and varied industrial system than in the periphery.[4] It has been noticeable that in significant respects the economic development of the Midlands has been far more in line with that of the South than with that of other coalfield industrial areas in the North, this being most clearly illustrated by the degree to which employment in the Midlands and Southern England expanded rapidly in the post-war "long boom", while remaining relatively depressed in the North. In recent years, however, the West Midlands have faced especially severe economic difficulties as the vehicles industry, on which the region's economic expansion has been largely dependent since the War, has undergone a sharp decline. In effect, the "core industrial" region of the West Midlands has suffered the decline of an industrial region, rather than the relative prosperity of a core region, although the East Midlands, despite being equally heavily industrialised, has escaped the worst effects of industrial recession (chapters 6 to 8 below).

The UK may thus be broadly divided into North, Midlands and South, with Northern Ireland being included in the North. It should be noted that all national statistics refer to the UK unless explicitly stated otherwise, and thus include Northern Ireland, or, before partition, the whole of Ireland. Any series which excludes British territory in Ireland, usually as a result of lack of data availability for Northern Ireland, is explicitly described as applying to Great Britain.

The division between North, Midlands and South allows for some useful generalisations to be made, but the regional scale is more useful for detailed analysis. Standard regions, as listed in Tables A1 and A2, have been used as the basic unit of analysis. In many cases analysis at a still more detailed scale would be useful, but the relevant data often simply do not exist at sub-regional scales, particularly in earlier periods.

The general principle used in naming the historical regions described in Tables A1 and A2 is for names to be given which are as far as possible consistent with the current naming of regions. In many cases, these names do not correspond with the contemporary titles of regions, although Table A1 allows the contemporary names of historical regions to be derived. This is an important point since quite often the earlier names for regions were highly misleading, with the pre-war North Eastern Division referring not, as one might expect, to the Durham and Northumberland coalfield, but, after 1936, to Yorkshire. Middleton (1985b p.37), presumably unaware of this data problem, reproduces a table from Fogarty (1945 p.15) of inter-war employment change by region, based on post-1936 regions, and erroneously concludes that the Durham and Northumberland coalfield was the fastest growing area in the periphery between the wars. This coalfield formed part of the *Northern* region, however, in which employment grew by only 2% between 1923 and 1937, and not, as Middleton assumes, part of the *North Eastern* region (i.e. Yorkshire), where employment grew by 14%.

As this example illustrates, care always needs to be taken to ensure that a spatial aggregate is correctly identified. It is admittedly an unusual error to misidentify a region completely, but it is quite a common problem that the boundaries of a statistical area may alter. At best, this can lead to problems of data-splicing in order to compare, for example, employment in pre-1974 regions with employment in post-1974 regions (a major change in local government organisation, involving the creation of new counties, having taken place in 1974). At worst, changes in the boundaries of minor statistical units may be made without notice, making comparisons between time periods extremely difficult. The problem of a lack of total consistency of travel-to-work areas between 1978 and 1981 has created various difficulties in the analysis presented in chapter 8, for example.

To avoid confusion, in the later text, the term "the South of England" refers to the aggregate of the current South East, South West and East Anglia regions (and earlier counterparts) while the term "Northern England" refers to the aggregate of the current North West, Yorkshire and Humberside, and Northern regions, or equivalents and does

not refer to the Northern region alone. Furthermore, to avoid clumsy circumlocutions, post-1974 Scottish administrative regions (Strathclyde region, etc.) are referred to under the generic term of counties in any discussion of a mixed group of Scottish regions and English and Welsh counties.

3.2 Key Labour Market Indicators

The primary concern here is with how differences in regional prosperity, and changes in differences in regional prosperity, are expressed in terms of labour market variables. The rate of employment change is clearly central in that this is the labour market variable most closely connected with aggregate patterns of economic change. The rate of change of unemployment is regarded as being less fundamental theoretically as it is itself largely controlled by the magnitude of changes in employment. One should not however expect a direct linear correspondence between changes in employment and changes in registered unemployment, since local declines in the level of employment may be expressed in a number of other ways, for example through concealed unemployment (early retirement, married women withdrawing into domestic labour, etc.) or through changes in the net migration pattern. The general direction of causality in the looser correlation which is to be found is clearly from employment change to unemployment change, rather than the converse. Differences and changes in the unemployment rate are *effects* of economic differences and changes, rather than *causes*.

The economically more dynamic areas of a country will generally tend to show faster rates of employment growth than less dynamic areas. In the short term, unemployment rates will tend to be lower in more dynamic regions than in less dynamic regions as regional differences in the rate of employment growth tend to be greater than any systematically converse regional differences in the rate of natural demographic growth of the labour force. If the direction of regional economic differences in growth is maintained through time, then one would expect that unemployment rates in the more dynamic regions would tend over a period of time to be consistently lower than those in less dynamic regions.[5] Regionally systematic currents of migration would be expected to reduce the size of unemployment differentials, as total migration from depressed to prosperous areas would be greater than total migration in the opposite direction, but so long as differentials in the rate of employment change are maintained one would not expect differences in unemployment to disappear completely, certainly not at the inter-regional level. Migration within a region is more intense than migration between regions, however, and differences in the rate of employment change at the sub-regional level are often fully compensated for, or almost fully compensated for, through systematic migratory flows. Thus contemporary London, with a long history of net employment loss, has an unemployment rate broadly in line with the rest of the South East, which has been expanding in employment, even during the slump in some places (see chapter 8 below).

North West England provides another example. Table 3.1 shows that in February 1981, the unemployment rates in Greater Manchester, Cheshire and Lancashire were almost equal, while unemployment rates in Merseyside were conspicuously higher. This general pattern has tended to persist throughout the 1970s and early 1980s. The obvious initial conclusion to be drawn is that the forces of depression in the downswing have hit Merseyside particularly severely, while Greater Manchester, Cheshire and Lancashire have been equally affected by the downswing. The evenness of unemployment rates in these three counties, however, concealed considerable unevenness in the rate of employment change; while employment had fallen by nearly a tenth in Greater Manchester between 1971 and 1981, in Lancashire and Cheshire employment was only very slightly lower in 1981 than in 1971. Such a pattern can only be explained by a considerable intra-regional redistribution of the workforce, and Table 3.1 shows that the population of Greater Manchester declined by 5% in this ten year period, while Cheshire and Lancashire showed substantial increases in population.

This redistribution of population in the face of a changing geography of employment is an extremely important factor in explaining the geography of unemployment. One can add, of course, that the geography of employment is also an extremely important factor in explaining the geographical distribution of population, and that the changing geography of employment strongly influences the changing geography of population (section 3.3 below).

Quite large spatial variations in the rate of employment change may result in only minor differences in the unemployment rate, or the change in the unemployment rate, as a result of migratory equilibriation. For example, when comparing the 1978 and 1981 Censuses of Employment (a data source described further in section 3.3), it was found that while several counties had an increase in the unemployment rate of 4.0 to 5.0 percentage points (percentage unemployment in 1981 minus percentage unemployment in 1978) the rate of change of *employment* in these counties varied from +9.9% (Grampian region) to -4.0% (Somerset), a considerably greater range (chapters 7 and 8 below). Migration is an important equilibriating factor when rates of employment change are moderate, but an exceptionally heavy rate of job loss can lead to unemployment rates being much higher in one place than another. Even so, a loss of employment of 18% in Merseyside between 1971 and 1981 led to unemployment being only five percentage points higher than in Cheshire, where employment remained steady over the period as a whole.

Migratory equilibriation tends to be much stronger within a region than between regions, in part because local and medium distance migration is much more intense than longer distance migration for a variety of

reasons, including availability of information on employment opportunities, cost and a general desire of migrants to remain close to their geographical roots, if possible. Since migratory equilibriation is weaker at an inter-regional scale than at an intra-regional scale, it follows that differences in the rate of employment change at the inter-regional scale are more likely to show through in terms of differences in the unemployment rate, than are corresponding differences in the rate of employment change at the inter-regional scale. Table 3.2, showing regional patterns of change in employment, unemployment and population between 1971 and 1981, may usefully be compared with Table 3.1 in this respect. There would appear to be a fairly well integrated system of migration within Southern England with unemployment increasing to an approximately equal extent in London, the Outer South East, East Anglia, and the South West, despite often strongly divergent employment trends. In the Midlands and the periphery, employment trends were considerably less favourable than in Southern England (London excepted). Migratory equilibriation has tended to dampen down increases in unemployment in these regions, and yet the process of equilibriation is far from complete; for a broadly similar, and high, rate of job loss, population in the North West declined by 2.8% between 1971 and 1981 while population in the West Midlands increased by 0.8%, differences which are reflected in the higher increase of unemployment in the West Midlands.

Patterns of migration are seen to be highly sensitive to patterns of employment change, both at the intra-regional and the inter-regional levels. Later analysis in subsequent chapters suggests that this can be the case even over relatively short time periods. The question of the detailed composition of migration under different economic conditions is one which is undoubtedly of considerable interest, but which cannot be followed in detail within the scope of this thesis;[6] emphasis here is placed more on total volumes. At this aggregate level, it can be stated that any substantial expansion of jobs will encourage the immigration of labour, particularly from less expansive areas, while reducing the need for local labour to emigrate. Conversely, a high rate of job loss, particularly under conditions of high unemployment, will tend to act as a strong disincentive to immigration and as an incentive to emigration. The "pressure gradient" for migration is likely to be particularly strong if, as in the mid- to late 1930s, there is a conjunction of expanding regions at full employment, which require fresh labour in order to fuel further expansion, along with depressed regions with very high unemployment. In such circumstances, there would be a pronounced flow of labour from depressed to prosperous regions, even if the current variations in the rate of employment change are relatively small. This case is discussed

further in chapter 4.[7]

It quite often happens that under conditions of full employment nationally there may be a substantial job loss in a local area, leaving that area temporarily depressed. This sets up a large pressure gradient for migration and leads to a persistent and strong outflow of migration from the affected area, eventually reducing the unemployment rate to more "normal" levels, but probably still slightly higher than elsewhere. Analysis in chapter 5 suggests however that it is the rate of expansion in low unemployment areas, rather than the rate of unemployment in high unemployment areas, which sets the rate of inter-regional migration.

It is a recurrent theme in this thesis that there is a very strong link between the geography of unemployment and the geography of migration, but that the dynamic movements of each of these variables are basically set by the dynamics of employment change. In an economy of slow employment growth, or of job loss, the existence of migratory flows ensures that the accumulation of unemployment is not confined to areas of job loss, but is spread to some extent across all areas. Migration itself however tends to alter the social composition of donor and recipient areas, with the general tendency being for donor areas to have an ageing population and recipient areas to have a youthful population, the younger part of the workforce being generally the most footloose.[8] Areas, generally coastal, with a high influx of retired people represent a counteracting tendency, but not one strong enough to overturn the general principle.

The long-term large-scale patterns of population redistribution which are about to be described in the next section, may be regarded as having resulted, to a large extent, from migration flows being persistently in the same direction over a long period (with perhaps the occasional short-term reversal). Attention proceeds to outlining some of the major trends in the redistribution of population in the UK since the industrial revolution, with emphasis being placed on the extent to which spatial patterns of population change reflect spatial patterns of economic growth.

3.3 The Internal Distribution of Population, 1801-1981

Examination of Census data on the regional distribution of population can provide an early overview of the "directions" of regional economic change in Britain at various phases. The principal concern here is with broad changes in the long run, rather than detailed changes between consecutive Censuses.

Regional population statistics for the Censuses from 1841 to 1971 have been taken directly from Lee (1979), whose regional classification has also been used. These regions are not identical to current official regions, being based on aggregations of pre-1974 counties. It has therefore been necessary to recalculate 1981 Census data to a form compatible with Lee's regionalisation. Data by county from 1801 to 1831 have been taken from Mitchell and Deane (1962 p.20) and may also of course be taken directly from the Census; these counties have then been aggregated to conform to Lee's regions. Estimates for 1701, 1751 and 1781 have been based on Deane and Cole (1967 p.103 and p.6) although these are perhaps not altogether reliable; the figures for 1751 in Table A3 would appear to be anomalous.

Table A3 shows the proportions of the total population of Great Britain living in each region at each Census date, and gives a broad indicator of the distribution and redistribution of population in Great Britain. Ireland, including Northern Ireland, has been intentionally excluded throughout. The main reason is that the continuous loss of population from Ireland from the 1840s to the Second World War (Table 3.3) would, if incorporated into the British figures, completely obscure the picture of the North-South redistribution of population within Great Britain. Between 1841 and 1911, the share of U.K. population accounted for by Ireland fell from over 30% to less than 10%, a change in the share of population an order of magnitude greater than that for any region in Great Britain.

The exclusion of Ireland from this particular data set should not be construed as meaning that Ireland was, or is, in some way insignificant. On the contrary, Ireland has been excluded precisely because of the exceptional severity of its 19th century economic problems. A fall in the population of Ireland of 20% in ten years (from 1841 to 1851) is an indication of a regional problem so severe that it makes the inter-war British regional problem appear slight in comparison. Irish population trends need to be examined separately, rather than ignored.

It goes beyond the bounds of this thesis to examine in detail the famine of the mid-1840s, which took place, ironically, at a time of rapid economic expansion in Britain. Several detailed accounts of the Irish famine already exist.[9] The discussion here confines itself to more

general population trends, outlined in Table 3.3. Thomas (1973) provides more detailed statistical information about Irish migration, while Vaughan and Fitzpatrick (1978) provide basic demographic data at a variety of spatial scales. Perhaps the single most important feature of Table 3.3 is that between 1841 and 1911, the population level in Ireland fell by almost a half, while almost tripling in Great Britain. The tragedy of the 1840s is clearly identified. Cousens (1960 p.119) notes that up to 1851 "some 800,000 people had died of disease or starvation, and a further million had emigrated during the fateful five years after the severe failure of the potato crop in 1846", with emigration at its highest from North Central Ireland. Thomas (1973 p.398) shows that in 1843 migration from Ireland to the USA stood at just under 20,000. By 1846, this migration had reached 105,000 and in 1851 peaked at 221,000 or 3.4% of Ireland's population, before falling back to about 40,000 per annum in the mid-1850s. In comparison net emigration rates from depressed British industrial areas, such as the coal mining regions of inter-war years or the peripheral conurbations more recently, have been relatively slight, approaching perhaps 1½% per annum. Even after the potato famine, emigration from Ireland continued at a high rate, generally over 10% of the population per decade, although in later years pull factors (such as the high demand for labour in the USA in the 1880s) probably had greater responsibility for *fluctuations* in migration than push factors (Thomas 1973).

The decline of population in rural Ireland was severe and continuous from 1841 to the First World War, despite increasing population in earlier decades.[10] The population of Dublin, city and county, remained almost static through the 19th century, in common with many of the less industrialised towns of Southern England, while Belfast, the one Irish industrial city which bears comparison with those of Northern England, showed a very rapid increase of population, from 37,000 in 1821 to 387,000 in 1911. As a whole, though, Ireland was far less urbanised than Britain, did not have the resource basis for large scale industrial development, and had a tragically vulnerable rural economic structure. The English rural areas were hardly zones of rapid economic expansion, but at least they were able to maintain employment levels during the Victorian period, and did not suffer the extreme population losses of rural Ireland or indeed the Scottish Highlands. Furthermore, England, unlike Ireland, had several expanding industrial centres, and was better placed to absorb rural migration without mass emigration on the Irish scale.

The British economy was far more dynamic than the Irish economy, and 19th century urbanisation was intense. The 1851 Census classed 50.2%

of the population as urban, while for 1911 the figure was 78.1%.[11] The dominant population redistribution in 19th century Britain was along rural-urban lines rather than along North-South lines.[12] It needs to be emphasised, however, that urbanisation is only urbanisation within a regional context. Thus, urbanisation was intense in Lancashire, especially in the early 19th century, and in the London region, especially in the late 19th century and early 20th century, in each case giving rise to a distinctive urban-regional complex, while urbanisation was slight in the once important economic centres of East Anglia.[13] It seems a dubious practice, therefore, to work on the basic of assuming that urban economic change and regional economic change are completely distinct factors, whether considering the urban-rural shift in contemporary Britain (Fothergill and Gudgin 1982) or 19th century urbanisation (Robson 1973). Even if different size-bands of towns show on average different rates of growth, it is generally to be found that variations in economic performance within an urban size-band show distinctive regional characteristics.

The general pattern of the North-South distribution of population is for there to be a slight but persistent net drift of population to the North in the 19th century, and a slight but persistent net drift of population to the South in the 20th century. Fig 3.1 indicates this clearly, and also indicates that there was a period from 1881 to 1921 in which the North-South distribution of population was, in aggregate terms, stable. Table 3.4 provides an intermediate level of spatial aggregation between the broad North-South divide of Fig 3.1 and the region by region enumeration of Table A3.

The share of the Midlands in the total population of Britain may be seen to have been steady at 15% from the early 19th century, and perhaps even earlier, up to the 1931 Census. In the post-1932 upswing, the Midlands share of the total population increased substantially, reflecting the role of the West Midlands as an expanding core industrial region. Southern England showed an even more strongly marked increase in the share of the national population in this 20th century phase, but with the difference that the main expansion in this share started in the 1920s, a period in which inter-regional differences in the rate of employment growth were particularly strong (chapter 4).

With the Midlands share of the total population remaining fairly steady up to 1931, the main switches in the core-periphery balance of population were set by the relationship between Southern expansion and Northern expansion. Two highly distinct major urban economic systems were developing in the 19th century; the service-based urban economy of London and the industrial urban economies of the North.[14] Both types of urban system were growing much faster than the economy as a whole, so

that the expansion of major urban areas helped increase the population share of the regions in which they were located. Population levels were almost static in the rural hinterlands in the 19th century,[15] despite a national population growth rate of about 1% per annum; increases in employment were concentrated "in the city" rather than "on the land", setting up a situation where the large natural demographic increases in population in rural areas were almost entirely drained off by migration. The rural hinterlands in Southern England were far more extensive than in the North, stretching as they did from Cornwall to Norfolk and Lincolnshire. Urbanisation in Southern England outside London was slow in the 19th century, but London and the Northern industrial areas expanded rapidly. The presence of the Southern ruralised "hinterland", with a population of 4,600,000 in 1801 and 6,600,000 in 1881,[16] retarded considerably the measured population growth rate, and the share of the total population, of Southern England. In the same period, London's population grew four-fold, while Lancashire's population grew five-fold. The extent of London's growth should not be under-estimated, even if the percentage rate of population growth was lower than in the industrial periphery. In 1881, the population of Greater London (4,770,000) was almost as high as in South East Lancashire, Merseyside, West Yorkshire and the West Midlands conurbation combined (4,912,000).[17]

In the periphery, the share of the national population increased substantially from 1801 to 1881, remained steady until 1921, and then declined substantially thereafter. The falling share of population in the periphery after 1921 reflects the economic problems faced by the traditional coalfield industrial regions in the 20th century, problems which are discussed in greater detail in later chapters. Table 3.4 shows very clearly that the expansion of the periphery in the early 19th century was led by North West England, and to a lesser extent Yorkshire. This wave of expansion, led by the textile industries, lost impetus in the late 19th century, and after 1881 the share of population in this "Northern metropolitan belt" remained stable. The "exporting coalfield" regions of North East England and Wales expanded relatively slowly during the early decades of the nineteenth century. The proportion of national population enumerated in the Northern region increased from 5.6% to 6.3% between 1851 and 1871 as the region played an important part in the upswing of the post-1843 long cycle, which was based on railway construction and on the production of steel and heavy capital goods for home and foreign markets.[18] The mid-19th century was a critical phase in the development of heavy industry in North East England. After 1881, the share of population in the exporting coalfield regions expanded more quickly than the national average, in contrast with other industrial regions, mainly through rapid

increases in coal mining employment as export markets for coal increased.[19] This expansion did not rest on a firm basis, however; between the wars, coal mining employment in these two regions declined very sharply and their share in the total population fell from 13.3% in 1921 to 11.7% in 1951.

Scotland, the only peripheral region in Britain not so far discussed, had a falling share of population throughout both the 19th and 20th centuries. Throughout the 19th century this was because of the presence of considerable depression in rural areas, and particularly in the Highlands,[20] while in the 20th century the main problem was one of industrial decline in the Clydeside conurbation.[21] Scotland was in the unfortunate position of suffering severely both from the rural-urban shift of the 19th century, and from the urban-rural shift of the 20th century, although there were important counter-currents in each century; the Clydeside conurbation expanded rapidly in the 19th century, while chapters 6 and 8 suggest that the less urbanised areas of Scotland were particularly well represented amongst the high growth areas of the 1970s and 1980s.

Table A3, along with its derivative, Table 3.4, represents perhaps the most important compact summary in this thesis of Britain's economic geography since 1801, and deserves close study. The prevailing 20th century geography, of fast growth in the South and Midlands and slow growth in the North, is clearly revealed. It is also shown that this basic pattern dates only from after the First World War. Before then, the industrial periphery kept up with the South and Midlands in population and in employment trends, while during various part of the 19th century various parts of the industrial periphery showed major spurts of growth. A feature which needs to be emphasised is that there was substantial growth in the North before the 20th century decline set in. Without this growth, there would be no industrial conurbations in the UK. *The geography of economic decline in the UK in the 20th century reflects not so much a long history of slow growth in the periphery as the erosion of economic structures developed in previous years.*

Census data can be used to shed light on employment change in the 19th century, although year-to-year comparisons, on which so much reliance is placed in later chapters, are obviously not possible. Employment figures prior to 1841 are not reliable,[22] and there are substantial discontinuities in coverage between 1841 and 1851, and between 1871 and 1881, as detailed in the notes to Table 3.5. Census data on employment up to 1911 are summarised in Tables 3.5 and 3.6 below, and suggest that employment growth was faster in the industrial periphery than in the South East up to 1871, but that the South East was the leading region of growth after 1871. This accords with the figures for population

change given in Table A3. In the late 19th century, growth in the industrial centres faltered, while the South Eastern core region became more dominant as Britain's role as a major financial and imperial centre consolidated.[23] The inter-regional differences in rates of employment change between 1871 and 1911 tended not to be great (apart from the depressed rates of growth in the rural outer South), but tended to favour the urban South slightly more than the urban North. The first indications of regional differentiation along 20th century lines were beginning to appear.

Little attention has been given in this brief survey to local patterns of population change. Osborne (1964 pp.338-339) provides an interesting series of maps showing population change by county at 30 year intervals from 1801 to 1921, and for shorter periods from 1921 to 1961. Up to 1861 the greatest proportional increases in population were to be found in the coalfield industrial regions, particularly in Lancashire, South Wales, North East England and West Central Scotland. London, despite its large population increases on an absolute scale, is shown as having had fairly low *proportional* rates of increase of population compared with the peripheral urban areas. Between 1861 and 1891, there is little difference between rates of population growth in the main urban areas of the South and the North. Between 1891 and 1921, the balance had shifted in favour of the South, but not overwhelmingly so. A belt of slow growth could readily be detected, stretching from Lincolnshire to Cornwall, as in previous periods. Up to 1921, rapid population growth in the South East was confined to a fairly small area bounded by Hampshire, London, Hertfordshire and Essex, and the coast. After 1921, the South East growth zone rapidly expanded in area, so that between 1939 and 1951 it enveloped virtually the whole of the South and the Midlands. London itself was a substantial loser of population to surrounding areas, but what was happening was not so much the decline of the London economy, but its spread to surrounding areas. In this distinctively post-war geography (the 1921-39 zone of growth was more restricted, although broader than before 1914), the North remained a large area of slow growth, with population later starting to decline substantially in the Northern conurbations. A map of population change between 1961 and 1971 (Lawton 1982 p.111) shows North-South differences at perhaps their clearest, although after 1971 some complicated trends were apparent, with urban-rural shifts, this time in favour of less urbanised counties, dominating North-South shifts in population. In many respects, this has intensified the dominance of London's surrounding counties in recent population growth. These twentieth century patterns of growth will be discussed in much more detail in chapters 4 and 5 below.

3.4 Data on Regional Employment Change

Discussion now turns to more detailed indicators of regional economic change, and starts by examining data for regional employment change (Tables A4 and A5 in appendix, Fig 3.2 in this chapter). Reasonably reliable and comprehensive data exist only from 1923, with data becoming available both for numbers unemployed (Table 162 of the *Historical Abstract*) and for numbers insured against unemployment (Table 110 of the *Historical Abstract*). From these, and in the absence of any direct count of the numbers employed, it is possible to derive estimates of insured employment levels by subtracting the numbers unemployed from the total insured population. Any results thus derived refer, however, merely to the *insured* working population, and not the total working population, an important distinction before the widening of the scope of the National Insurance scheme in 1948. Even so, the results obtained are of considerable interest.

After 1948, data for numbers employed may be taken directly from official sources, although the sources involved are often rather scattered; a listing of the sources is given at the foot of Table A4. For years prior to 1971 the data are based on annual counts of insurance cards, while from 1971 onwards the Annual Census of Employment, based on employer returns, has been used.[24] After 1978, however, the Census of Employment has been held only at three-yearly intervals, in 1981 and 1984. Unavoidably, employment figures for other years in this period represent interpolations, or estimates based on incomplete data.

Table A4, based on these various sources, shows the number of insured employees in employment by region for each year at mid-year. Table A5, based on Table A4, shows the percentage change in employment for each region for each annual period, and in addition (Table A6) these rates are given at the level of North and South, allowing the "annual gap" in the rate of employment change between North and South to be calculated. Fig 3.2, based on Table A6, shows percentage rates of employment change for North and South annually from 1923 to date.

Throughout the bulk of the post-war period, and indeed through most of the 1930s, this annual gap has averaged about 1% per annum. Thus the normal tendency has been for employment to grow by about 1% per annum faster in the South than in the North. This may be said to be one of the statistical characteristics of the 1932-1983 long cycle. It is worth emphasising the persistence of this differential through a wide range of economic conditions, whether through post-slump recovery in the 1930s, through full employment in the 1950s and 1960s or through slump in the 1980s. As Fig 3.2 shows there has been relatively little large-scale

cyclical variation in the size of the annual gap, except for the late 1930s, when the recession of 1938 hit the North severely, while the periods of recovery were stronger in the North than in the South, partly as a result of rearmament.[25]

In the post-war period, the resurgence of regional policy in the early 1960s is an obvious factor explaining the reduction in the "annual gap" from about 1% up to 1963 to about ½% thereafter (Table A6). This gives an estimate of the effects of regional policy roughly in line with that of Rhodes and Moore (1973), both in terms of extent and of timing; this point is discussed further in chapter 5 below. Between 1971 and 1978, the gap between North and South in rates of employment change had all but disappeared, leading to what in retrospect appears to have been a premature assessment that regional convergence was taking place.[26] The main causes behind this further narrowing of the annual gap would appear to have been a new vulnerability in the West Midlands economy and a substantial decline of employment in London (chapter 6 below), rather than any new positive developments in the periphery. The higher degree of vulnerability of the periphery re-emerged in the late 1970s and the slump, yet as Table A6 and Fig 3.2 show clearly, North-South differences in the rates of employment change remained in line with those of the 1950s, and were much less than in the recessions of the inter-war downswing. In the recessions of the post-1966 downswing, employment declined both in the North and in the South, but usually at a slightly faster rate in the North. In the period up to 1932, the characteristic pattern of recession was for employment to decline sharply in the North but to remain steady in the South. Furthermore, in the admittedly exceptional year of 1924-25, employment fell by 4.4% in the North, because of a crisis in coal mining, whereas employment *rose* by 3.6% in the South.

Even a cursory initial analysis shows that regional differences in the rate of employment change were more strongly marked before 1932 than after 1932. The basic explanation is that in the recessions up to 1932, the impact of recession was particularly severe on certain industries, notably coal mining, which were spatially concentrated and employed a high proportion of the workforce in those areas in which they were situated. In recent recessions, the employment structure of the industrial areas has been considerably more diversified[27] so that a heavy proportional loss of employment in a vulnerable sector, such as cotton, would have had a less severe effect on total employment than in a corresponding situation in the 1920s or early 1930s.[28] The creation of new employment *within* the industrial sector has been of some importance in this respect, but probably much more important has been the growth of the service sector in both industrial and non-industrial areas which has allowed expansion to take place in all areas during periods of prosperity, and which has helped

stabilise the employment structure of the more vulnerable industrial areas during periods of recession; the growth of the public sector services has arguably been particularly important.[29]

The discussion of spatial patterns of employment change will be extended considerably in the chapters which follow, with several new themes being introduced. Since so much emphasis is placed on employment data, a brief discussion of the quality of these data, and the problems encountered, is required. The main problems encountered are, not surprisingly, those found in interpreting inter-war sources. It could almost be suggested that the main problem with post-war data, and particularly post-1971 data, is the problem of handling a great abundance of detailed information, while the main problem with handling earlier data is the lack of detailed information. A detailed analysis of post-1971 data indicates a large number of minor problems with industrial reclassifications and discontinuities in data, yet it is virtually certain that the recent data are far more reliable than the earlier data.

In that data from the decennial Census of Population are obviously of no use in studying short-term patterns of employment change, much reliance has to be placed on data provided by the Ministry of Labour (and its successors) from the Unemployment Insurance scheme. This scheme is a relatively modern institution, having been introduced in a small way in 1911 to cover sectors of the labour market with a high incidence of casual labour,[30] and having been extended to cover effectively the whole of the workforce only as late as 1948. This affects considerably the interpretation placed on inter-war figures for employment (Buxton and MacKay 1977 pp.55-58) or unemployment (Garside 1980 pp.29-61), with inter-war figures presenting an understatement of the level of employment, but a considerable overstatement of the *rate* of unemployment. This overstatement of the unemployment rate results from the Unemployment Insurance scheme having deliberately excluded those sections of the work force least prone to unemployment. Thus, when the Unemployment Insurance scheme expanded in 1920, it still excluded those non-manual workers receiving remuneration of £250 or more per annum, and also those in agriculture, forestry, and horticulture. In addition, various service groupings were excluded such as those occupied in private domestic service, those in military service, teachers, police, civil servants and certain other classes employed on the railways, by local authorities or by various other public undertakings (Buxton and MacKay 1977 p.55). The inter-war statistics covered perhaps two-thirds of total employment. The high degree of cyclical volatility of employment in the insured sectors, when compared with non-insured occupations, suggests that the cyclical swings in employment shown in Table A5 may be exaggerated by perhaps a third.

It might be thought that the skewed coverage of the workforce would have a noticeable effect on measures of the regional distribution of the workforce. A comparison of data from the 1931 Census with 1931 estimates of employment (Table A4) suggests that this difference is negligible, in the order of 0.1 of a percentage point, when differences in regionalisation are taken into account. It is an open question whether the skew of the coverage considerably affects annual regional *differences* in the measured rate of employment change.

Another difficulty is that inter-war official statistics do not allow for a total of those in employment to be read off directly. Instead, it is necessary to subtract registered unemployment from the total number insured. The accuracy of this depends on the consistency of unemployment statistics through time, which Garside (1980 pp.46-61) shows to be reasonable but far from perfect. There were however two substantial changes in the regulations for the payment of benefits during the slump; in early 1930 the regulations were relaxed, adding, according to Garside (1980 p. 50), perhaps 60,000 to the unemployment total, whereas in late 1931 and early 1932 a tightening of regulations led to perhaps 180,000 being artificially removed from the total of unemployment. It is unclear to what extent such changes affect the measurements of total employment. Probably the effect is relatively slight in that anyone removed from the list of unemployed through legislative changes would also be removed, statistically, from the workforce total (employed plus unemployed). Legislative changes would thus tend to affect the enumerated size of the workforce, and the unemployment total, equally, leaving the figure for employment steady. There is, however, an element of uncertainty. Table 3.7 shows very clearly the effect of legislative changes in 1932 on the enumerated size of the workforce; the female workforce apparently "declined" by 77,300 in 1931-32, after an increase of 109,200 in 1930-31. For reasons which will be discussed shortly, one would expect a reduction in the swelling of the enumerated workforce at such a late stage of the slump, but not a major decline.

Table 3.7 shows that during the main part of the 1929-33 slump, the measured size of the workforce increased by about 300,000 per annum, compared with less than 100,000 per annum in years of cyclical upswing. This is the reverse of the relationship which existed in the post-1979 slump, in which the measured size of the workforce decreased considerably as a result of increases in concealed unemployment, discussed in section 3.5 below. People who lost jobs in the post-1979 slump did not necessarily appear in the unemployment totals, even if they had not gained new jobs, but might have withdrawn from the workforce, through early retirement for example. This depresses the measured size of the workforce. In the

post-1929 slump, however, a different relationship applies. Employment trends in uninsured sectors tend to be relatively depressed in slump years when compared with non-slump years, even though rates of job loss might not necessarily be high. These worse than average employment trends force people who would otherwise have been working in the uninsured sectors to enter the main labour market, where they will either be registered as unemployed or enter insured employment. The statistical result of this process is to increase the measured size of the insured workforce.

Another problem, which has a noticeable effect on measured rates of employment change at both national and regional levels, is that there is a slight time lag between the date of enumeration of the total working population ("mid-year" according to the *Historical Abstract*; July according to Beck 1951) and the date of the nearest unemployment count. In calculating the results for Tables A4 to A6, *July* unemployment has been subtracted from the mid-year insured working population, which at least has the virtue of allowing for corrections to be made across regional boundary changes in 1937 and 1938. Beck (1951, Tables 16 and 17) has calculated index numbers for employment by both region and county between 1929 and 1939, but subtracts instead *June* unemployment from the number of insured employees in July. At a time when month to month changes in unemployment might be particularly large, this slight difference in the method of calculation is capable of leading to considerable discrepancies. These would be at their largest across years with significant accelerations or decelerations in the rate of employment change; in the 1930s, such periods would comprise the slump itself and also the late 1930s, when cyclical conditions were highly variable.

Figures for employment change by region based on Beck's (1951) calculations are presented as a supplement to Table A5, without prejudice as to whether it is more accurate to subtract June or July unemployment figures from the mid-year employment totals, or whether indeed it would be more accurate to subtract the average of June and July unemployment figures. The practice followed here, of subtracting July unemployment, is however the practice followed in the *Historical Abstract*. Beck's figures need to be separately presented because Beck provides various series at the county level which are not available in the main published sources (*Historical Abstract*, *Gazette*). This more disaggregated presentation makes it possible to analyse separately the North East coalfield (Durham, Northumberland) and Yorkshire, two highly distinct economic regions which were, irritatingly, grouped in a single region prior to 1936. Table 3.8 shows that the degree of job loss in the slump was far more severe in the Durham/ Northumberland Coalfield than in Yorkshire, and indeed more severe than in

any region outside Wales, an aspect of the slump which is quite well known,[31] but obscured in official statistics at the regional level.

The high degree of spatial disaggregation in Beck's statistics justify their retention in a separate series. Table 3.9 details the main differences at the national scale between Beck's series and that derived from the *Historical Abstract*, and shows that these can largely be explained by differences in the unemployment levels between June and July in any given year. In Beck's series the severity of job loss in 1929-30 and 1937-38 is placed at a considerably lower level than in the main series.

Post-war data series on employment present fewer problems of interpretation. After the major extension of the Unemployment Insurance scheme in 1948, the data presented are internally far more consistent, both in terms of regions and, with the introduction of the Standard Industrial Classification,[32] in terms of sectors. There is however the minor problem that it is impossible to make a direct comparison between employment levels in 1947 and 1948 on the basis of officially published statistics.

Regional boundary changes have in general posed little problem, as careful searching has been able to uncover figures for both "old" and "new" regions to allow for year to year comparisons. The one problem of data bridging which could not be resolved completely satisfactorily occurred in the changes in regional boundaries in 1965. No employee counts for 1964 on the basis of post-1965 regions are available for four regions (SE, EA, EM, YH). For the purposes of calculation of other tables, some rough estimates (noted at the foot of Table A4) were made for these post-1965 regions for employment in 1964, based on what appeared to be the normal annual differences in rates of employment change between the South East and East Anglia, and the East Midlands and Yorkshire and Humberside, respectively.

In 1971, the basic method for assessing levels of employment changed from a card count of National Insurance cards to an annual workplace census, the Census of Employment. In general, this has probably led to a considerable improvement in data quality. There were however various discrepancies between figures for employment in 1971 based on card count data and those based on the Census of Employment.[33] Allen and Yuill (1977) note that these discontinuities arise mainly from inaccuracies in the card count data, and that highly disaggregated data prior to 1971 (for example, sub-regional data by minimum list heading) can be highly inaccurate. It follows that figures for regional employment change by year prior to 1971 need to be treated with considerable caution; one can probably identify major trends but not detailed changes.

There are two main fundamental limitations to the quality of Census

of Employment data not suffered by Card Count data, both of which relate to the Census being conducted on a workplace basis rather than on an employee basis. Firstly, it is impracticable to enumerate employment in domestic services (servants, cleaners of private houses, etc.), and secondly, there is the possibility that large numbers of employees are double-counted if they hold more than one job. If it is correct to argue, as in chapter 6 below, that a decline in the industrial economy loosens the labour market sufficiently to generate a tendency for a rapid increase in employment in the lower paid end of the service sector, it could well be the case that the 1970s and early 1980s have been marked by increases in employment in the domestic service sector, contrary to the trends of the 1950s and early 1960s.

There are various problems of data quality in the Census of Employment relating to changes in industrial classification of a plant, minor unreported changes in the boundaries of travel to work areas (the smallest spatial aggregate containing a broadly self-contained labour markets)[34] and other local factors. It is only fair to record that such problems as these would never have come to light if the original data source had not been available for presentation at a highly detailed level, allowing minor imperfections to be revealed. There appear, however, to be considerable problems of data consistency concerning the education sector. The sharp fluctuations in employment which are often registered in this sector seem to be caused by incomplete recording of employment in certain years. A more detailed examination of this problem is made in chapter 8 below.

The Census of Employment was conducted on an annual basis from 1971 to 1978, but less frequently thereafter. The next two censuses took place in 1981 and 1984, leaving incomplete information on what was happening in the often highly critical intervening periods. Regrettably, the absence of any Census of Employment in 1979 or 1980 makes it considerably more difficult to establish a detailed geography of slump. Official estimates were made at the time of regional levels of employment in these years (*Gazette*, various), but the appearance of the first results of the September 1981 Census of Employment suggested that these estimates were often inaccurate. Table 3.10 suggests that while the earlier estimates were fairly accurate with respect to production industries, with the exception of considerably overestimating net employment decline in the South East outside London, the estimates with respect to the service sector have been highly inaccurate. The earlier estimates suggested a decline in service sector employment between 1978 and 1981 rather than the modest overall rise which actually took place. The main problem would appear to be that information on job losses, especially on large

scale industrial job losses, is more readily available than information on the generally more diffuse patterns of employment growth. A revised set of estimates for regional employment totals in 1979 and 1980 was published in the *Gazette* following the completion of the 1981 Census of Employment. It seems however that the previous estimates were revised in such a way as to spread any discrepancy in the employment figures evenly across the intervening years. It is argued that this is an inappropriate procedure given the radically different economic conditions in each year; another set of estimates is presented in chapter 8 below.

A detailed comparison between employment levels in 1978 and 1981 by county forms the basis of chapter 8 below. Much use is made of the technique of shift-share analysis. In such an analysis, employment change in an area in a given period is separated into a national component (the change of employment in an area which would result if overall employment was changing at the national average rate), a structural component (the degree to which employment would be expected to grow more quickly or more slowly than the national average as a result of the local weighting of economic sectors) and the differential shift (the degree to which employment has grown more quickly or more slowly than average once the effects of sectoral composition have been taken into account).[35] There has been a tendency in past shift-share analyses to present results at a sectorally highly aggregated scale.[36] This tendency is not regarded as being especially helpful. It is seen as of more interest to identify which particular sectors have been responsible for the existence of large structural or differential shifts in any given area. This then provides important linkages between the overall patterns of employment change in an area, the overall economic fortunes of the main industries of that area in a particular period, and the more specific questions of the geography of employment change (why jobs are lost at one place rather than another) *within* a particular industry. Questions of corporate structure are important in examining the geography of job loss,[37] but more attention perhaps needs to be given by industrial geographers to the detailed relation between the geography of employment change by corporation and the structure of employment change by area. The use of a *detailed* shift-share analysis would appear to be a useful step in breaking the impasse in industrial geography between on the one hand the development of highly generalised, perhaps overgeneralised, explanations for highly generalised patterns of change[38] and on the other hand the search for highly detailed explanations of what is happening in particular cases without asking whether what is happening in a particular place is typical of trends elsewhere, or whether the local experience is "unique" (the "intensive research" of Sayer and Morgan 1985).

The examination of patterns of employment change is conducted at a variety of levels, from an outline of very broad trends to fairly detailed statements of events at a local scale in a particular short time period. The depth to which analysis may be developed depends in part on the accuracy and detail of the data sources. The often highly subtle shifts in the economic geography of the post-war period need to be represented by often highly detailed data in order that a realistic process of explanation may begin. The data available for regional and local patterns of employment change in the inter-war period are generally not of sufficient quality to detect the more subtle trends, but regional differences in economic performance were so extreme during this period that even data sources of moderate quality can probably recapture the bulk of the significant trends.

3.5 Unemployment; national and regional unemployment rates

Tables A7 and A8 show regional and national rates of unemployment from 1913 to date, and are based primarily on data from the Unemployment Insurance scheme published in the *Gazette* and the *Historical Abstract*. Table A7 presents both national and regional rates of unemployment, but to prevent the appendix becoming too bulky these are shown only for certain months. In Table A8, the official UK unemployment rate is shown at various intervals (monthly during slumps) for peace-time periods since 1918, in conjunction with an index of regional unemployment inequality (from 1923 to date) as described later in this section. The basis of the index of unemployment equality is a measure of the average percentage point difference between regional and national unemployment rates.

The general method of calculation of unemployment rates has been to divide the number registered as unemployed by the size of the total workforce (employed plus unemployed) and to express the result as a percentage. Such a measure clearly captures the welfare aspect of the problem; a 20% unemployment rate, for example, indicates widespread poverty as a result of joblessness, while a 1% unemployment rate suggests that if there is a widespread problem of poverty, it is not due to prolonged periods of unemployment. There are however different ways of measuring the relationship between the level of employment and the level of unemployment. For example, Beveridge often used the concept of the employment rate,[39] calculated by subtracting the unemployment rate from 100%; this gives a measure of the "capacity utilisation" of the workforce.

For certain purposes, the ratio of the number employed divided by the number unemployed provides an important labour market variable. An unemployment rate of 20% thus corresponds to an unemployment ratio of 4:1, while an unemployment rate of 1% corresponds (approximately) to an unemployment ratio of 100:1. This ratio, it is suggested, gives a far better indication of the looseness or tightness of the labour market than the unemployment rate gives. Thus unemployment rates of 1% and 2% might not seem very dissimilar, and might be taken to suggest full employment and a tight labour market, but when these unemployment rates are re-expressed as unemployment ratios, figures of 99:1 and 49:1 result. A small scale expansion of employment (say of 1%) might well be just about absorbable given a situation of 50 employed to 1 unemployed, but would set up severe strains on the local labour market if there were 100 employed to 1 unemployed. It would seem logical to suggest that differences in the unemployment ratio provide more effective direct indicators of the "pressure gradient" of migration than do differences in

the unemployment rate; other factors, such as differences in the rate of employment change, and distance, also need to be taken into account, of course.

Another important aspect of the unemployment ratio is that it helps provide an indicator of the cost of unemployment to the employed population, or, to state the case alternatively, provides an indicator of the increase in the size of the tax take required to fund the unemployed. If for example the average rate of payment to the unemployed is a quarter of the average income of the employed, and if the unemployment ratio is 5:1, this suggests that one twentieth of the income of those in work is required to fund unemployment. This sets up fiscal pressures. It hardly needs to be emphasised, however, that the main costs of unemployment are borne not by the economy as a whole but by the unemployed themselves.

The statistical relationship between the level of employment and the level of unemployment, conventionally measured by the unemployment rate, is a labour market indicator of great importance, indeed the single most important indicator there is of the state of the labour market. The *accuracy* of the measurement of the unemployment rate is another matter; there is considerable ambiguity. Garside (1980) has provided what stands as the definitive analysis of the problems of interpreting British historical unemployment statistics. A few brief comments are required.

The two main types of problem in assessing the accuracy of a measured rate of unemployment are firstly the problem of incomplete information when employment and unemployment statistics are presented for only a limited section of the workforce, and secondly, the problem that unemployment is administratively defined, with the definition of unemployment not necessarily comparable through time, or internationally.

The former problem is frequently encountered in a severe form in historical work on unemployment; before the days of comprehensive national insurance schemes (thus, before 1948 in the UK), unemployment statistics were generally based on trade union statistics or on unemployment insurance statistics over a limited range of the workforce. Trade union statistics discount the labour market experience of the non-unionised sector of the workforce, while national insurance statistics, as discussed in section 3.4 above, only extended, as far as employment is concerned, to two-thirds of the workforce. This creates considerable problems of historical comparison. Problems with the analysis of unemployment are particularly acute for the period before the creation of the National Insurance scheme, yet an understanding of the geography of unemployment before 1914 is necessary to place later events into

their full historical context. Contemporary observers paid considerable attention to patterns of poverty and unemployment before 1914,[40] without any great systematic attention being paid to the *geography* of poverty and unemployment. Little subsequent work has been done on this subject until Southall (1983, 1986) presented results of his study of regional patterns of unemployment among trade union members before 1914. This tended to show higher levels of unemployment in the industrial regions than in Southern England during recessions. However, Southall concentrates his attention exclusively on skilled industrial workers, without any attention being given to the rest of the workforce. It is argued in chapter 9 below that regional unemployment rates for skilled engineering workers are likely to be *extremely* unrepresentative of general regional patterns of unemployment, and that unemployment rates were probably consistently higher in the South than in the North before 1914. Two questions especially need to be considered; that of rural unemployment, which can be inferred to be high relative to urban unemployment (rural areas were consistently zones of net emigration) and that of the various forms of unemployment present in urban casual labour markets, especially in London. Southall rather unhelpfully simply assumes away unemployment in London, and having done this argues that unemployment rates were higher outside London.[41]

The present author still holds to his earlier opinion, presented in Crouch (1982b) but disputed by Southall (1983), that there was a general tendency for unemployment rates to be higher in the South than in the North before 1914, but that there was a tendency for unemployment rates to increase faster in the North than in the South during times of industrial recession. Within this framework it is unclear, and perhaps almost irrelevant, whether unemployment rates were slightly higher in the North than in the South, or vice versa, at the trough of the recession. The unusually severe recession of 1920-21 resulted in unemployment rates being slightly higher in the North than in the South, but it is likely that any substantially weaker recession would not have had this result.

This issue is discussed further in chapter 9 below. The critical point to consider here is that, as Table A7 shows, unemployment rates were higher in the South than in the North just before the 1920-21 recession, but higher in the North than in the South at the end of the recession, and at *all* phases of later cyclical recessions. This indicates a fundamental reversal of polarity.

The general regional patterns shown in inter-war unemployment statistics are, in contrast with the pre-1914 period, extremely clear. Regional unemployment rates were substantially, and indisputably, higher in the North than in the South. On this point, the relatively

limited coverage of the workforce by the Unemployment Insurance scheme is immaterial. The calculation of an unemployment rate for inter-war years to be comparable with post-war unemployment rates is a complicated task.

While insured registered unemployment represented nearly the whole of total registered unemployment,[42] insured employment represented perhaps three-quarters of total employment, with a lower proportion in years before 1936 when the insurance scheme was slightly less extensive. The extension of the National Insurance scheme in 1948 resulted in an increase of 28.4% in the measured size of the workforce (*Historical Abstract*, Table 115), indicating a 77.9% coverage of the 1948 workforce by pre-1948 statistics.

There is an implication that by post-war standards, the size of inter-war unemployment rates has been exaggerated by about a third. To correct inter-war figures to a post-war basis, a reduction of approximately one quarter needs to be made. The 40% unemployment rate characteristic of depressed areas in the depths of the inter-war depression would translate to about 30% in modern terms, while the peak national unemployment rate of 23.2% in February 1933 would translate to about 17.4%. The unemployment rate of about 4 to 5% in the more prosperous areas of Britain at a late stage of the post-1932 recovery would correspond to post-war unemployment rates of about 3 to 4%, or about 30 in employment to every person unemployed, a situation of almost full employment. In contrast, the 20% unemployment rate in Wales after five years of economic recovery would correspond to a modern unemployment rate of about 15%, a rate of unemployment indicating a local economy with considerable continued distress.

These calculations are meant to provide a general indication of the severity of employment in the inter-war period, rather than a precise evaluation. The general levels which are suggested approximate to what might be termed the consensus view.[43] Feinstein (1972) indicates a broadly similar level of unemployment throughout the inter-war period (Table 3.11) although as Garside (1980 p.59) points out there is an important technical weakness in Feinstein's calculation in that he assumes that the ratio of registered to concealed unemployment measured from the 1931 Census was maintained throughout the inter-war period, when in fact the timing of major revisions in the detailed scope of the Unemployment Insurance scheme (a relaxation in 1930 and a tightening in 1931-32) meant that the ratio of measured to concealed unemployment was abnormally high in 1931.

The question of the relationship of measured to concealed unemployment relates more to the problem of the official definition of

unemployment than to the problem of the lack of general coverage in the National Insurance scheme. Unemployment statistics ususally cover only those who have an incentive to register, and who then register; this is likely to represent merely a subset of those who could be regarded as unemployed under a broad definition (those out of work who would be able and willing to work if opportunity arose) rather than under the narrow official definition. Unemployment amongst married women is particularly likely to be underestimated by official procedures. International comparisons of countries with broadly similar male unemployment rates can show widely divergent female unemployment rates, as shown for recent years in Table 3.12. These major differences relate, it is suggested, more to the incentive for women to register as unemployed than to the pressure of demand in each country. The international comparisons show that female unemployment is probably particularly severely underestimated in the UK;[44] a broader definition of female unemployment would probably increase measured female unemployment in 1984 by between 500,000 and 1,000,000, giving a measured unemployment rate for women of between about 14% and 18%.

There can be little doubt that the degree of concealed unemployment in the UK is at present extremely high, given the underestimation of female unemployment and the various changes in the measurement of unemployment which have been made since 1979. The effects in these changes of measurement, described in detail in the footnotes to Table A7, have consistently been to reduce the measured rate of unemployment. Given the political sensitivity of the unemployment rate this must be regarded as more than a coincidence, even if the officially stated aim of any such recalculation of the unemployment figures has been to "improve the efficiency of the employment and benefit services" (*Gazette*, September 1982 p.389) or to reduce "over-recording" (*Gazette*, March/April 1986 pp.107-108) or otherwise to improve the accuracy of the count. It is as well to remember that official statistics are *not* socially neutral products,[45] and while in the general case it is useful for dominant interest groups to collect and present reliable figures for those topics deemed worthy of such presentation,[46] it is often convenient for certain types of statistic to be presented in a distorted fashion.

The periodic "massaging" of unemployment figures makes it difficult to present a continuous series for unemployment on a pre-1979 basis. The practice followed in the appendix tables has been to present regional and national unemployment figures as published in the *Gazette*, but to indicate clearly the approximate size of the mark-up required to show post-1979 unemployment figures on a pre-1979 basis. The mark-ups involved have been derived from the official sources involved.

Fortunately most of the statistical massaging took place at a time when unemployment had stopped rising as rapidly as in 1980 and 1981, so that there is no need to make large-scale allowances for "natural" increases in the size of that part of the unemployed population excluded from the official statistics by the change in the method of calculation.

It would appear that taking these changes into account, the figures of 3,043,000 unemployed (10.9%) in March 1987 would appear as about 3,800,000, or 15.3% on a pre-1979 basis.[47]

Even this understates the level of unemployment, given the extent of the various forms of concealed unemployment which would still have remained under the pre-1979 statistical framework. There are two main components to this; the level of concealed unemployment which existed prior to 1979, and the accumulation of concealed unemployment after the slump.

A Department of Employment estimate in 1977, cited by Hyman and Price (1979 p.229), suggests that the undercount of unemployed women at this stage was between 150,000 and 200,000. The period between 1977 and 1979 was one of mild cyclical upswing with registered unemployment falling from 6.7% (September 1977) to 5.5% (June 1979). In view of this, the undercount at mid-1979 may be estimated at about 140,000, representing at this stage about 0.6% of the total workforce.

It is necessary to add to this an element for the degree of concealed unemployment originating after mid-1979. It needs to be remembered, in making these calculations, that the level of concealed unemployment can increase for reasons other than for legislative changes. The basis of the estimate is a calculation of what the size of the workforce would have been had there been steady growth rather than a slump after 1979. This is done by extrapolation of the trends of the 1970s. Table 3.13 and Fig 3.3 show that the size of the workforce increased steadily, by about 195,000 per annum, between 1971 and 1980, before gradually falling from mid-1980. From mid-1983, however, the size of the workforce increased considerably faster than the long term average. It is argued that these considerable fluctuations in the measured rate of growth of the workforce primarily reflect cyclical changes in the level of concealed unemployment, which is excluded from workforce statistics. It is emphasised that the workforce here is defined in broad terms, to include employees, the registered unemployed, the self-employed and the H.M. Forces, and thus as far as possible to include all the potential workforce, apart from the "hidden unemployed."

The "natural" rate of growth of the workforce may be defined in labour market terms as the rate of growth of the workforce which would keep the level of concealed unemployment steady in the absence of major

alterations in methods of calculating unemployment. This "natural" rate of growth, which may also be envisaged demographically, is taken to be 195,000 people per annum (Table 3.13). It is likely that a more precise figure could be calculated, but only very laboriously, by reference to the age structure of the population and to changes in the economic activity rate by age and sex. For current purposes, however, the figure of 195,000 is useful in providing at least a first estimate of concealed unemployment. If however the workforce had been assumed to be tending to expand, under normal conditions, at 55,000 per quarter (average rate between September 1978 and September 1980), instead of 49,000 per quarter, the peak of concealed unemployment at June 1983 would be measured at 857,000 instead of 757,000. Over a relatively short period, such a divergence should not be regarded as especially serious, provided of course that calculations are not made which rely on complete precision in any estimates made. If longer term estimates are required of the change in the level of concealed unemployment, a finer-scale resolution of the natural rate of growth of the workforce would be required. It should be emphasised that, demographically, this natural rate of growth would tend to be higher in the 1980s than in the 1970s or 1990s, as an echo effect of the high birth rate during the economic boom of the early and mid-1960s. It should be noted in passing that variations in the birth rate have been highly sensitive to changing economic conditions, with a distinct long cycle in the birth rate being detectable (Fig 3.4). The economic component of demographic change is itself an extremely important question but one which cannot be discussed in detail here.[48]

Table 3.14, attempting to estimate the degree of accumulation of concealed unemployment during the slump, assumes that an increment of 195,000 per annum in the size of the workforce is a reasonable estimate (Table 3.13) although the echo effect of changing birth rates in the 1960s would suggest that this might be a slight underestimate during the early part of the slump. Whatever the fine detail, however, the main point stands out clearly in Table 3.14, that the level of concealed unemployment rose steadily and quickly throughout the slump, but particularly through the middle stages of the slump (September 1980 onwards), peaking at about three-quarters of a million in mid-1983. From mid-1983 it appears that the level of concealed unemployment was falling substantially, even though registered unemployment remained steady. The degree of the fall is too great to suggest that a mis-specification of the size of the natural rate of growth of the workforce was responsible.

The increase in concealed unemployment registered up to mid-1983 in Table 3.14 is the result of the fact that not all people who lose their jobs and become jobless register as unemployed, or claim benefit.[49]

The decrease in concealed unemployment after this date is a symptom of a shift in economic conditions from slump to post-slump recovery; jobs are created, but many of these jobs are filled by people who are not part of the registered workforce, and are among the *concealed* unemployed.[50] Table 3.15 shows very clearly that while male employment continued to decline throughout 1983 and 1984, female employment had reversed its earlier decline by mid-1983, and was in fact increasing substantially.[51] Thus, it is correct in a narrow sense to suggest, as Government ministers were doing at the time, that there were substantial elements of employment being created which were not being reflected in falling unemployment, but a broader perspective shows that the increase of registered unemployment in earlier years did not fully reflect the severity of economic decline.

The time series for concealed unemployment makes it possible to present a series for the "real" level of unemployment during the slump. This may be done by adding to the official series an estimate of the level of concealed unemployment existing at mid-1979 (taken as 140,000; see the earlier discussion), and the level of concealed unemployment estimated as having accumulated since 1979. It is to be emphasised that the calculations of Tables 3.14 and 3.16 are based on recently presented (1985) continuous labour market series and thus give figures for unemployment and the size of the total workforce on the basis of 1985 method of calculation rather than earlier methods. The relative degrees of registered and concealed unemployment are based on the level of "massage" of unemployment figures existing in 1985; figures for 1979, etc., on a strictly contemporary basis would show higher levels of registered unemployment and lower levels of concealed unemployment.

The "official" series and the series being calculated here show some important cyclical contrasts in the period of late slump and thereafter. The official series, based on the number of claimants of benefit, shows unemployment increasing very quickly in the early part of the slump, more slowly from late 1981 to late 1982, and then being followed by a very gradual upward trend in unemployment from late 1982 to 1986. Since the main text was written, the official series for unemployment has shown a sharp reduction in unemployment, but this is mainly due to a statistical illusion (see *Charter for Jobs*, May 1987), based on a tightening on availability for work tests. The alternative series, which attempts to take into account concealed unemployment, shows a much greater increase in unemployment between late 1981 and early 1983 than is allowed for in the official statistics. There is, however, an indication of a slight, but very definite, trend towards a reduction in total unemployment (concealed plus registered) starting in mid-1983.

This indicates a cyclical recovery, but one which is weak in comparison with the post-slump recovery of the 1930s (cf chapter 2 above). In the normal long cycle upswing, the post-slump recovery is a period of vigorous growth which removes much of the unemployment created during the downswing and slump, and which sets the economy back on the road to full employment; the 1930s recovery is a clear example. If however the pace of "recovery" experienced in the mid-1980s is merely maintained, and not significantly accelerated, there is no real chance of full employment before the end of the century, even before the disruptive effects of future recessions are allowed for.[52]

The question of direct comparisons between the level of unemployment between the wars and the level of unemployment in the 1980s is a complicated one, because of the difficulties of standardising the data sources. It is likely that unemployment rates were closely comparable at the troughs of slumps in 1933 and 1983. Accepting the rule of thumb that one should reduce inter-war unemployment rates by a quarter to give post-war comparability, one can suggest an unemployment rate in February 1933 of 17.4% (as opposed to the official rate of 23.2%). The attempt to make allowances for the high proportions of concealed unemployment in the recent slump suggests that at the trough in June 1983, 3,931,000 were unemployed; this is an extraordinarily high figure in the context of previous post-war experience, but is lower than some estimates, presented by opponents of the Thatcher Government.[53] When this figure is calculated as a percentage against the whole of the workforce, an unemployment rate of 14.3% results. If one were to exclude the self-employed, and H.M. Forces, the procedure then used in calculating official unemployment rates, an unemployment rate of 15.8% would result. Even relatively slight differences in the difinition of who is accounted as part of the workforce can result in substantial alterations to the calculated unemployment rate, making the calculation of differences in unemployment rates at widely removed periods extremely difficult. The balance of probabilities if that, comparing the troughs of slumps, unemployment rates were higher in early 1933 than in mid-1983,perhaps by about three percentage points.

The comparison of unemployment rates at single moments of different business cycles is not particularly meaningful unless events are placed in a longer term perspective. Table 3.17 shows that unemployment rates in the UK increased by about the same amount (nine percentage points) in the post-1979 and post-1929 slumps. Total unemployment rates were higher at the end of the post-1929 slump than at the end of the post-1979 slump, but this was mainly because pre-slump unemployment rates were higher in the 1920s than in the 1970s. The high unemployment rates of the 1920s were due mainly to an extremely severe post-war recession in 1920-21, which created substantial unemployment which was not dispersed in subsequent cyclical upswings.

Despite the exceptional severity of the 1920-21 recession, there are many parallels to be drawn between the pre-slump experiences of the 1920s and 1970s. Post-slump experience has been markedly divergent, however; rapid recovery in the 1930s, but pervasive high unemployment in the 1980s.

A deep slump is always an economic disaster, especially for those who lose their livelihood. Once the slump has passed, its legacy of high unemployment and widespread poverty continues for a long time, even though the economy may be rapidly expanding. The scars of slump are present for a long time, with the memories of the 1930s being still bitterly felt amongst many of an older generation.[54] While the levels of poverty may not be as great now as in the 1930s, as some of the effects of fifty years of economic growth trickle down in the form of higher welfare benefits, it still remains the case that the social impact of unemployment over 3 million, and staying high, will be felt for many years to come.

3.6 Index of Regional Inequalities in Unemployment.

Before discussing in more detail the inter-war period, in chapter 4 below, a brief technical discussion is required of the development of an index of regional inequalities in unemployment. Regional inequalities in unemployment rates are currently high, as Table A8 shows, but also considerably less than in the inter-war years. It is useful to develop a convenient statistical indicator of regional inequalities in unemployment, not least because the debate amongst geographers as to whether regional "convergence" or "divergence" has been taking place at particular periods has been inconclusive.[55]

The problem of defining an appropriate index of regional inequality in unemployment can be broken down into two stages. Firstly it is necessary to find an appropriate method for defining the difference between a single region's unemployment rate and the national unemployment rate. Secondly it is necessary to find an appropriate method for converting individual scores for each region into an index of inequality. The obvious course would be to use a weighted standard deviation as a measure; it is argued below however that the standard deviation is an inappropriate measure of inequality for spatially aggregated data.

The question of measuring differences between regional (or local) and national unemployment rates would appear at first to be trivial; one would simply subtract one percentage unemployment rate from the other. Surprisingly, perhaps, it is more common to find regional differences in unemployment measured in terms of relativities (unemployment rates in an area as a percentage of unemployment rates nationally).[56] This latter approach may be superficially attractive, but is structurally highly unsuited to measuring changes in regional inequality through time. This may be seen by a statement of conditions under which measured levels of inequality remain constant with different types of measurement.

If relativities are used, then in a period of rising unemployment, unemployment would have to rise faster, as a percentage of the total workforce, in a high unemployment region than in a low unemployment region if unemployment relativities were to remain stable. If, for example, unemployment is twice as high in region A as in region B, then every percentage point increase in unemployment in region B would have to be met with a *two* percentage point increase in region A in order to maintain the status quo in the measurement. This could quite often mean that employment is increasing in region B while decreasing in region A, which cannot be regarded as a case of regionally even change which merely preserves existing inequalities. Under such circumstances, inequalities are increased under any sensible measurement. An even more

misleading result may be reached, using the method of relativities, if unemployment is increasing only 1½ times as fast (in percentage point terms) in region A as in region B. Under such circumstances, it would be possible to reach the spurious conclusion that there had actually been economic *convergence* between region A and region B.

The *apparent* shrinking of inter-area disparities noted in the early part of the post-1979 slump by Gillespie and Owen (1981) represents a spurious conclusion of this type, and this conclusion was challenged at the time by Crouch (1982a,b). On a more general level, Elias (1978 p.79), when he notes that "it is well known that the traditionally high unemployment regions of Great Britain .... have a lower cyclical response within their labour markets to changes in demand conditions", indicates more about the bias of the statistical method of his choice than about regional fluctuations in unemployment.

It is argued here that to present regional unemployment rates in terms of relativities (UK = 100, SE = 75, etc.) is misleading in that these measured relativities tend to vary systematically through the business cycle, converging in the downswing and diverging in the upswing, as a result of an in-built bias in the manner of calculation. It is argued, with even more emphasis, that it is incorrect, except in special circumstances, to measure changes in unemployment in terms of percentage increases or decreases (unemployment increased by 100% in region A, etc.), a method which assumes that relativities "ought to" stay stable during the business cycle. Probably the only circumstance in which the measurement of percentage rates of unemployment change is useful and valid is in the measurement of rates of absorption of unemployment during a cyclical upswing; this, however is a fairly specialised case.

The most appropriate way to measure and compare changes in the unemployment rate is through the use of percentage point differences, in which for example increases in unemployment from 3% to 6%, and from 9% to 12%, are considered statistically equal, the rise being three percentage points. If, using this measure, there appears to be a tendency for unemployment to increase more quickly in high unemployment regions than in low unemployment regions, this will be because high unemployment regions tend usually to be more prone to job loss than low unemployment regions; it will not be due to a bias in the method of measurement.

When comparing local unemployment rates with national unemployment rates, the percentage point difference is regarded, by extension of the previous argument, as a valid measure and the percentage difference is regarded as invalid; these two methods are *not* considered as equally valid alternatives. Sometimes, in the literature, a confusion of valid and invalid methods means that a simple but important point is buried

among much elliptical description. For example, Cheshire (1981, pp.196-197) writes:-

> "As national unemployment rises so the standard deviation of the relative regional rates declines; the absolute dispersion, however, widens. If we compare 1969 with 1976, the national unemployment rate doubled and the standard deviation of the relative regional rates halved. This is proportionately a greater reduction in the dispersion of relative regional rates than occurred between June 1966 and June 1969, when unemployment also approximately doubled."

It is hard to see how this line of argument could be satisfactorily extended under the terms given. If however the argument is recast in terms of unemployment differences (the "absolute dispersion") a more coherent statement emerges. It would run something as follows:-

> "As national unemployment rises, there is generally a tendency toward regional divergence in unemployment rates. If, however, we compare 1969 with 1976, a period in which the national unemployment rate doubled, the regional unemployment series shows neither convergence nor divergence. In the 1966-1969 period, in which unemployment also, approximately doubled, there was by contrast some regional divergence."

The point is that if national unemployment doubled, then one would *expect* in the neutral case that the "standard deviation of relative regional rates" would be halved. The size of absolute deviations, representing the variable component of the numerator, would remain the same, while the rate of unemployment, representing the variable component of the denominator, would have halved, thus halving the value of the fraction.

It is another question, though, whether the use of any standard deviation measure is appropriate for spatially grouped data, in order to provide an index of spatial inequality. This, surprisingly, is a subject on which the textbooks on geographical statistics consulted have remained almost wholly silent. The problem is, as will shortly be shown in more detail, that the measured size of the standard distribution of spatially grouped data is strongly dependent on the degree of spatial disaggregation used, with a consistent tendency for more disaggregated data to give higher readings for the standard deviation than less disaggregated data. Some texts (e.g. Gregory 1963, Silk 1979) illustrate the calculation of the standard deviation of spatial data using individual measurements taken at spatially discrete *points* (rainfall data being a common example), in which case the objection to the standard deviation measurement does not arise. Norcliffe (1977), however, uses as his illustration *areally*

based averages for corn yield per acre in counties of the USA mid-West. In such a case, the degree of spatial disaggregation which is used materially affects the value calculated for the standard deviation, but this problem is not mentioned. Taylor (1977 p.21) notes, almost in passing, that it is "obvious that the fewer number of units used, the less the variation that can be recorded", but does not go on to examine the implications of this in the measurement of spatial variability; at least the basic problem is mentioned, if only briefly. Finally, Gaile (1984) presents a list of ten different possible measures of spatial inequality, but again without discussion of how the degree of spatial disaggregation affects measured spatial inequality.[57]

The concept of the standard deviation is necessarily based not on groups of data, but instead on the statistical individual, the minimum object of observation, in this case a member of the workforce. It is given by

$$(1) \qquad SD = \left(\frac{\Sigma(x_i - \bar{x})^2}{n} \right)^{\frac{1}{2}}$$

where x_i is an individual observation

$\bar{x}$ is the arithmetic mean of the observations

n is the number of observations

and SD is the standard deviation

Often, when data *samples* are being used, the denominator of the equation is given as (n-1) instead of n, to correct for any downward bias through the sample mean being different from the population mean. In principle, the whole population is being considered here, rather than a sample, so this correction would not be appropriate.

In the case being considered there are only two possible individual observations; either a person is 100% unemployed or 0% unemployed, and the ratio between the number of observations of each type uniquely determines the value of the standard deviation, which is given by

$$(2) \qquad SD = \left(\frac{(100-Un)Un^2 + Un(100-Un)^2}{100} \right)^{\frac{1}{2}}$$

where $(100-Un)Un^2$ represents the summed squared deviations for the (100-Un)% of the population in employment

and $Un\ (100-Un)^2$ represents the summed squared deviations for the Un% of the population who are unemployed.

This result holds at the individual level, and irrespective of the level of spatial aggregation.

Now consider what happens when the individual data are aggregated, and standard deviation measures are taken of the aggregated data. Total variance, that is SD^2, may be taken as the sum of within-group variance plus the sum of between-group variance, and the measure of spatial inequality based on the standard deviation would be given by the square

root of the between-group variance. It follows from this that *any* aggregation which increases total within-group variance *necessarily* reduces the calculated value of the spatial inequality index.

Unfortunately, any aggregation of data groups necessarily increases total within-group variance, except in the special case in which two groups to be aggregated have identical means. This is because the sum of squared deviations from a selected value is at a minimum when that value is the mean. If a group is merged with another group, then the sum of squared deviations is measured not from the mean for each sub-group but from the mean of the whole group, which is different. As a result, the in-group variance of the larger group will be higher than the sum of the in-group variances of the smaller groups, and as a corollary, between-group variance would be lower.

A standard deviation index of regional unemployment inequality would be based on the square root of the between-group variance, which systematically gets smaller as the number of groups gets smaller, and conversely increases with further disaggregation. A hypothetical example is worked out in Table 3.18. Two other forms of inequality index are also presented. One is a measure using the mean deviation, given by

$$(3) \qquad Cn = \sum \frac{Pr}{Pn} \; |(Ur-Un)|$$

where Cn is the regional unemployment diversity index

and Pr, Pn are the insured populations, regionally and nationally.

This is the preferred method of measuring unemployment inequality. It has the advantage of being highly robust to boundary changes, and provides a measurement in the same units as the original measurements. Such an index can be made dimensionless by dividing Cn (the diversity index) by Un (the national employment rate), in which case the Schutz/Kuznets[58] index of spatial inequality is derived, but this procedure is not recommended here since in effect it leads to a measure of unemployment inequality based on unemployment relativities rather than on unemployment differences.

The other method tested in Table 3.18, Theil's entropy index (Theil 1967, 1972) is found to be extremely unstable under varying levels of disaggregation and is therefore unsuited to measuring spatial inequality.

Values for Cn as defined in equation (3) have been calculated for every month from 1923 onwards. Table A8 presents the results, given for each month in which regional unemployment figures have been presented in Table A7. The only extent to which the Cn value is dependent on the regionalisation used is if areas with above average unemployment and below average unemployment (in national terms) are to be found in the same region. In such a case, the following term has to be added on:

$$Cn' = 2 \sum \frac{Pr'}{Pn} \left| (Ur' - Un) \right|$$

where Pr' and Ur' indicate population and unemployment rates in anomalous sub-regions, either those with below average unemployment rates in regions of above average unemployment, or those with above average unemployment rates in regions of below average unemployment.

The increment involved would not be large, and has not been included in Table A8. For December 1984 it would work out at 0.3 percentage points for a value of Cn of 2.8, if calculations were made using 67 counties instead of 11 regions, a 10% increase in the value of the index for a six-fold increase in the degree of spatial disaggregation. Most of the increase is explained by the Grampian and Lothian regions of Scotland, and by North Yorkshire and Cornwall.

It should perhaps be noted that the fact that such an increment is relatively slight is due to a high degree of spatial autocorrelation in unemployment rates; that is, areas with high or low rates of unemployment congregate spatially to a far greater degree than would be expected by chance. Such autocorrelation results from migrationary trends, tending to equalise unemployment rates within a region, as well as from similarities of economic structure in neighbouring areas. Clark (1980) argues that the lack of any explicit analysis of *problems* caused by spatial autocorrelation has been a weakness of attempts to measure spatial inequality in unemployment. It is argued here that on the contrary it is only the presence of high degrees of spatial autocorrelation in unemployment which makes it possible to derive a meaningful index of spatial inequality in unemployment.

The value of the Cn index is an indicator of the extent of accumulated and undispersed effects of past economic events, while changes in the value of the Cn index are generated by current economic events. As Table A8 shows, the value of the Cn index is cyclically variable, showing higher levels of regional unemployment inequality during cyclical troughs than during corresponding cyclical peaks, and also showing a long term tendency to increase if the rate of unemployment is increasing in the long term.

The rise in the Cn index during recessions is readily understandable; job losses occur, and unemployment accumulates in the vicinity of the job loss event, causing certain areas to have much higher than average increases in unemployment. It takes a considerable period of time before *local* job loss events can be substantially offset by the changes in the *interregional* flows of workforce migration which can reduce measured regional inequalities in unemployment. It needs to be emphasised that migration *within* a high unemployment region has no effect on the size of the national Cn index, although it reduces unemployment differentials

between depressed areas with very high unemployment and areas with slightly higher than average unemployment.

In the short term, a highly uneven spatial pattern of job loss is likely to cause the value of the Cn index to rise sharply, unless as in the mid-1970s recession (chapters 5 and 6 below) low unemployment areas such as the West Midlands are severely affected by job loss.

The next question to consider is what happens to the Cn index in the longer term, whether unemployment inequalities generated by recession fade away with time, or whether they are maintained. Table A8 shows that during the post-war long boom the value of Cn remained fairly stable, fluctuating between 0.5 and 0.9, with temporary increases to 1.0 or slightly above in recessionary phases (1959, 1963, and a maximum of 1.3 in 1952, in which year regional employment change was highly uneven). The cyclical variability of this index, combined with its long run stability, suggest that regional accumulations of unemployment in the relatively minor recessions of the long boom were dispersed in subsequent upswings. The fact that the Cn index remained very high with respect to the level of national unemployment, which was generally standing at between 1% and 2% during the post-war boom, suggests that many of the inter-war inequalities had still not been completely dispersed, even during the period of full employment. The growth of employment during the long boom tended to *preserve* underlying regional differences in unemployment rather than to *eliminate* them.

Changes in the Cn index during the post-1966 downswing were complicated. In general, unemployment tended to accumulate more quickly in high unemployment areas than in low unemployment areas, creating a long term tendency for the value of the Cn index to rise. The boom year of 1972-73, however, caused employment to rise more quickly in the relatively depressed peripheral regions than in the core regions, cauging a substantial reduction in the value of the Cn index. Even so, the predominant tendency was for regional unemployment inequalities to increase, though slowly, during the long cycle downswing. Chapter 5.4 presents a more detailed discussion on this subject.

The Cn index was originally devised not to analyse the post-war period, but rather in order to aid examination of regional economic trends in the inter-war period. Regional unemployment differences started the period as being small and even favouring the North, but in 1981 the Cn value reached 7.3, or over four times its 1924 value, before gradually subsiding in the post-slump recovery. Allowing for differences in the base figures for calculating unemployment (section 3.5 above), a Cn figure of perhaps 5.5 would be an approximate equivalent to the value of 7.3 in September 1931. The large increases in the Cn index during

this period can be traced to two phases; early 1925 and the early slump (1930-31). These were two phases in which North-South differences in the rate of employment change were exceptionally great (Table A6).

When annual gaps of over 7% appear in the rate of employment change between North and South, it is extremely difficult to conceive of a level of migration which would absorb these differences in employment performance, and retain the status quo in terms of differences in unemployment. Inevitably, a high proportion of the job loss in the North appears as unemployment in the North, while unemployment in the South still remains relatively low, although still swollen by changes in the normal flow of migration. As chapter 4 below shows, large drops in employment in the periphery were reflected in large increases in unemployment, while in the South, unemployment crept up slightly in the context of large increases in employment.

While employment was rising rapidly in all regions after 1932, the pools of unemployment created by earlier job losses could drain only slowly. The Cn index fell during this period, largely as a result of substantial volumes of migration away from the depressed areas, but even by the late 1930s there was much unemployment in the peripheral regions which had not been absorbed in the post-slump recovery. Regional differences in the unemployment rate opened up suddenly and sharply in the inter-war recessions, but subsided slowly. The next chapter considers the period in more detail.

Table 3.1 Unemployment Levels and Inter-Censal Population Changes in North West England, 1971-1981

County	Unemployment rate,(%), Feb. 1981	Population change (%) 1971-1981	Employment change (%) 1971-1981
Greater Manchester (Met.)	11.2	-4.9	-9.5
Merseyside (Met.)	15.7	-8.7	-17.8
Cheshire	10.7	+6.9	-0.7
Lancashire	11.1	+2.0	-1.3

Sources: *Gazette* (April 1981, S30); 1981 Census; Census of Employment, 1971, 1981

Note: No unemployment figures were available by county for March 1981, or April 1981 (the month of the Census of Population)

Table 3.2 Unemployment Levels and Inter-Censal Population Changes in Great Britain, 1971-1981

Region	Unemployment rate (%) (i) April 1981	(ii) Change 1971-1981	Population change (%) 1971-1981	Employment change (%) 1971-1981
London	7.0	+5.4	-9.9	-10.4
Rest of SE	7.6	+5.2	+6.4	+9.9
EA	8.4	+5.2	+12.1	+10.5
SW	9.3	+5.8	+6.6	+7.7
WM	12.6	+9.4	+0.8	-8.8
EM	9.5	+6.4	+5.1	+2.7
YH	11.2	+7.6	+0.1	-4.9
NW	12.8	+8.1	-2.8	-8.3
N	14.5	+9.2	-1.2	-7.7
Wa	13.8	+9.2	+2.2	-3.6
Sc	12.9	+9.2	-1.9	-1.7

Sources: Tables A4, A7; Census 1981. Unemployment rates for Rest of South East calculated indirectly.

Table 3.3 Population Levels in Ireland, 1821-1911

Date	Population of Ireland (Millions)	Decennial rate of change of population		Emigration in decade ending at date shown		Total as percentage of Irish population at start of decade
		Ireland (%)	Great Britain (%)	Total (Millions)	To USA (Millions)	
1821	6.80	-	-	-	-	-
1831	7.77	+14.2	+15.4	-	-	-
1841	8.18	+5.3	+14.0	-	0.24	-
1851	6.55	-19.9	+12.3	-	0.96	-
1861	5.80	-11.5	+11.1	1.16	0.72	17.7
1871	5.41	-6.7	+12.7	0.85	0.50	14.7
1881	5.17	-4.4	+14.0	0.62	0.45	11.6
1891	4.70	-9.1	+11.2	0.77	0.64	14.2
1901	4.46	-5.2	+12.0	0.43	0.36	9.2
1911	4.39	-1.5	+10.4	0.35	0.34	7.8

Sources: Mitchell (1975, pp.21, 24 and 139-142); Vaughan and Fitzpatrick (1978 p.3). Thomas (1973 p. 398) for Irish migration to USA, based on USA immigration statistics.

Vaughan and Fitzpatrick (1978) provide more detailed population statistics, at the level of nation, county and town, based on Census data and enumeration of emigration.

Table 3.4 The Distribution of the Population of Great Britain, North, Midlands, South, 1801-1981

Date	Proportion of Britain's Population						
	(1) South SE,EA,SW	(2) Midlands WM,EM	(3) North YH,NW,N, Wa,Sc	(4) North West	(5) Yorks. and Humb.	(6) Exporting coalfields N,Wa	(7) Scotland
	Rows sum to 100%			Rows sum to figure for North, column (3)			
1801	43.1	15.4	41.5	8.1	6.6	11.7	15.1
1811	42.8	15.5	41.7	8.7	6.8	10.9	14.9
1821	42.6	15.1	42.3	9.3	6.9	11.2	14.7
1831	42.1	15.1	42.8	10.2	7.2	10.9	14.4
1841	40.8	15.2	44.0	11.1	7.5	11.1	14.1
1851	40.1	15.1	44.8	12.0	7.7	11.3	13.9
1861	39.5	15.2	45.3	12.7	7.8	11.6	13.2
1871	39.1	14.9	46.0	13.0	8.3	11.8	12.9
1881	38.2	14.8	47.0	13.8	8.6	11.9	12.8
1891	38.3	14.6	47.1	14.1	8.7	12.1	12.2
1901	38.2	14.6	47.2	14.1	8.7	12.2	12.1
1911	38.2	14.6	47.2	14.0	8.7	12.8	11.7
1921	38.0	14.8	47.2	13.9	8.5	13.3	11.4
1931	39.0	15.1	45.9	13.7	8.8	12.6	10.8
1951	40.3	16.2	43.5	13.1	8.4	11.7	10.4
1961	41.1	16.5	42.4	12.7	8.1	11.5	10.1
1971	42.0	16.8	41.2	12.3	8.0	11.2	9.7
1981	42.3	17.1	40.6	11.9	8.0	11.2	9.5

Source: Table A3

Table 3.5 Measured Employment change by Region, 1841-1911

Period	Employment change (per cent) All figures are positive unless otherwise stated										
	SE	EA	SW	WM	EM	NW	YH	N	Wa	Sc	GB
1841-51	*39.5*	*36.2*	*29.4*	*38.7*	*36.7*	*42.4*	*46.2*	*34.6*	*32.9*	*26.4*	*36.3*
1851-61	16.7	18.3	4.5	16.1	7.1	19.6	12.1	17.1	12.1	5.3	12.3
1861-71	10.8	3.3	2.9	10.6	8.2	15.4	21.2	22.1	9.9	9.4	11.4
1871-81	*15.5*	*-4.2*	*-5.5*	*5.1*	*7.8*	*12.9*	*9.4*	*10.5*	*4.9*	*7.5*	*8.7*
1881-91	16.5	4.1	4.3	11.1	12.9	16.3	17.1	16.0	19.4	11.0	13.9
1891-1901	16.7	1.9	5.0	12.0	14.6	10.7	10.9	12.9	8.2	12.7	12.3
1901-11	14.2	9.1	8.9	12.1	14.3	12.4	13.6	12.6	21.7	4.4	12.3

	1841-51	1851-61	1861-71	1871-81	1881-91	1891-1901	1901-1911
South	+36.7	+11.8	+8.5	+7.9	+12.6	+13.2	+13.0
North	+35.9	+12.9	+14.9	+9.6	+15.4	+11.3	+11.6
Great Britain	+36.2	+12.3	+11.4	+8.7	+13.9	+12.3	+12.3

Source: Lee, 1979, based on Census data.

There are two main discontinuities in this series:
(1) 1841 employment, particularly amongst women and particularly in agriculture, would appear to have been greatly under-enumerated in comparison with later Census dates.

(2) The exclusion of retired people from the enumerated workforce from 1881 onwards explains the apparently low rate of employment growth between 1871 and 1881.

In addition, it needs to be recognised that the Census figures make no clear distinction between employment and unemployment, which restricts the use to which these figures can be put.

Table 3.6 Employment Growth by Region 1851-71 and 1871-1911

Region	Employment growth rate			
	Total (per cent)		Per cent per annum	
	1851-71	1871-1911	1851-71	1871-1911
SE	+29.3	+79.4	+1.3	+1.5
EA	+5.2	+10.9	+0.3	+0.3
SW	+7.6	+12.7	+0.4	+0.3
WM	+28.5	+46.7	+1.3	+1.0
EM	+15.9	+59.4	+0.7	+1.2
NW	+38.0	+63.4	+1.6	+1.2
YH	+35.8	+61.3	+1.5	+1.2
N	+43.0	+62.9	+1.8	+1.2
Wa	+23.2	+64.9	+1.0	+1.3
Sc	+15.2	+40.4	+0.7	+0.9
GB	+25.0	+56.1	+1.1	+0.9

Source: Table 3.5, based on Lee 1979 and Census data.

For reasons noted in Table 3.5, the figures produced above for 1871-1911 represent slight underestimates (of perhaps about 4 percentage points, or 0.1 per cent per annum) of the actual growth rate.

Table 3.7 Number of Insured Employees (Employed plus Unemployed) 1923-1935

Year	Number of Insured employees (employed plus unemployed) (000s)					
	Total		Male		Female	
	Number	Change	Number	Change	Number	Change
1923	11485.8		8492.9		2992.9	
1924	11664.0	+178.2	8585.8	+92.9	3078.2	+85.3
1925	11892.0	+228.0	8717.4	+131.6	3174.6	+96.4
1926	12041.0	+149.0	8843.8	+126.4	3197.2	+22.6
1927(a)	12131.0	+90.0	8899.0	+55.2	3232.0	+34.8
1927(b)	11784.0	-	8576.2	-	3207.8	-
1928	11881.5	+97.5	8621.9	+45.7	3259.6	+51.8
1929	12094.0	+212.5	8755.4	+133.5	3338.6	+79.0
1930	12405.7	+311.7	8931.5	+176.1	3474.2	+135.6
1931	12771.8	+366.1	9188.4	+256.9	3583.4	+109.2
1932	12809.8	+38.0	9303.7	+115.3	3506.1	-77.3
1933	12885.0	+75.2	9346.0	+42.3	3539.0	+32.9
1934	12960.0	+75.0	9435.2	+89.2	3524.8	-15.2
1935	13058.0	+98.0	9531.0	+95.8	3527.0	+2.2

1923-1927(a); aged 16 and over

1927(b)-1935; aged 16-64

This table has been constructed to indicate unusual changes in the measured size of the workforce, resulting from legislative changes. Note for example the anomalous drop in the size of the female workforce in 1981-32.

Source: *Historical Abstract*, Tables 111, 112, 113.

Table 3.8 Employment East of the Pennines, 1929-1936

Year	Total employment ('000s)		Change since previous year (%)		
	YH	NE	YH	NE	UK
1929	1240	517	-	-	-
1930	1163	491	-6.3	-5.1	-4.1
1931	1085	426	-6.7	-13.1	-4.2
1932	1070	407	-1.4	-4.7	-1.0
1933	1135	414	+6.0	+1.8	+4.3
1934	1147	450	+1.1	+8.8	+4.3
1935	1154	454	+0.6	+0.8	+2.0
1936	1232	489	+6.8	+7.7	+5.2

Source: Beck 1951, Table 17;
Table A5 (supplementary)

(YH: Yorkshire and Lincolnshire;

NE: Durham and Northumberland)

Table 3.9 A Comparison Between Figures for the Annual Rate of Employment Change in the UK, According to Beck (1951) and the *Historical Abstract*

Year	July unemployment minus June unemployment		Expected difference: employment change calculated using July figures minus employment change calculated using June figures		Employment change in the UK according to Beck (1951) (July figures) minus employment change according to *Historical Abstract* (June figures)
	(000s)	(As % of UK insured population)	(000s)	(%)	(%)
1929	12	0.1			
1930	125	1.0	-113	-0.9	-1.2
1931	47	0.4	+78	+0.6	+0.8
1932	63	0.5	-16	-0.1	+0.3
1933	3	0.0	+60	+0.5	+0.4
1934	36	0.3	-33	-0.3	-0.5
1935	-23	-0.2	+59	+0.5	+0.3
1936	-49	-0.4	+26	+0.2	+0.5
1937	22	0.2	-71	-0.5	-0.7
1938	-19	-0.1	+41	+0.3	-1.7
1939	-91	-0.7	+72	+0.5	+1.1

The fairly close match between the two series in the last two columns up to 1937 suggests that the bulk of the difference between employment series based on Beck (1951) and those based on the *Historical Abstract* results from July unemployment figures being used in the calculations in one case (Beck) and June figures being used in the other (*Historical Abstract*).

Calculations based on Beck (1951, Tables 2 and following) and *Historical Abstract*, Tables 111, 162.

Table 3.10 Changes in Numbers of Employees in Employment by Region in Great Britain, June 1978 to September 1981; Census of Employment and Unrevised Quarterly Estimates.

Region	Change in employment ('000s)					
	in production industries		in service industries		total	
(London)	-134	(-133)	-32	(-76)	-167	(-208)
(Rest of South East)	-109	(-181)	+132	(-14)	23	(-194)
South East	-243	(-314)	+99	(-90)	-144	(-403)
East Anglia	-22	(-32)	+16	(-10)	-7	(-43)
South West	-59	(-56)	+16	(-6)	-41	(-60)
West Midlands	-232	(-234)	+14	(-27)	-217	(-260)
East Midlands	-92	(-100)	+13	(+3)	-77	(-98)
Yorks. and Humbs.	-155	(-156)	-2	(-23)	-158	(-179)
North West	-203	(-198)	+16	(-46)	-186	(-243)
North	-107	(-94)	-6	(-21)	-115	(-115)
Wales	-87	(-85)	+3	(-23)	-84	(-108)
Scotland	-137	(-143)	+44	(-9)	-97	(-155)
Great Britain	-1338	(-1411)	+214	(-252)	-1126	(-1664)

Changes measured by the Census are outside brackets; changes according to unrevised quarterly estimates are within brackets.

Note: The total equals changes in production industries plus changes in agricultures, forestry and fishing (not separately given here), plus changes in the service sector.

Source: *Gazette*, December 1982, p.506

Table 3.11 Unemployment Between the Wars; Feinstein's Estimates.

(1) Year	(2) Percentage of insured workforce unemployed	(3) Percentage of total workforce unemployed	(4) Percentage of total workforce, excluding temporarily stopped, unemployed
1921	17.0	12.2	-
1922	14.3	10.8	-
1923	11.7	8.9	-
1924	10.3	7.9	-
1925	11.3	8.6	-
1926	12.5	9.6	7.2
1927	9.7	7.4	5.9
1928	10.8	8.2	6.6
1929	10.4	8.0	6.5
1930	16.1	12.3	9.5
1931	21.3	16.4	13.5
1932	22.1	17.0	14.1
1933	19.9	15.4	13.1
1934	16.7	12.9	11.1
1935	15.5	12.0	10.4
1936	13.1	10.2	9.0
1937	10.8	8.5	7.5
1938	12.9	10.1	8.3

Source: Feinstein (1972) T128.

Column (2) is the official unemployment rate. Column (3) shows total unemployment (both insured and uninsured) as a precentage of the total labour force, and is an estimate. Column (4), not calculated by Feinstein, is as column (3), but with temporarily stopped workers removed from the estimates.

Table 3.12 Male and Female Unemployment Rates, selected European Countries, 1984 Average

Country	Unemployment rate (1984 Average) (%)		
	Males	Females	Ratio Male: Female rates
UK	15.7	9.4	1.7
Ireland	17.1	14.0	1.2
Belgium	11.0	19.5	0.6
Netherlands	16.7	19.6	0.9
West Germany	8.5	10.2	0.8
Italy (1983 figures)	6.6	16.2	0.4
Denmark	8.9	12.7	0.7

Source: *Bulletin of Labour Statistics* (International Labour Office) 1986-1

Table 3.13 Changes in the Size of the UK Workforce, 1971-1980.

Date	Working population (Thousands) (Seasonally adjusted)	Change since previous year (Thousands)
1971 Sept	25116	(-233)
1972 Sept	25402	+286
1973 Sept	25556	+154
1974 Sept	25785	+229
1975 Sept	26017	+232
1976 Sept	26142	+125
1977 Sept	26311	+169
1978 Sept	26433	+122
1979 Sept	26656	+223
1980 Sept	26870	+214
(Average change, 1971-1980		+195

Source: *Gazette*, August 1984 (*Historical Supplement*)

Table 3.14 Estimates of Increments in Concealed Unemployment 1979-1984

Date		Working population (Thousands) (seasonally adjusted)	Working population (Thousands) (Expected series seasonally adjusted	Accumulation of Concealed Unemployment since 1979 (Thousands)	Percent of workforce - expected series
1979	June	26646	26646	0	0
	Sept	26656	26695	39	0.1
	Dec	26737	26743	7	0.0
1980	Mar	26766	26792	26	0.1
	June	26869	26841	-28	-0.1
	Sept	26870	26890	20	0.1
	Dec	26866	26938	72	0.3
1981	Mar	26837	26987	150	0.6
	June	26784	27036	252	0.9
	Sept	26871	27084	213	0.8
	Dec	26799	27133	334	1.2
1982	Mar	26786	27181	395	1.5
	June	26745	27231	486	1.8
	Sept	26745	27279	534	2.0
	Dec	26703	27328	625	2.3
1983	Mar	26689	27377	688	2.5
	June	26669	27426	757	2.8
	Sept	26782	27474	692	2.5
	Dec	26885	27523	638	2.3
1984	Mar	27014	27572	558	2.0
	June	27111	27620	509	1.8
	Sept	27245	27669	424	1.5
	Dec	27360	27718	358	1.3

Source: *Economic Trends* March 1986; *Economic Trends 1986 Annual Supplement* for Working Population (actual series).
Expected series calculated by adding 195,000 per annum to the June 1979 working population.

Table 3.15 Male and Female Employment, 1979-1984

Date		Employees in employment (seasonally adjusted, '000s)		Change in employment since previous quarter ('000s)		Change in employment since previous quarter (Annual percentage rate)	
		Male	Female	Male	Female	Male	Female
1979	Mar	13457	9587	-5	+33	-0.1	+1.4
	Jun	13474	9664	+17	+77	+0.5	+3.3
	Sept	13484	9692	+10	+28	+0.3	+1.2
	Dec	13462	9728	-22	+36	-0.7	+1.5
1980	Mar	13391	9700	-71	-28	-2.1	-1.1
	Jun	13303	9646	-88	-54	-2.6	-2.2
	Sept	13115	9556	-188	-90	-5.5	-3.7
	Dec	12915	9450	-200	-106	-6.0	-4.4
1981	Mar	12722	9373	-193	-77	-5.8	-3.2
	Jun	12544	9301	-178	-72	-5.5	-3.0
	Sept	12431	9291	-113	-10	-3.6	-0.4
	Dec	12325	9238	-106	-53	-3.4	-2.3
1982	Mar	12277	9226	-48	-12	-1.5	-0.5
	Jun	12201	9173	-76	-53	-2.5	-2.3
	Sept	12109	9097	-92	-76	-3.0	-3.3
	Dec	12040	9053	-69	-44	-2.3	-1.9
1983	Mar	11983	9028	-57	-25	-1.9	-1.1
	Jun	11937	9087	-46	+59	-1.5	+2.6
	Sept	11915	9145	-22	+58	-0.7	+2.6
	Dec	11906	9223	-9	+78	-0.3	+3.5
1984	Mar	11873	9262	-33	+39	-1.1	+1.7
	Jun	11839	9286	-34	+24	-1.1	+1.0
	Sept	11825	9332	-14	+46	-0.5	+2.0

Source: *Gazette, Historical Supplement*, April 1985.

Annual percentage rates are given by grossing up quarterly rates of employment change.

Table 3.16 Unemployment Estimate, 1979-1984, Allowing for Concealed Unemployment

Date	Registered unemployment (000s)	Accumulation of concealed unemployment (000s)			Total unemployment (000s)	(%)	Official rate (%)
		(i) To mid 1979	(ii) Change in method of counting*	(iii) After mid 1979			
1979 June	1233	140	67	0	1440	5.4	5.1
Sept	1212	140	67	39	1458	5.5	5.0
Dec	1224	140	67	7	1438	5.4	5.1
1980 Mar	1321	140	67	26	1554	5.8	5.5
June	1469	140	67	-28	1648	6.1	6.1
Sept	1713	140	67	20	1940	7.2	7.1
Dec	2014	140	67	72	2293	8.5	8.4
1981 Mar	2238	140	67	150	2595	9.6	9.5
June	2417	140	67	252	2876	10.6	10.2
Sept	2555	140	67	213	2975	11.0	10.8
Dec	2629	140	67	334	3170	11.7	11.1
1982 Mar	2688	140	67	395	3290	12.1	11.5
June	2773	140	67	486	3466	12.7	11.9
Sept	2866	140	67	534	3607	13.2	12.3
Dec	2949	140	67	625	3781	13.8	12.2
1983 Mar	3026	140	67	688	3921	14.3	12.5
June	2967	140	67	757	3931	14.3	12.3
Sept	2951	140	67	692	3850	14.0	12.3
Dec	2946	140	67	638	3791	13.8	12.3
1984 Mar	3014	140	67	558	3779	13.7	12.5
June	3032	140	67	509	3748	13.6	12.5
Sept	3091	140	67	424	3732	13.5	12.8
Dec	3106	140	67	358	3671	13.2	12.8

* Mid-1979 unemployment on pre-1982 basis minus mid-1979 unemployment on post-1982 basis

For notes, sources, etc., see next page

Table 3.16 Method of calculation

Total unemployment equals

	Official unemployment rate (post-1982 basis)
plus	Allowance (140,000) for concealed unemployment in mid-1979 (see text)
plus	Allowance (67,000) for change in the method of counting in 1982
plus	Estimate for the accumulation of employment after mid-1979

The total unemployment thus calculated is then expressed as a percentage of the total workforce (*including* self-employed and HM Forces), the size of the workforce being estimated using the size of the workforce in mid-1979, and an allowance of 195,000 per annum for "natural growth". The denominator in the official series excludes the self-employed and HM Forces.

The allowance for concealed employment in 1979 is based on a Department of Employment estimate that the undercount of unemployed women in 1977 stood at between 150,000 and 200,000. This was scaled down to allow for cyclical changes in unemployment between 1977 and 1979. For the purposes of constructing this table, it is assumed that pre-slump levels of concealed unemployment amongst males were slight.

The allowance for the change in method of counting in 1982 is the difference for June 1969 between unemployment recorded on a pre-1982 basis and unemployment recorded on a post-1982 basis. These two series subsequently diverged; these later divergences would be detected in the series for the accumulation of concealed unemployment after 1979.

The series for the accumulation of concealed unemployment after 1979 represents the difference, in Table 3.14, between the registered size of the working population and the expected size of the working population.

No allowance is made, in calculations, that placement on various "training schemes" might legitimately be regarded, in large numbers of cases, as a form of concealed unemployment.

Important: It is considered that it would be unwise to continue this series too far beyond 1984 without giving serious consideration to the question of whether the rate of natural increase of the workforce calculated for the 1970s is applicable to the late 1980s.

Table 3.17 UK Unemployment Rates, 1921-1938 and 1966-1984 on an Attempted Comparable Basis.

Year	Average unemployment Rate (%)	Year	Average Unemployment Rate (%)
		1966	1.2
		1970	2.6
		1971	3.5
1921	12.2	1972	3.8
1922	10.8	1973	2.6
1923	8.9	1974	2.7
1924	7.9	1975	4.3
1925	8.6	1976	5.8
1926	9.6	1977	6.2
1927	7.4	1978	6.0
1928	8.2	1979	5.4
1929	8.0	1980	6.9
1930	12.3	1981	10.7
1931	16.4	1982	12.9
1932	17.0 ⟵ peak unemployment ⟶	1983	14.1
1933	15.4	1984	13.5
1934	12.9		
1935	10.0		
1936	10.2		
1937	8.5		
1938	10.1		

Source: 1921-1938, Feinstein (1972) (see Table 3.11 above)
1966-1984: official unemployment statistics to 1978; Table 3.17 thereafter. It is assumed that prior to 1979, the effects of concealed female unemployment (reducing measured unemployment rates by about one tenth) cancelled out the non-appearance in the denominator of official unemployment rates of the self-employed and HM Forces.

Table 3.18 Measures of Regional Unemployment Inequality at Different Levels of Regionalisation (hypothetical example)

Case	Size of Region (units)	Unemployment rate (%)	Mean deviation	Standard deviation	Theil's entropy index
	3	7%			
1	3	9%	2.4%	2.5%	1.12
	4	13%			
	3	7%			
	3	9%			
2	(2	12%)	2.4%	2.65%	1.40
	(2	14%)			
	(1	5%)			
	(2	8%)			
3	3	9%	2.4%	2.79%	1.74
	(1	11%)			
	(1	13%)			
	2	14%			

Un = 10%

Bracketed groups indicate that a larger group has been disaggregated.

Mean deviation: $Cn = \sum \frac{Pr}{Pn} |(Ur-Un)|$

Standard deviation: $SD = \left[\sum \frac{Pr}{Pn} (Ur-Un)^2\right]^{\frac{1}{2}}$

Theil's entropy index: $I = -\sum \frac{Pr}{Pn} \log e \frac{UrPr}{UnPn}$ (Theil 1967, 1972)

Notes to Chapter 3

1. See especially Rawstron (1964). Buxton (1978 p.57) shows that around the mid-19th century, roughly two thirds of coal production was used by manufacturing industry with the iron industry using up about a quarter of all production. Coal was a very expensive product to transport, with prices at London being perhaps twice the price at the pithead (chapter 9.6 below); it was also vital as a source of energy for mass industrial production. As a result of these technical factors, the industrialisation of Britain could be seen in terms of "a laying of population and enterprise on the areas which had coal underneath." (Fay 1928 p.260, cited by Buxton 1978 p.58).

2. Thomas (1973 pp.290-295) emphasises the importance of coal exports in the Welsh economy after 1851. South Wales had developed a substantial iron and steel industry during the industrial revolution and into the 19th century (Minchinton 1964, Birch 1967 pp.166-171), but its other manufacturing industries were weakly developed. The iron industry was such a prodigious consumer of energy, however, that the growth of this industry itself strongly weighted the structure of the economy towards an ultimately excessive dependence on coal mining. Thus in 1871, metal manufacture accounted for 12.8% of employment in Glamorgan and Monmouth, with mining and quarrying accounting for 20.2%, while Lancashire and the West Riding of Yorkshire each had a radically different gearing of coal mining employment to employment in the main local manufacturing industry. In Lancashire, textiles accounted for 31.9% of employment, and mining and quarrying 4.3%, while in the West Riding textiles accounted for 30.5%, and mining and quarrying 6.2% (all figures based on Lee 1979).

3. On Ulster's 19th century development, see Kennedy and Ollernshaw (ed.) (1985), particularly the paper by Ollernshaw (1985).

4. Allen (1929) gives an especially thorough account.

5. The assertion in neo-classical theory that regional differences in the unemployment rate should disappear in time is based ultimately on the assumption, or rather dogma, that employment growth is spatially even, or possibly weighted in favour of regions with high unemployment, as jobs are redirected from areas of labour shortage to areas of labour surplus. As chapters 4, 5, 6, 7 and 8 below show, this assumption is quite simply false. Johnson (1978 p.219) rejects the notion that a competitive system could fail to produce sufficient job opportunities at full employment in certain regions, and implies that no recourse to empirical evidence is necessary since "even the most cursory thought on the matter" is sufficient to prove the point. Faced with persistent regional inequalities in employment, he suggests that this results from "some sort of social choice in favour of a lower probability of employment at high wages and higher probability of leisure time" despite the general tendency of wages to be higher in urbanised regions of low unemployment (see *Regional Trends*, various). Ironically, this piece of pseudo-analysis represented part of a broadside suggesting that American economics is scientific and British (Keynesian) economics is consistently unscientific.

6. The dominant feature of migration analysis would appear to be a concentration on examining which types of people migrate, how far, and where, with relatively little attention being given to examining the *aggregate* net flows which are so important in labour market accounting. Jones (1981 pp.200-250) provides a useful review of both "micro" and "macro" approaches to internal migration. Yet the macro-analytical

models identified by Jones, when discussing *internal* migration, based often on the "social physics" approach (see especially Zipf 1949), bear little relation to the type of macro-analytical model being advanced in this thesis. It is interesting to note, for example, that while Ravenstein (1885, quoted also in Jones 1981 p.214) was very explicit in seeing internal migration as being fuelled by spatial differentiation between areas of rapid economic growth and areas of slow growth, later writing has tended to downgrade this aspect, concentrating instead on the question of "distance decay curves" in migration. Studies of *international* migration (see the surveys in Jones 1981 pp.251-278, Salt 1987, also the classic work of Thomas 1954) which pay more attention to questions of chronic labour surplus versus economic opportunity, and of the role of the development of networks of information to channel migration flows in the appropriate directions, seem in many respects closer to the approach followed here.

The tension between macro-analytical models and micro-analytical models is an important one in any social science. Micro-analytical models attempt to build up aggregate patterns by summing individual cases, which are regarded as discrete, and thus by attributing the total pattern to the "psychology" of members of society. Such an approach is limited to the extent that individual decisions are *not* simply emanations of psychological desires, but rather are constrained or encouraged by the networks of problems and opportunities currently existing, and arising from *outside* the mind of the individual. To take an extreme case, the Irish migrations of the 1840s are chiefly attributable to exceptionally adverse economic conditions and not to "wanderlust" on a mass scale. A micro-scale analysis can reach maturity *only* if close attention is placed on structural features, and indeed on the changing structures generated by changing economic conditions. A macro-scale analysis, however, can generally be conducted in a satisfactory manner without continual reference to the micro-scale, provided that the analysis is constructed in such a way that there is scope for fitting micro-scale observations (e.g. the question of which people migrate) into larger scale observations (e.g. net migration to or from a particular place in a given year).

This methodological point is of central importance in all the arguments which follow in the rest of the thesis. To apply the same arguments to unemployment, for example, any study of unemployment is very seriously flawed if it attempts to explain unemployment merely in terms of the characteristics of the unemployed. A mature analysis of unemployment would involve, and indeed is best initiated by, an examination of the changing structures of unemployment, seen in terms of shifts in the supply and demand for labour at particular times and in particular places. Once this has been done, one can enquire meaningfully and productively into such questions as the age composition of unemployment, etc. The emphasis throughout this thesis has been on establishing a firm macro-analytical framework for studying labour market changes in the U.K., rather than on filling in the details.

A further methodological point should briefly be added. The concentration on the macro-analytical level does not mean an abstracted holism, where everything is regarded as being related to everything else only in the context of some organising principle (capitalism, the Idea, God, etc.). On the contrary, attention is concentrated on how the whole is *structured* in real life, and, to make matters more complicated, such structuration needs to be examined on a variety of scales. Marx, when discussing the method of Political Economy in *Grundrisse* (Marx 1973 pp.100-108) makes a parallel point.

7. Also Thomas (1937, 1938), Makower, Marschak and Robinson (1938, 1939, 1940) and Daniels (1940). These studies, though undoubtedly

important, are criticised in chapter 4 for not indicating that the strength of migration flow depends not merely on differences in unemployment, but also on the pace of employment change.

8. These findings have often been replicated. Shryock and Siegel (1973 pp.616-672), in illustrating ways of estimating and examining internal migration, show that levels of net migration peaked around ages 21-29 in France (1950-52), approximately 15-25 in Bombay males (1941-51) (based on calculations using a survival rate method), approximately 15-24 in Korean males (1930-35), approximately 23-27 in Quebec females (1951-56), etc. Apart from retirement migration, which can be *locally* important, migratory shifts in the geographical composition of population are dominated, in Western and non-Western economies, by young adults, with considerable implications for the geographical age structure of the population.

9. For example Edwards and Williams (1958), Woodham-Smith (1962). See also chapter 2 above, note 114, for further references. It would hardly be possible to write an adequate history of 19th century Ireland without giving a high degree of centrality to the Famine.

10. Vaughan and Fitzpatrick (1978 pp.5-15), Fitzpatrick (1984). Miller (1985) provides a very detailed history of Irish emigration to North America, before, during and after the Famine, concentrating on the experiences of the migrants, while the essays in Drudy (1985 ed.) cover various aspects of the impact of Irish migration on America. For an earlier account of Irish famine emigration see Carrothers (1929 pp.186-206). The exceptional extent of the Irish tragedy tends to overshadow the point that various other agricultural areas, most particularly the Highlands of Scotland, were also extremely depressed, and zones of substantial emigration (Carrothers 1929 pp.171-185).

11. See also Weber (1899), who provided international comparisons of 19th century urbanisation, with widespread use of statistical material.

12. As noted, for example, by Cairncross (1953 pp.74-79), who also pointed to the very important role played by "America and the Colonies" in the migration equation.

13. For example, in the four main urban centres of Norfolk and Suffolk in 1801, (Norwich, Yarmouth, Ipswich and King's Lynn) the population increased from a total of 74,000 in 1801 to 240,000 in 1901, a growth rate of 1.2% per annum. This rate of population growth, though fast by 20th century standards, is slow for a town by 19th century standards, when population in England and Wales as a whole (*including* slow-growing rural areas) grew by 1.3% per annum. In contrast, the population of Lancashire, the most urbanised of the Northern counties, increased from 673,000 in 1801 to 4,373,000 in 1901, an increase of 1.9% per annum. (Figures based on Mitchell and Deane 1962).

14. Lee (1984) has emphasised the importance of the growth of the service sector in 19th century London, a point which is developed in chapter 9 below. It needs to be stressed, though, that then, as now, the structure of service sector employment was highly polarised, with both the growth of "middle-class" jobs, emphasised by Rubinstein (1977) and Lee (1984), and low status marginal jobs, as emphasised by Jones (1971), being characteristic.

15. Much Victorian opinion suggested that there was actual depopulation of rural areas in England. Ogle (1889) suggested, however, the stationarity of rural population, with net outward migration tending to balance the natural increase in population. This view appears to be

basically correct, and raises an extremely important question. It is clear that the chronic labour surplus in the rural areas, the cause of so much 19th century migration, arose not primarily from any contraction in employment, but rather from demographic factors; there was no mechanism by which effective demand in rural areas could match the increase in the size of the workforce, so unemployment of what might be called the "Malthusian type" resulted (reference here being made primarily to his *Principles of Political Economy*, Malthus 1836, rather than to the more famous *Essay on Population*, Malthus 1798). Employment expanded rapidly in the towns, but not sufficiently to absorb the whole of the natural increase of population of both town and country. A tendency towards a chronic labour force surplus would thus have resulted, relieved by rapid industrial expansion on the upswing of the business cycle, and more importantly, by emigration to the "white periphery" (the USA, Australia, etc.). It is suggested that the central focus on treatment of 19th century labour markets, and of the geography of unemployment, should be on the distribution and redistribution of the rural labour surplus, and that cyclical downturns in the *industrial* sector, which have been given exaggerated prominence by Southall (1983, 1986),are only secondary features in setting unemployment levels. This case is argued further in chapter 9 below.

16. All counties outside London in Southern England; calculation based on Mitchell and Deane (1962 pp.20-23).

17. Calculated from Mitchell and Deane (1962 p.19).

18. Figures calculated from Lee (1979). See also Hobsbawm (1975) and Marshall (1987 pp.123, 147-149).

19. See chapter 9.6 below. In the late 19th and early 20th century there was an extraordinary situation in which despite falling productivity coal production continued to expand rapidly on a wave of rising prices in export markets. This represented a "bubble" rather than a stable expansion; as soon as coal prices started falling after the First World War the economies of the exporting coalfields collapsed.

20. Much attention has been given (e.g. Prebble 1963 and the more detailed work by Richards 1982) to the question of the Highland clearances. Much of the problem can be expressed in the old phrase "sheep eats man". The increased profitability of sheep farming, an activity which required large expanses of land, and which is inhibited by the presence of villages and small-scale farming, encouraged landowners to clear large tracts of land (Gray 1957 pp.86-104). A parallel process had taken place across much of central England in the late fifteenth century, as wool prices rose relative to grain prices, leading to the clearance of large numbers of "deserted" villages (Beresford 1954); the far higher degree of spatial isolation in Highland Scotland meant that the population shift was oriented far more strongly to long-distance migration (maybe to Glasgow; maybe abroad) in late 18th and early 19th century Scotland than in late 15th century England.

While the Highland clearances greatly reduced the significance of the small-scale farmer in the Scottish rural economy, this did not absolve the Highlands from the effects of the 1840s potato famine (Gray 1957 pp.181-90, 239-41; Flinn 1977), although the local fabric withstood the shock rather better than in Ireland. Several Highland counties (e.g. Argyllshire, Inverness-shire, Perthshire) showed fairly steady increases in population up to 1841, and then depopulation, although these were generally the Highland counties closest to the main centres of urban expansion; more remote counties, such as Caithness-shire, Ross and Cromarty, and Sutherlandshire, from which migration to urban areas required greater effort, preserved their population levels more

successfully, but did not expand them (see Mitchell and Deane 1962 pp.21-23).

Scotland's 19th century rural problems meant that Scotland's share in the total population of Britain declined steadily in the 19th century, despite the rapid expansion of Clydeside.

21. Slaven (1975) charts the growth and the start of the relative decline of West Central Scotland, while Board of Trade (1932e) examines the particularly intense problems faced during the inter-war slump. See also Lever and Moore (1986) for a discussion of more recent problems. In later chapters the point is developed that the economic decline of Strathclyde represents not so much the decline of a city or conurbation, but rather the decline of a heavily urbanised *region* within a region. This of course does not invalidate the point that Scotland's declining share of Britain's population reflects urban decline.

22. Lee (1979 pp.3-4); Buxton and MacKay (1977 pp.9-10).

23. See especially Lee (1984), also Rubinstein (1977, 1981), Ingham (1984).

24. Buxton and MacKay (1977 pp.47-76) provide a more detailed account of the scope of coverage, and strengths and weaknesses, of this source. Summaries of Census of Employment data, at the regional level and the national level, are published in the *Gazette*; more detailed information, at the county or travel-to-work area level, is available on the National Online Manpower Information System (NOMIS), held at the Universities of Durham and Newcastle on behalf of the official Manpower Services Commission. See chapters 6 and 8 below.

25. See the more detailed discussion in chapter 4.4 below, also chapter 5.2(i).

26. See for example Chisholm (1976) and Keeble (1977) (disputed by Hudson 1978). Gillespie and Owen (1981) attempted to demonstrate that the process of convergence was still continuing during the slump, although this interpretation was based on a highly questionable reading of the unemployment figures, and was challenged by Crouch (1982a). Fothergill and Gudgin (1979b, 1982), in analyses based primarily on the 1970s, argued that it was becoming almost meaningless to examine spatial differentiation in regional terms, or in North-South terms, and that explanation should be focused at the urban-rural scale. The year by year analyses of the 1970s in chapter 6 below cast doubt as to whether it is appropriate to try and reduce the extremely complicated pattern of response to recessions and upswings to the operation of a few assumedly dominant spatial tendencies, such as "convergence" and the "urban-rural shift."

27. The trend towards diversification of employment structure has been noted by, for example, Rawstron (1964). As illustrations, in 1921 mining and quarrying accounted for 32.2% of County Durham's total employment, compared with 7.7% in 1971. In Lancashire, textiles, clothing and mining and quarrying accounted for 34.1% of total employment in 1921, compared with 9.1% in 1971. In the West Riding of Yorkshire, these same sectors accounted for 37.2% of total employment in 1921 and 15.8% in 1971 (all figures based on Lee 1979). Statistically, this represents considerable diversification of the employment structure, but it should not be forgotten that this resulted as much from losses of jobs in the "older" sectors as from the growth of jobs in "newer" sectors. Diversification of the employment structure is of itself no virtue; it often represents no more than a statistical side-effect of recession. The growth of new employment outside the traditional sectors is a more important criterion; Keeble (1976) shows that within sectors there has

been a fairly strong recent tendency for growth to be spatially more dispersed than in earlier eras.

28. This example is further discussed in chapters 6 and 8 below.

29. As illustrations, using the same counties and sources as in note 27, employment in (1968) SIC orders 25, 26 and 27 (professional and scientific services, chiefly health and education; local government services; central government services) increased in Durham from 14.2% in 1921 to 24.0% in 1971. In Lancashire the increase was from 14.7% in 1921 to 25.0% in 1971. In the West Riding the increase was from 14.1% to 24.8%. In each case, this represents approximately a doubling of employment in the public services, and the indirect replacement of about half the jobs lost in the traditional industrial sectors. Furthermore employment levels in these sectors have been relatively insulated from decline during years of industrial recession, for reasons to be discussed in chapter 6, and these sectors have thus been important stabilisers in depressed economies.

30. For recent discussions on the origins of the unemployment insurance scheme, see Hay (1975), Gilbert (1966), Harris (1972), Brown (1971). Beveridge had an important role in the early development of this scheme, as well as in the development of the post-1945 welfare state, and his analysis of unemployment (Beveridge 1909) is quoted elsewhere in other contexts.

31. Thus contemporary reports on depressed areas (Board of Trade 1932 a-e, Ministry of Labour 1934) concentrated on Tyneside and Durham and tended to ignore Yorkshire. See also Fogarty (1945) where reference is made (p.3) to a distinction between "counties where unemployment was distinctly above the national average - Lancashire, Cheshire, the West Riding and Cornwall" and "the severely depressed areas, Wales, Cumberland, and the North-east Coast." Later writers also make this distinction.

32. The Standard Industrial Classification was introduced in 1948 and revised in 1958, 1968 and 1980 (see Buxton and MacKay 1977 pp.112-126, Central Statistical Office 1981).

33. See Buxton and MacKay (1977 pp.167-182); chapters 5 and 6 below.

34. See *Gazette*, September 1984, Occasional Supplement, number 3, for details of current travel-to-work areas, and for the methodology used in deriving these areas. The basic criteria are that the number of people who both live and work in a TTWA should be at least 75% of both the total number of people who live in the area, and the total number of people who work in the area, and that the working population of the area should number at least 3,500. A 70% self-containment ratio is acceptable if there are over 20,000 workers living in the area. Data for place of residence and place of work are taken from the 1981 Census.

35. Modern shift-share analysis appears to date from Perloff et al (1960); Richardson (1978 p.206) cites various uses of the technique up to the mid-1970s, but notes that the basic technique had been used as early as 1943 (National Economic Planning Board, 1943). Use of the technique can be traced back still further, to Champernowne's analysis of employment and unemployment in Britain between 1929 and 1936 (Champernowne 1937-8). Champernowne noted that "more than the whole of the relative decline of the Outer Regions between June 1929 and June 1936 can be explained by the fact that the six expanding industries are situated mainly in Inner Britain whereas the three declining industries are situated mainly in the Outer Regions" (Champernowne 1937-8 p.97), the calculation being made on what is recognisable as a shift-share basis. In modern terminology, the

peripheral regions suffered from a strong negative structural shift, while differential shifts were broadly neutral. See also chapter 4 below. The analysis of Scottish industries in the inter-war years by Leser and Silvey (1950) is also recognisably an early shift-share analysis.

The basic technique has often been used, often been criticised (e.g. Richardson 1978), and been defended in Fothergill and Gudgin (1979a). Provided the technique is not misused, it provides an important exploratory and explanatory tool.

36. See for example Fothergill and Gudgin (1979b, 1982), also Lever (1981). In the present writer's view, to go through all the stages of calculation needed for a shift-share analysis simply to produce results aggregated across all sectors (or all industrial sectors, or all service sectors), is a highly inefficient use of information. Chapter 8 is an attempt to show how much increased depth of analysis can be provided if the information used in generating a shift-share analysis is used more efficiently, and if attention is given to individual scores as well as to aggregates.

37. e.g. Townsend (1982), Lloyd and Shutt (1985), Townsend and Peck (1985).

38. See for example Fothergill and Gudgin (1982, 1985).

39. See for example Beveridge (1944 pp.42, 48) for graphs of the employment rate from the 1850s to the late 1930s. Later in the same work Beveridge (1944 pp.279-280) provides a series for the employment rate, as a percentage of trend, and industrial activity as a percentage of trend, and shows a strong cyclical concordance. Illustrations of this type have become standard, especially in work on the late 19th century; for example Cottrell (1975 pp.48-49).

The interpretation of unemployment in this thesis relies very much on a "capacity utilisation of workforce" argument; if there is only work for 90% of the workforce then there will be 10% unemployment. In the bulk of the discussion in later chapters this interpretation is implicit, but close to the surface. The capacity of the workforce at any given time is set by recent demographic history. The capacity of the capital base of the economy is set by past investment decisions, in response to expectations of economic performance. Under favourable economic conditions, capacity expansion in the capital goods sector is closely aligned to demographic expansion, so that increases in population can readily be absorbed into employment. There will still be cyclical lapses, however, so that machinery may for a time be working below capacity with unemployment resulting. In any cyclical upswing *at full employment*, idle capacity is brought back into use and, in conjunction with new investment, allows a return to full employment.

When the level of capacity in the capital goods sector falls substantially below the level required to employ the workforce at full capacity, a more persistent form of unemployment arises. Such a situation can come about if (a) there has been an unusually fast rate of increase in the size of the workforce, (b) if investment has been slow over a period of years, (c) if capacity has been scrapped on a large scale, rather than simply shelved, during a deep recession, or (d) some combination of the three. If the rate of growth of capacity in the capital goods sector has been significantly retarded, a return to full capacity here will *not* be sufficient to return the labour market to full capacity and to create full employment. In such circumstances, unemployment exists not so much because the economy is at less than full capacity (though of course sub-capacity working will be in operation during any cyclical recession, irrespective of whether the cyclical peak

is one of full employment), but rather because the total capacity of the economy is itself too low. To set things aright, an investment boom is required.

Mass unemployment arises not out of short-term below capacity working in the economy, but rather from *long-term* shortage of capacity; to understand unemployment one needs to examine not whether machinery is working at 85% or 95% capacity, but rather whether the total level of potential production in the economy is sufficient to maintain full employment. The concept of "output gap" is important here; unemployment is interpreted in terms of a difference between the actual level of GDP and the level which would exist had Harrod natural rate growth persisted from a situation of full employment. Black (1979 p.15) graphs the output gap in the UK from the late 1950s to the late 1970s, using a 3% growth path as the norm, and shows clearly the increasing output gap of the 1970s.

"Equilibrium at less than full employment", the danger to which Keynes (1936) drew close attention, is thus seen in terms of a situation in which the level of employment implied by full capacity operation of the existing capital stock is less than the level of employment which would fully employ the labour force. This "equilibrium" persists so long as there is no incentive to invest and to increase the capital stock to the point at which full employment is reached.

In purely macro-economic terms the employment rate is the critical variable, and the unemployment rate merely the residual. In studying local labour markets, however, the unemployment rate is a more critical variable.

40. See for example the review in Treble (1979). There were numerous investigations on the interrelated subjects of unemployment, irregular work and poverty, the most famous being those of Both on London (*Life and Labour of the People in London*, with a 17 volume edition published in 1902-3, from fieldwork dating from the 1880s onwards) and Rowntree and Lasker (1911) on York. Very little work was done on the *geography* of poverty and unemployment (as opposed to the structure of poverty in local areas), but work by Bowley and Burnett-Hurst (1915) (cited by Treble 1979) shows relative freedom from poverty in Stanley, a Durham coal mining town, some poverty in Warrington, a Northern industrial town, and considerable povery in the Southern towns of Northampton and Reading. While there are obvious difficulties of inference in linking poverty and unemployment, such findings fit in better with a "depressed South" picture than with a "depressed North" picture. In many respects, however, it was *rural* poverty, not urban poverty, which dominated 19th century Britain.

41. A more detailed criticism of Southall's work appears in chapter 9 below, see also note [44] to chapter 1. Southall relies heavily on the trade union unemployment rate as an accurate representation of spatial differences in the unemployment rates and cites Garside (1980) to support this assumption (Southall 1983 p.239). In fact there are very severe biases in the trade union statistics for unemployment which make them wholly unsuitable for studying spatial differences in unemployment. Garside, far from advocating the uncritical use of trade union unemployment statistics, actually takes great pains to point out the deficiencies of these statistics, pointing out that both contemporaries and later writers recognised that the trade union statistics were unrepresentative, and tended to exaggerate fluctuations in the level of employment, as well as omitting coverage of those on the fringes of the labour market. Nowhere does Garside provide support for the extremely dubious contention that trade union unemployment statistics allow for comparison between the state of demand for labour in different localities. One of the dominant features of the 19th century labour market was the chronic demographic

surplus in the rural areas; Southall's preferred sole source of information can say nothing about this aspect of the labour market; it is noticeable, for example, that Ireland is shown as an area of moderate unemployment by Southall, and would probably have been similarly classified had trade union unemployment figures existed at the time of the Great Famine.

Any intelligent treatment of labour market data, whether on employment or unemployment, requires understanding of what can, and cannot, be legitimately inferred from various data sources. It is for this reason that a separate chapter is required to discuss the general outlines of British labour market statistics, and the uses which can be made of such statistics. Various pitfalls need to be avoided, not least the one in which a biased data source (whose results are not corroborated by any other data sources) is treated as unbiased.

42. In June 1931, for example, registered unemployment amongst insured persons stood at 2,706,800 (*Historical Abstract*, Table 103) whereas total registered unemployment stood at 2,735,900 (*Historical Abstract*, Table 162; a small addition needs to be made to cover unemployment under the special scheme for banking and insurance). Two factors were at work to make this gap small; firstly the greater propensity to recession in insured employment, when compared with uninsured employment, and secondly the possibility that those directly affected by a shortfall in employment in the uninsured sectors would shift to the insured sectors, and displace labour there.

43. The "rule of thumb" calculation (reducing the official figures by a quarter) gives an average unemployment rate for 1932 of 16.6%, compared with the 17.0% estimate given by Feinstein (1972) (Table 3.11 here), and reproduced by, for example, Middleton (1985a p.11). Booth and Glyn (1975 p.613) suggest that the general rate of unemployment was overstated by about one fifth of the official rate, but cite an earlier estimate by Clark (1937 pp.31-32), made without the benefit of 1948 figures for comparison, of an overstatement of about one third of the official rate. Clark's figures indicate an unemployment rate in 1931 of 13.4%; unemployment in 1932 would be very slightly higher.

It seems highly probable that the degree of overstatement of unemployment in the inter-war years, both during and outside the slump, lies between one third and one fifth of the official rate. For almost all practical purposes, it is simplest to assume the degree of overstatement is a quarter.

Finally, two curiosities should be noted. Casson (1983 p.33) suggests that unemployment in Britain averaged about 15% between 1930 and 1933, implying a reduction of about one third from the official figures. This scaling is evidently not carried out at the local level, however, as Casson notes that some areas of the North East and South Wales had unemployment rates over 50%, rather too high a cut-off figure to be meaningful. Benjamin and Kochin (1979) go through a rather complex curve-fitting rigmarole to "prove" that had the ratio of benefits to wages ratio stood at its 1913 level, the British unemployment rate would have stood at only 16% rather than 23%. It seems however that when the bias in the coverage of the Unemployment Insurance Scheme is taken into account, unemployment genuinely did stand at around 16% or 17%. Maybe the benefits to wages ratio is an irrelevance in setting the level of unemployment.

44. The primary reason for the unusually high degree of underestimation of female unemployment in the UK is that an unemployed woman in a family unit of employed male breadwinner/unemployed female is eligible for unemployment benefit in relatively few cases. This applies even if such a woman has been working and is actively seeking work. The discrepancies

between male and female unemployment rates are thus very slight amongst the youngest age groups, when few are married, but diverge with increasing age, as the following table shows.

Age	Male unemployment (%)	Female unemployment (%)	Ratio male:female
18	33.5	33.3	1.01
18-19	26.5	21.3	1.24
20-24	20.7	15.1	1.37
25-34	13.8	9.0	1.54
35-44	11.3	4.7	2.40
45-54	10.5	4.7	2.23
55-59	12.7	5.5	2.31

(Rates for July 1982; *Gazette*, October 1982 p.S37).

It should perhaps be noted that there is no real justification for the supposition that the female workforce has been harder hit than the male workforce by the slump. Table 3.15 shows that, on the contrary, men have lost jobs far more quickly than women have, throughout the slump, and that female employment started to increase again much earlier than male employment. Neither is there any statistical evidence to support Coyle's assertion that "the *rate* at which women are becoming unemployed is twice as fast as it is for men" (Coyle 1984 p.4; emphasis in original), and indeed Coyle herself provides no evidence.

45. An argument developed, if at times overstated, in the papers in Irvine, Miles and Evans (1979).

46. See especially Miles and Irvine (1979), though as far as labour market statistics are concerned, recent events have unfortunately falsified the suggestion (p.126) that "it is in general wrong to see statistics as being produced by the state (at least in liberal capitalist economies) as a deliberate attempt to create deception and mystification."

As far as current official statistics are concerned, there is no reason to believe that there is any systematic loss of quality in most statistical series. Any series concerning such matters as unemployment, poverty, etc., must be treated with considerable caution, though. It is for example a relatively simple matter for an artificial downward trend to be given to unemployment fugures simply by tightening the conditions under which unemployment benefit may be received, and precisely such a tightening up has taken place in the months leading up to the 1987 General Election.

47. This estimate is taken from *Charter for Jobs*, May 1987, which takes into account the "discouraged worker" effect of the tightening up in 1986 of tests for availability of work. The *Charter for Jobs* estimate shows unemployment as remaining stable in 1986-87, rather than declining, the impression given by official figures. The apparent sharp falls in unemployment in late 1987 probably represent in part a genuine reduction in unemployment, and in part changes in administrative practise.

48. It is hoped to tackle this question in much greater depth in the not too distant future. All demographers are familiar, of course, with the transitions from a high mortality/high nuptiality society, to a low mortality/high nuptiality sociaty, to a low mortality/low nuptiality society, as industrialisation and economic development proceed. Population explosions occur when the second stage is reached.

Surprisingly, however, relatively little attention is given to the economic component of fluctuations in the birth rate within an advanced industrialised society, in which a wide range of options to control fertility is available. From an economic perspective it is fairly obvious, though not often stated, that birth rates and marriage rates will tend to be high when conditions are good, but low when conditions are bad. In studies of economic history, a common method for finding out whether a local or regional economy was prosperous or depressed at a particular time is to study parish records for births, marriages and deaths (for a major review see Wrigley and Schofield 1981). Beveridge (1910 pp.42-44) similarly uses the marriage rate as an indicator of cyclical fluctuations in the economy. Yet this possibility has largely been lost sight of in studies of the demography of Britain in the 20th century. The methods of population projection made by the Office of Population Censuses and Surveys (in *Population Projections*, various) are particularly open to criticism, being based on the notion that a *purely* demographic trend, independent of all economic influences, can be identified and projected, and also that the cyclical patterns of population movements can be reduced to *purely* demographic terms.

The empirical record in the UK (see graphs in Werner 1987) is that the number of births was extremely high just after the First World War, in response to the delays in family formation occasioned by the war, then very low during the 1920s and 1930s as the depressed economic conditions made raising families economically hazardous. There were worries (e.g. Charles 1935, Hubback 1947; Reddaway 1939 provides a more cautious assessment) that Britain had entered a phase of long-term population decline. The birth rate picked up during the Second World War as economic conditions stabilised (!), and there was another baby boom immediately following the war. Then the birth rate fell to more normal levels, but gradually increased during the 1950s and early 1960s. During the "boom of affluence" (chapter 2 above) the birth rate boomed, but from the mid-1960s fell sharply again, with low birth rates prevailing during the 1970s. *These fluctuations closely mirror economic fluctuations*. Furthermore the timing of baby booms and baby "recessions" does not indicate any sort of echo effect in which a large generation will produce another large generation, and a small generation another small generation. Had the 1960s baby boom been an echo of the post-1945 baby boom, the peak in the birth rate would have been in the late 1960s, and fairly sharp, rather than in the early 1960s. Other examples can readily be cited.

Cycles in the birth rate are thus seen as *economic* cycles, with changes in the age specific fertility rates, occasioned by the rise and fall of the economy, being seen as critical. A closer examination (and to the present author's knowledge this approach has not been tried in the British context) would require detailed mapping of year to year changes in the fertility rates of women of different ages (along with whatever information can be gained about the age of the fathers) and to see at which strategic points upturns and downturns in the economic climate are most likely to affect fertility. There is much empirical work that needs to be done before the situation is clarified.

49. There are various routes by which this could happen. After 1982, a person appears in the unemployment statistics if he or she is claiming and receiving benefit by virtue of being unemployed. Those who do not claim benefit, or are ineligible for benefit (through, for example, receiving sickness benefit instead, being too old, being administratively regarded as "voluntarily" unemployed, etc.) do not appear in the figures. In 1982, many who were not in work and who were seeking work, though not eligible for benefit, were enumerated as unemployed, although this implies that many others were *not* so enumerated, in that though unemployed there was no financial incentive for them to *register* as unemployed.

50. Unemployment amongst married women in particular is heavily understated (see note 44 above), and as the number of jobs for women recovered from 1983 many of these women returned to the active labour market, often after having taken time out for child-rearing.

51. It was thought for a while that this increase in female employment was predominantly an increase in part-time employment, with full-time employment continuing to fall. The results of the 1984 Census of Employment, however, showed that the drift from female full-time to female part-time employment was much weaker than had previously been suggested by official estimates (*Gazette* 1987 p.34). Reasons for this major statistical discrepancy, in which female part-time employment was overestimated by 300,000, are not given.

52. Clear signs of an impending post-slump recession are emerging as this chapter is sent for typing, and too late to be incorporated in the analysis of chapter 2. On 19th October 1987, London share prices fell by over a tenth, following a similarly sharp fall in New York late the previous week. The *Economist* dated 17-23 October gave no premonition of impending collapse. A financial crisis after about five years of post-slump recovery is to be regarded as the norm rather than the exception; the examples of 1847 and 1890 come clearly to mind. Rising financial markets are very much in the interests of the capitalist classes, as such markets increase capitalist income. There is a tendency therefore for a self-fulfilling bullishness to develop in financial markets; for as long as financial assets increase in value beyond the extent justified by the legitimate expansion of the economy, a sentiment of money-spinning euphoria is generated. The stock market *overexpands*, because it is in the interests of capitalists that it should. Then at some later day hard reality sets in, and, to use a metaphor from an early 18th century crisis, the bubble bursts. The prolonged period of smooth growth which normally follows a slump provides ample opportunity for a bubble to develop.

The immediate welfare effects of a stock market crash are relatively small; there will be relatively few who can no longer afford the basics of life simply because of falling share prices. A more pressing concern is whether the stock market crash will lead to severe industrial recession and a big increase in unemployment. In the current climate of extreme uncertainty (this note is being written the day after the event being described; a slightly later perspective will be introduced in chapter 10 below), it is hazardous to attempt to forsee the future. The author's judgement is that in employment terms the severity of recession will be no worse than moderate, and that smooth growth will resume after the recession. It might well be the case that such later growth will tend to exert a significant downward pressure on unemployment, unlike the 1982-87 expansion, as wariness of the "financial" economy turns attention again to the "real" economy of production. Unfortunately, it looks as though the fall in unemployment witnessed through much of 1987, as the stock market bubble approached its maximum extent, is unlikely to continue for very long. It would perhaps be over-pessimistic to suggest that in the forthcoming recession registered unemployment will approach 4,000,000, and over-optimistic to suggest that, for a long time yet, it will approach 2,000,000. For just a brief period in mid-1987 it appeared that if a stock market crash could be avoided unemployment could potentially be reduced sharply; some of the comments in chapter 1 reflect this perspective. The alchemy to avoid the crash had not yet been developed, and the crash came when the USA, whose domestic economic expansion had largely been funded by money borrowed from abroad (notably Japan), started to show signs of economic instability, and also signs of being drawn excessively into Middle East war, a combination hardly likely to increase foreign confidence.

It looks as though UK unemployment will be at around 3,000,000 for a long time yet, though much depends on Government policies.

53. If, for example, placement on various short-term training schemes is regarded as little more than concealed unemployment, the "real" unemployment level at the trough of the slump would be closer to 5,000,000 than 4,000,000. This type of interpretation has been used by, for example, the TUC.

54. As noted, for example, in the oral histories compiled by Gray (1985).

55. For example, Chisholm (1976), Keeble (1977) and the exchanges which followed (Hudson 1978a, b; Keeble 1978a, b), Gillespie and Owen (1981) and subsequent exchanges (Crouch 1982a, b; Gillespie and Owen 1982 a, b). The "convergence" debate has now been replaced by the "North-South controversy" (e.g. Armstrong and Riley 1987) as North-South disparities in prosperity have become more sharply defined. Gillespie and Owen (1981) is perhaps the only academic paper until very recently to suggest for any period after 1979 that regional convergence was still dominant.

The question is posed in a slightly different way in subsequent chapters below. Instead of fairly generalised questions asked, and fairly generalised answers given, about whether particular periods were dominated by "convergence" or "divergence", the attempt is made to look at the detailed geography of employment change and unemployment in single year periods, in order to expose the detailed structures, rather than simply provide a single sentence summary.

56. See for example Beveridge (1944 p.73), Keeble (1977 p.4, 1978a p.124), Gillespie and Owen (1981), Northern Region Strategy Team (1976), Friend and Metcalf (1982 p.88). This list is far from exhaustive, and it is not the author's intention to produce a "rogue's gallery", but the method followed is unsound, as shown in the text. Furthermore, Frost and Spence (1983) are incorrect in assuming that measurements of unemployment change using percentage changes in unemployment (based on a "relativity" conception of local unemployment differences) and measurements using percentage point changes (based on an "absolute difference" conception) produce broadly similar results except at the extremes of the distribution. On the contrary, the percentage change method creates false extremes and suppresses true extremes, a point emphasised in Crouch (1982a). Sant (1978) noticed the dangers of misinterpretation when unemployment rates are converted into relativities, but unfortunately attributed the tendency for regional unemployment relativities to converge during a recession not to a very strong bias in the statistical measure used, but rather to unspecified economic "buffers".

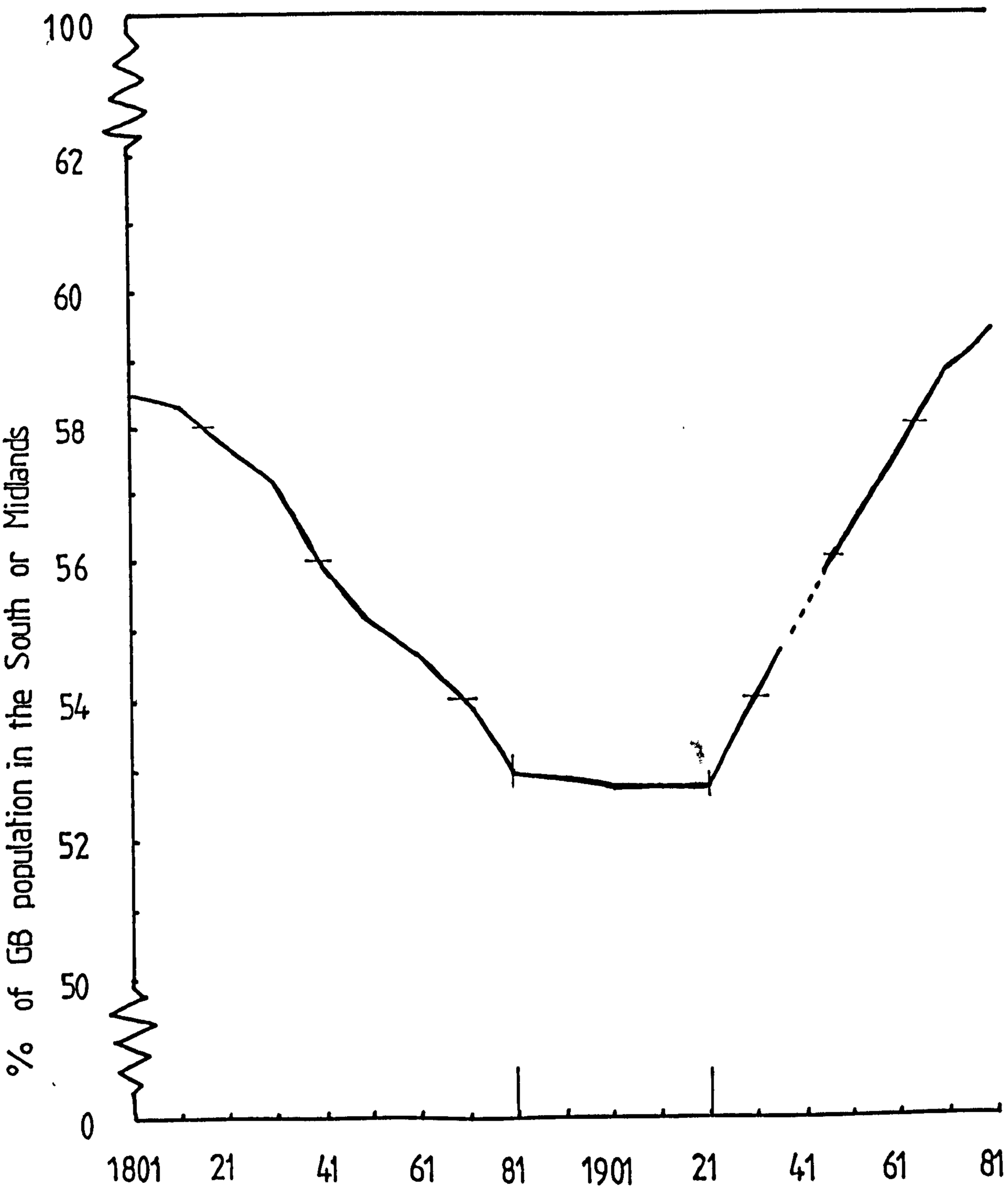
In 1981 the annual *Regional Trends* introduced a series showing regional unemployment relativities, but in the 1983 edition made a welcome switch to presenting rather more meaningful statistics on percentage point differences in unemployment.

As these notes go for typing, a work by Lever (1987) appears, using the discredited "relativities" method to assert that there was substantial regional convergence in unemployment rates during the early 1980s, followed by minimal divergence. It is amazing that such a method is still used. One wonders whether Lever is fully aware of economic developments in the early 1980s, and of the collapse of industrial employment in areas which already had high unemployment, such as Strathclyde, North East England, Merseyside and South Wales. Certainly anyone with genuine awareness of such developments would be expected to react with suspicion to any measurement which suggested substantial *convergence* of unemployment rates. It is of interest to note that Lever cites Gillespie and Owen (1981), but not the reply by Crouch (1982a).

57. There are of course many other textbooks on geographical statistics, but it appears that none confronts this problem adequately. Similarly, textbooks on general statistics tend not to examine the problems created by the spatial grouping of the basic data. An apology is made, of course, if an important discussion has been inadvertently overlooked.

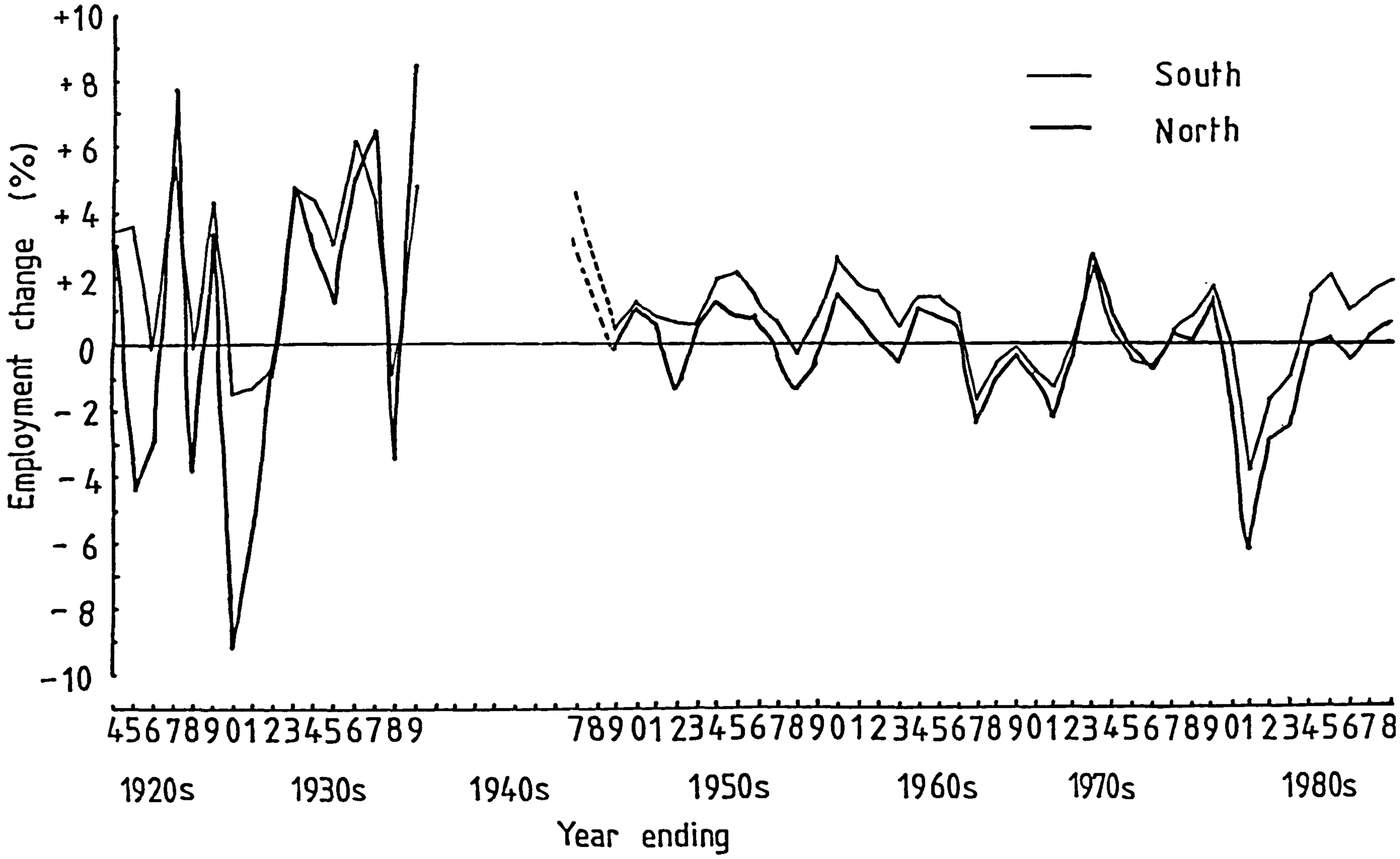
58. Schutz (1951), Kuznets (1963), Gaile (1984 p.229).

Fig 3.1 The North-South Distribution of Population in Great Britain, 1801-1981



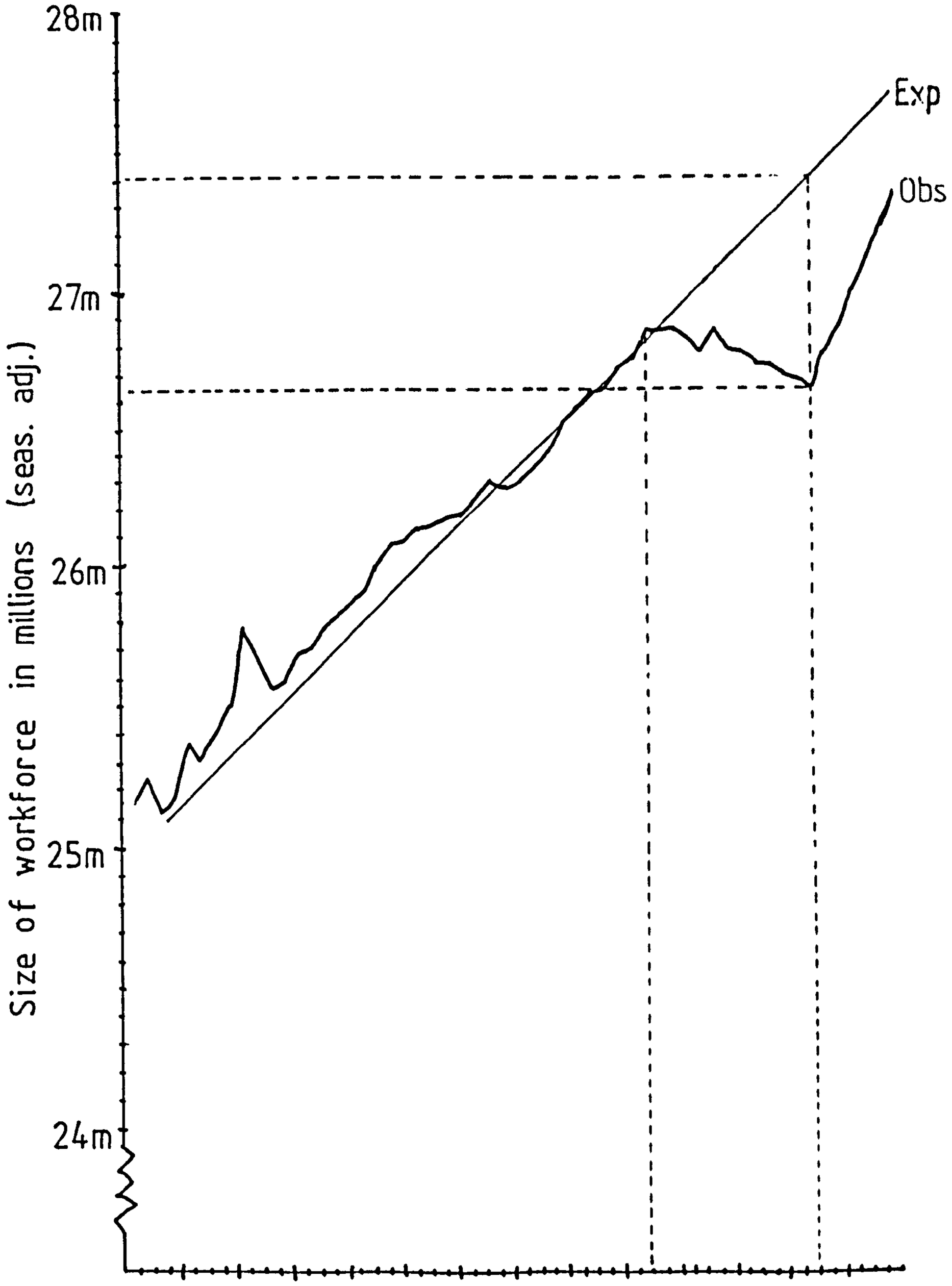
Source: Table 3.4

Fig 3.2 Annual Rates of Employment Change, North and South, 1923-1988



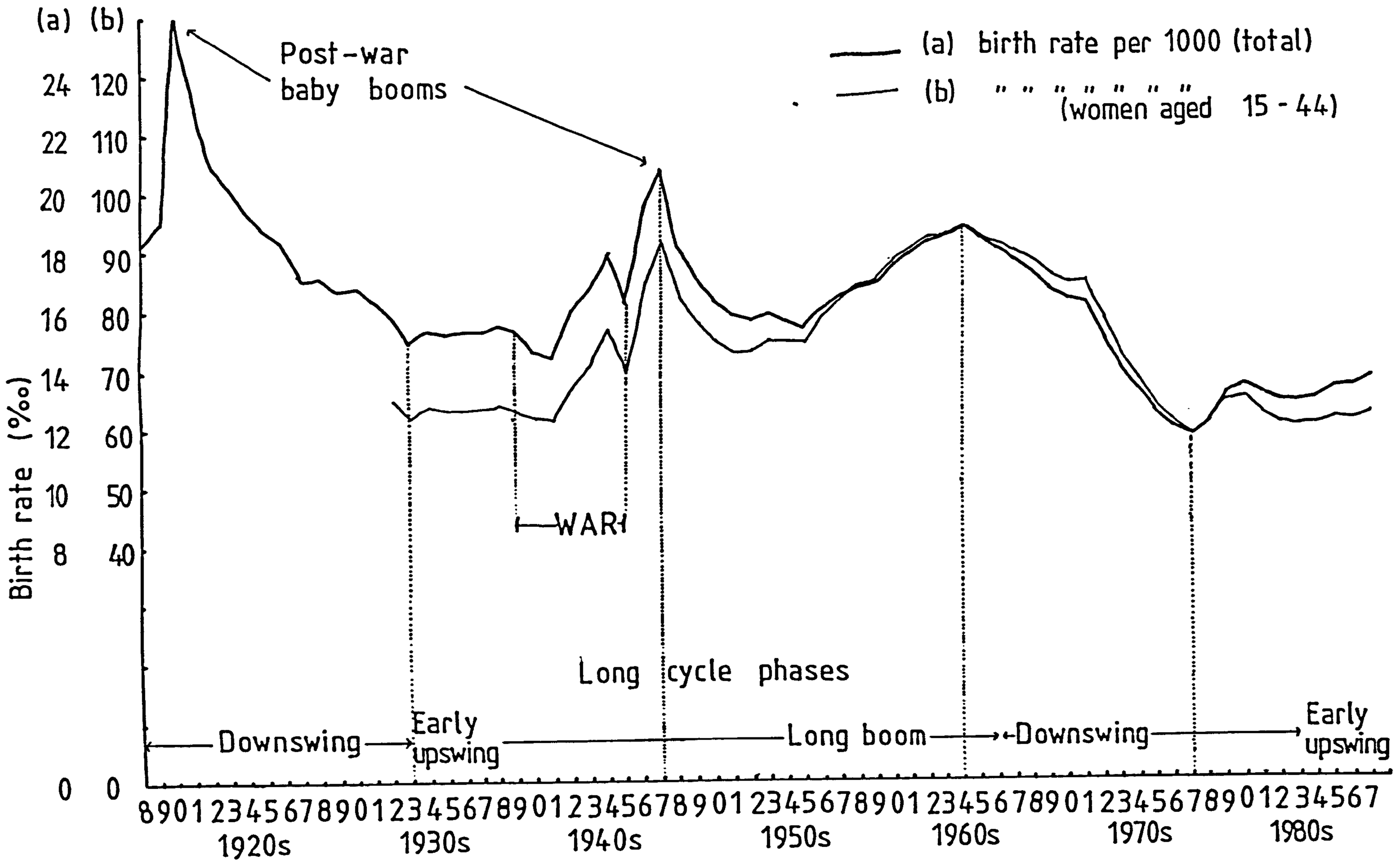
Source: Table A.6

Fig 3.3 The Size of the Workforce in the UK, 1970-1984



Source: Table 3.13. The "expected" line gives the (approximate) size of the workforce, employed plus unemployed, resulting from demographic change. Major divergences between the observed and expected lines indicate changes in the level of concealed unemployment.

Fig 3.4 The UK Birth Rate, 1918-1987



Source: *Annual Abstract of Statistics* (various)

4 The Economic Geography of Britain Between the Wars

4.1 Introduction; the Inter-War Period in Context

Discussion now turns to the geography of economic change in Britain between the two World Wars. This period contained the whole of a long cycle downswing (1918-1932), and also the early stages of the following upswing (1932-1939). Within the downswing, structural degeneration, in the form of permanent job loss in major industries, was intense and also highly regionally differentiated. During these years the North became, for the first time since the Industrial Revolution, *unmistakably* economically subordinate to the South, both in capital markets and in labour markets. Ever since this highly critical period, the circuit of superior economic dynamism in the South and slow growth in the North has remained unbroken, despite various attempts to regenerate the economies of the periphery through encouraging industrial migration by means of regional economic policy.[1]

Analysis of the period from 1921 to 1932 is thus fundamental in any attempt to answer the basic question of why Southern England has been consistently more prosperous than Northern England, Scotland and Wales throughout the living memory of the vast majority of the population. The industrial crises of the 1920s and early 1930s had a very substantial depressive effect on the coalfield industrial areas, which were centres of particularly rapid urbanisation during the 19th century, but left the South almost unscathed. In a sense, the peripheral regions never really recovered from the shocks of the 1920s and early 1930s, and have been regions of slow growth ever since.

Pointing to the large scale job losses during the downswing in coal, cotton and wool, and to the intense but more localised decline in employment in such industries as shipbuilding and steel, is not however a complete explanation of the regional problem. There are two other basic questions which need to be asked first. One of these questions is that of how it came about that the North was so much more vulnerable to economic crises than the South. The other is why, even several decades *after* a major series of job losses, employment has been consistently growing faster in the South than in the North, rather than the rate of employment growth being regionally balanced.

The first of these questions needs to be approached through an analysis of the geography of Britain's economic development prior to 1914, an analysis which is carried out in chapter 9 below. It is argued that in the period of high imperialism, from the 1880s to the First World War, the London economy, based on finance and high order administration,

was becoming increasingly dominant over the Northern economy, based on industry, and that as a result of this balance of forces the coalfield industrial economies were more vulnerable to any economic downturns than London. The problem was accentuated by the chronic structural instability of the coal industry, in which the combination of rising demand and falling productivity led to a rapid swelling of the coal mining labour force up to 1914, but an even more rapid decline in employment as demand declined after the War.[2] It is suggested that the twin elements of economic dominance in the South and severe industrial instability in the North were already in place before 1914, but that the expanding export markets of this period helped conceal the vulnerability of the industrial areas. Ironically, the fact that the economic dominance of the South before 1914 does not show clearly in population or employment figures (Tables A3, 3.4, 3.6) is to a large extent due to the same over-expansion of employment in the coal mining industry which was at the root of so many of the employment problems of the 1920s.

The second of these questions, of why the South grew economically more rapidly than the North *after* the main recessionary shocks, is a question of long term regional economic development. The decreasing direct dependence on coal, an expensive material to transport, as a source of industrial energy, meant that industry became less tied to the coalfields and could seek locations closer to the main consumer markets.[3] Meanwhile, it was becoming very clear, as industrial depression continued in the North, that the main consumer markets tended to be in London and the South East. The outcome of this was that the main development of the newer industries, both before and after the War, took place preferentially in the London metropolitan belt,[4] and also in the West Midlands,[5] which was close by and had a history of diversified industrial growth,[6] rather than in the more distant industrial areas of Northern England, Scotland and Wales. Regional differences in the rates of employment growth, under conditions where growths of employment are market orientated, tend to be slight but, as Table A.5 shows, they were highly persistent.

There are two types of industrial geography which need to be considered when analysing the inter-war period; the geography of decline in the older industries, and the geography of growth in the newer industries.[7] The geography of decline in the older industries would tend to be important only in those years in which such employment decline was substantial, thus up to 1932 *but no later*. The geography of employment growth is clearly important in the post-slump recovery, in which the record of employment growth is a mixture of growth in the new industries plus cyclical recovery in various of the depressed older industries. It needs to be emphasised, however, that there was

substantial employment growth, at a rate of growth comparable with the 1932-39 "boom", throughout Southern England in the 1920s (Table 4.1). This was at a time when employment in the North was particularly depressed. Table 4.1 amplifies the point made in chapter 2 that in a post-slump recovery the dominant feature of growth is not the development of completely new forms of economic activity (the "innovations overcome the depression" approach of Mensch 1979), but rather a combination of an extension of existing, but relatively underdeveloped industries, such as the motor industry, of a post-slump recovery in certain depressed industries, such as iron and steel, and of a stability of employment in other depressed industries, such as coal.

The over-riding picture presented by Table 4.1 is one of substantial increases in employment in Southern England both before and after the slump, and of substantial decreases in employment in the peripheral regions during the long cycle downswing followed by substantial increases in employment there in the post-slump recovery. The distinction between long cycle downswing and long cycle upswing would appear to be of marginal importance in discussing patterns of employment change in Southern England, but of crucial importance in understanding patterns of change in the coalfield periphery.

Given the sharpness of the distinctions registered in Table 4.1, it would appear to be analytically very important to examine separately the downswing and upswing phases of the long cycle. In particular, the slump and post-slump recovery should not be regarded simply as two arms of a single business cycle, but rather as periods embodying radically different economic trends, despite their consecutiveness in time. Unfortunately this distinction is very rarely observed in the literature, with the result that "trends" are noted which are conflations of what might be strongly contrasting trends from the upswing and downswing.[8] If there is any conjuncture which is especially prone to trend-line changes it is the trough of the slump.

Richardson (1967 pp.266-298), in a work on the 1932-39 economic recovery, uses a *1929* bench mark for regional levels of employment in order to assess patterns of employment growth during the recovery, and to suggest that "Inner Britain" (Southern England and the Midlands) showed a much faster rate of growth and recovery than the "Outer Regions". Richardson's figures are reproduced, for selected years, in Table 4.2, and have also been recalculated, using 1932, the start of the recovery, as a base year for assessing what was happening during the recovery. It is found, using this recalcuation, that regional patterns of employment change were extremely uneven during the 1929-32 slump, but fairly even during the period from 1932 to 1939. Richardson's distinction between

regions of "considerable expansion" in the recovery period, and regions where "the recovery was a slow and uphill struggle"[9] is thus seen to be misleading. The important point is that "recovery" (economic growth in the 1932-39 period) was rapid in all regions, with insured employment growing by a quarter in five years, but took place against the background of considerably different depths of depression. The high levels of unemployment in the peripheral regions in the later 1930s were not due to a slowness of growth after 1932, and thus are not to be explained by a lack of new industries or a slackness in the housing boom as Richardson[10] suggests, but rather would be explained by the undispersed effects of the slump of the early 1930s, and even, to some extent, of earlier recessions.

The evenness of regional employment change in the post-1932 recovery is in many respects counter-intuitive, given the highly conspicuous welfare differences between regions at the time. This evenness of growth does not appear to have been noticed by contemporaries, perhaps not surprisingly, while in later works it is still rare for this feature to be noticed, Aldcroft (1970 p.104) being an exception. The question of why growth rates should be so similar is theoretically important, and needs to be discussed further.

In a period of relatively smooth economic growth, and with a market location tendency for the growth of economic activity, the numerical growth of employment in a fairly short time period is likely to be closely related to the size of the local market. The number of people employed in an area may be taken as an approximate surrogate for the size of the market. If the numerical growth in employment is proportional to the number of people already employed, then there is clearly a strong tendency for percentage rates of employment growth to be spatially even, irrespective of the size of population centres. Since unemployed people generally have relatively low purchasing power, the growth of employment in the context of the post-1932 recovery is likely to be causally related to the level of employment at the trough of the slump, rather than to the size of the insured working population, or to the level of employment at the beginning of the slump. There is certainly no convincing reason for assuming that the rate of employment gain is related to the rate of job loss during the slump in such a way that all regions would tend towards their 1929 levels of employment, with an allowance for national rates of expansion.

This relationship, although it fits post-1932 data very well, is only a first approximation. There are questions of industrial geography to consider also. One point to note is that since the general path of diffusion of consumption of advanced new products is likely to be from high income groups first to low income groups later, there is a

tendency for early production in new industries to be strongly drawn to regions with prosperous markets, and, in order to maximise the number of potential customers, a high density of population.[11] This factor would clearly have given London and its surrounding area a big edge in economic development in the 1920s and 1930s, and would have enabled this part of the country to have had better prospects of developing new industrial systems than low income areas far away from London. Section 4.4 below demonstrates that this fast growth is partially obscured in regional employment statistics by relatively slow levels of growth in the more remote rural parts of Southern England, a feature reminiscent of the pre-1914 period.

The overall implication of this is that in periods in which the geography of employment change is not dominated by large scale job losses, regional rates of employment change are likely to move more or less in step, but with a persistent tendency for employment to expand slightly more rapidly in the more prosperous core than in the less prosperous periphery. This tendency was present in the 1932-39 recovery, and very conspicuous in the full employment phase of the post-war period. Again, the point emerges (see chapter 2 above) that the 1932-39 recovery has in important respects more in common with the post-war boom than with the 1920s and the slump. It is partly a matter of narrative convenience, but also partly in order to emphasise the importance of the break in trend at the trough of the slump, that the division of coverage between chapters 4 and 5 is marked by the Second World War, rather than by the trough of the slump.

The inter-war period is divided, for the purposes of further discussion, into its three constituent long cycle phases:

(1) Downswing 1919-1929
(2) Slump 1929-1932
(3) Recovery 1932-1939

Such an ordering of the narrative implies that the inter-war period is seen in terms of a definite sequence of depression and recovery, using, as discussed in chapter 2, a fairly precise theoretical interpretation of the different meanings of the various phases of depression and recovery. Other writers have different interpretations.

The contemporary point of view in the 1920s would generally have focussed either on the problems of the post-war transition (e.g. Astor 1923)[12] or the problems faced by specific groups of industries (e.g. Liberal Industrial Inquiry 1928).[13] The problems of the export trades, and particularly the problems faced by the coal industry in the mid-1920s, very definitely affected some regions rather than others, but

the problem would primarily have been seen in terms of particular industries rather than in spatial terms. The creation of exceptionally high levels of unemployment during the slump led to a widespread realisation the period through the 1930s was one of great economic misery for a large proportion of the population, even though the growth of London continued as if nothing untoward had happened. The 1930s spawned a considerable literature of economic depression, of crisis and of revolutionary politics.[14]

Alford (1972) notes a contrast between the traditional pictures of misery in the inter-war period and the "revisionist" approach, associated chiefly with Richardson, Lomax and Aldcroft[15] which emphasise the positive aspects of inter-war development, and particularly the growth of new industries. Richardson's interpretation of the period follows Schumpeter (1939) in many of its emphases, but not to the extent of placing events in an explicit long cycle framework. This interpretation will be discussed shortly.

The revisionist school, while not attempting to deny that there was mass unemployment, emphasised the bright side of the period. Benjamin and Kochin (1979), writing from a monetarist perspective, have even tried to deny that there was mass unemployment, except briefly during the slump, suggesting that the "generous" levels of the dole led people to prefer leisure to work, thus causing voluntary unemployment. The high ratio of benefits to wages, Benjamin and Kochin argue, would have led to a greater likelihood of individuals declining available work and opting for unemployment. Such an explanation, however, may explain a certain degree of frictional unemployment but can not explain large scale unemployment, since it does not explain why if an unemployed person "turns down" a job because of an alleged preference for leisure, all other unemployed people similarly turn down that job so that the vacancy remains unfilled. A more likely case is that there were simply not enough jobs for all the unemployed; this is more in accordance with the observation that high levels of job loss precede high levels of unemployment.

Benjamin and Kochin thus use an argument which *assumes* full employment in order to attempt to *prove* that there was full employment under conditions of high measured unemployment. This procedure is not logically valid. There are also various weaknesses in their handling of data, notably in that they do not take into account cyclical variations in real wages as an explanation of the variability through time of the wage/benefit ratio, and they explicitly reject[16] any examination of the possibility that tightening and relaxation of the unemployment benefit regime might affect the degree of concealed unemployment as well as the

wage/benefit ratio.

Examination of much of the monetarist/neo-classical econometric work on unemployment leads one to suspect that the holy grail of this type of work is to find, amongst all possible regression equations, an equation which "proves" that high unemployment rates are due to the simultaneous occurrence of benefits being too high relative to wages, and of wages being too high. The fact that these two conditions are mutually exlusive is no impediment, and indeed is a help, to econometric research, since it is twice as easy to find a correlation which appears to support one of two mutually exclusive cases than it is to find a correlation which appears to support a single, clearly specified case.[17]

The revisionist case, though tending to err on the side of complacency, can at least be taken seriously. There are certain aspects of Richardson's analysis, in particular, which deserve close attention. Also, it should be noted that Aldcroft (1969) points to various important progressive tendencies between 1922 and 1929, without noting that the expansion of the South was counteracted by severe economic difficulties in the North.

Richardson's interpretation of the inter-war period represents part of an attempt to provide a coherent theoretical picture of the development of the British economy from the 1870s to the Second World War. Stated very briefly, Richardson's position is that from about 1870 Britain's industrial growth was retarded as the result of a lack of development of new industries,[18] that industrial growth was slow, and lopsidedly concentrated in the older industrial sectors,[19] that this "overcommitment" of investment in older industry made it more difficult for newer industries to find funds in the 1920s,[20] and hence retarded growth further, and that it was only when this older "development block" had been destroyed in the slump that a newer "development block" could emerge, in the 1930s, to enable rapid economic growth to take place.[21]

There are several points at which it is possible to take issue with Richardson's thesis. Most importantly, it is suggested here that there was a far greater degree of independence of old and new industries than Richardson allows for; the success or failure of newer industries, it is argued, did not depend on the failure or success of the older industries. It is, for example, unclear why "overcommitment" of the country's resources of capital and labour in the older staple industries of the North should have retarded the development of the newer industries of the South, but did not, for example, retard overseas investment, which expanded extremely quickly before 1914.

It is useful to examine Table 4.1 in this regard. The growth of employment in Southern England, based largely on the expansion of new industries and on the growth of the service sector, was fast and almost

continuous throughout the inter-war period. Employment in the peripheral coalfield regions fell sharply between 1920 and 1932, but increased again thereafter. These employment figures suggest that the growth of the new "development block" in the South of England was not primarily concentrated in the period after 1932, as the Richardson thesis suggests, but rather was spread throughout the 1920s and the 1930s, but with a brief interruption during the slump. Indeed the main differences between the economic trends of the 1920s and those of the 1930s lay not in what was happening to the newer industries, which were increasing in importance throughout, but rather in what was happening to the older industries. Up to 1932, employment in coal, textiles and shipbuilding declined extremely sharply, but after 1932 employment in these sectors remained relatively stable; this break in trend would have had a considerable impact on aggregate employment and output figures. Obviously the crisis in the older industries had a highly depressive effect on employment in the coalfield industrial regions *outside* the staple industries, but this is not sufficient to imply the case that either the "overcommitment" to the older industries, or the depth of recession in the older industries, would have noticeably retarded growth in the newer sectors. The positions of the older industries were undoubtedly unsustainable in the economic conditions of the 1920s and early 1930s, but there does not seem to be any real evidence to support the case that the expansion of employment in the newer sectors *relied* on the decline of the older sectors.

The juxtaposition of powerful economic growth in some industries and some areas with extremely severe decline in other industries and areas, makes the inter-war period difficult to interpret. At one end of the country there was mass unemployment and mass poverty, while at the other end of the country there was the dawning of a new affluence. J.B. Priestley's *English Journey* (Priestley 1934) has often been quoted in this respect; in his concluding chapter, Priestley distinguished clearly between "Old England, the country of the cathedrals and minsters and manor houses and inns", "the nineteenth-century England, the industrial England of coal, iron, steel, cotton, wool, railways; of thousands of rows of little houses all alike ...." and "the new post-war England, belonging far more to the age itself than to this particular island .... the England of arterial and by-pass roads, of filling stations and factories that look like exhibition buildings, of giant cinemas and dance-halls and cafes, bungalows with tiny garages (etc.)"[22] Such a classification has its economic validity, as the rest of this chapter (especially section 4.4(i)) indicates. In "Old England" the legacy of early employment growth in the more vulnerable industrial sectors was

relatively slight, and so the recessions of the 1920s and 1930s did not have a disproportionately great effect on employment; the growth of employment after the slump was, however, relatively slight. "Nineteenth century England",plus Wales, Scotland and Northern Ireland, took the brunt of recession, as the very industries whose development had generated the urbanisation of "nineteenth century Britain" had moved into sharp decline. The "new England", represented primarily by London and its suburban belt, was largely immune to recession, and expanded very rapidly in economic terms during the 1920s and 1930s. The contrast between the new England and "nineteenth century Britain" was the central geographical contrast of the inter-war years, and is shown in clear pictorial fashion in the photographs assembled in Stevenson and Cook (1977). The attempt to sort out "myth" from "reality" about the 1930s is, as Stevenson and Cook recognise, a complicated process; it is necessary to examine both what was happening in the South and what was happening in the North, and then to try and present a coherent interpretation from the contrasts.

The remainder of this chapter attempts to outline the geography of economic change at various phases of the inter-war period, with separate attention given to recessions and recoveries. It is considered, as a matter of principle, that the only satisfactory way to explain long term economic change is by considering such change as the cumulative result of several phases of short-run economic change.

4.2 Downswing, 1918-1929

(i) 1918-1922

In contrast with the long cycle downswing starting in the mid-1960s, that starting in the 1910s took place against a background of full-scale European war, and of complicated sequences of post-war reconstructions, reparations, booms, slumps, disruptions of trade and hyperinflations. As a result of this very jerky transition from War to peace-time production, economic fluctuations were far more severe in the early stages of the post-1918 downswing than in the early stages of the post-1966 downswing. Furthermore, four years of war meant that there was a sharp break between the pre-war economy of the upswing and the post-war economy of a downswing, rather than a gradual dissolution of the growth patterns of the upswing.

It is not intended to provide any detailed account of international economic trends in the years after the war, except insofar as they affect the UK. Lewis (1949 pp.16-37) provides a highly useful summary of these international trends;[23] it needs to be recognised, however, that the USA was able to use its position of geographical isolation from the war to move smoothly to a new phase of prosperity, relatively trouble-free until the Wall Street Crash of 1929, while in contrast the economies of Central Europe were in severe trouble, partly as a result of war damage, partly because of the costs of reparations imposed upon defeated nations (notably Germany) and partly because of the dissolution of the Austro-Hungarian empire into smaller economic units. In the Soviet Union, the civil war following the Revolution led to a collapse of production, and to famine.[24]

The UK was in neither as favoured a position as the USA nor as unfavoured a position as Continental Europe, but still faced the major problem of the transition from war-time production to peace-time production. After a full scale war there is a strong incentive for the state to engineer an economic boom for several reasons; to expand agricultural activity, to allow for the smooth demobilisation of fighting forces without simultaneously creating high unemployment, to repair the economic damage caused by the war, to meet pent-up consumer demand, and to pay off war debts and reparations. The relative importance of each of these imperatives depends on the economic and political situation of the country at the conclusion of hostilities.

In general a boom might be regarded as either spontaneous or artificial. In a spontaneous boom, substantial increases in production came about virtually without prompting as a result of expansive

underlying tendencies in the economic system. Such a boom is likely to be only mildly inflationary and will tend to be followed by a relatively mild recession; the "boom" is not followed by a "bust". An artificial boom is one in which the degree of expansion of the economy goes beyond that which is economically warranted, and is likely to lead to a subsequent crash. There are two main types of artificial boom: the stock market "bubble", and the state-engineered boom. A post-war boom is typically an artificial state-engineered boom, and certainly was after the 1914-1918 war.

In such a boom, the economy is being forced to meet more demands than its productive structure will allow for. There is a tendency, therefore, for this sort of boom to be more a boom in prices than a boom in production.[25] This sets up a high rate of inflation,[26] and also sets up a situation in which any slackening of the boom leads to a severe recession. The greater the "inflationary gap" between the demands placed upon the economy and the capacity of the economy to produce, the greater the degree of inflation is likely to be. The Central European hyperinflations, which ran from 1918 to 1923, may be seen in this context.

The UK economy, though not as war-ravaged as some of the continental economies, went through a cycle of boom and slump between 1918 and 1922. In order to preserve the technical meaning of slump as being the last recession of a long cycle downswing, the phrase "pseudo-slump" will henceforth be used to describe the 1920-22 recession.

Table 4.3 shows the movements in the main national income indicators between 1918 and 1921. GNP at *current* prices was rising by over 10% per annum. GNP at *constant* prices was falling, however. It would appear that the series presented in Table 2.1, based on the series for GNP at constant prices given by Mitchell (1975 p.790) very much exaggerates the decline in real national income during the early post-war period. The use of the cost of living index as a deflator, instead of Mitchell's GNP deflator, suggests that real national income declined very slightly between 1918 and 1920, and much more quickly in 1920 and 1921. This gives a picture broadly consistent with the observed changes in unemployment (Tables A7, A8).

The fact that national income was at best static does not mean that there was no boom present. The rapid rise in prices set up economic conditions in which there was scope for the creation of large personal fortunes,[27] while full employment was maintained despite demobilisation. As later discussion makes clear, however, the maintenance of full employment was based largely on the expulsion of female labour from the workforce when the war was over (see also Table 4.8). It was thus the

pseudo-slump following the boom which first created high levels of *male* unemployment, rather than the process of demobilisation itself, in which male workers displaced female workers.

The recession which followed the boom lasted from late 1920 to 1922 and, although shorter than the slumps starting in 1929 and 1979, was at least as sharp, and also had a regionally strongly differentiated impact. The discussion of this recession which follows is based largely on Astor (1923), which may be regarded as one of the first modern works to cover the geography of recession, and is supplemented by the examination of monthly regional unemployment statistics in the engineering and construction sectors (Tables 4.4 and 4.5), as published in the *Gazette*. Unfortunately, it is not possible to present monthly regional unemployment statistics across all insured sectors for such an early period.[28]

Geographically, perhaps the most important point about this recession is that it marked a major reversal of polarity in regional unemployment rates. Beveridge (1944 pp.72-75) was one of the first to point out that there had been a fundamental reversal of regional patterns of unemployment between 1914 and the 1930s, although without actually precisely dating this reversal. Unemployment rates for August 1922, published in Astor (1923 p.16) and reproduced in Table A7, show that this reversal of fortunes had already taken place by late 1922. Wales still had a relatively low unemployment rate (12%, compared with a U.K. average of 16%), but all the other coalfield industrial regions had higher than average, or average, rates of unemployment, while Southern England had lower than average unemployment rates. Before the First World War, in contrast, London had very high unemployment rates, the rest of Southern England had slightly less high unemployment rates, and the coalfield industrial regions had low unemployment rates.[29]

Since unemployment has been higher in the North then in the South for every month without exception since 1921, and since unemployment had previously been, as far as can be ascertained, generally higher in the South than in the North, the 1921 pseudo-slump needs to be examined more closely. A single deep recession is seen to have triggered off fundamental and perhaps irreversible changes in the U.K.'s economic geography.

Close examination of this recession shows that the industries with particularly severe unemployment problems were in general not the main "declining industries" of the inter-war period (coal, textiles, etc.) but rather the capital goods industries which had expanded most rapidly during the war and the post-war boom. Table 4.6 shows, for example, that in August 1922, male unemployment in the engineering

sector stood at 24% and in shipbuilding at 39%, compared with 8% unemployment in coal mining and 9% unemployment in textiles. It can be seen from this that the "regional problem" was not *created* by the decline of employment in coal mining and cotton in the inter-war years, even though the problem was much *intensified* by such a decline. Instead, the problem of decline in the export industries represented an over-burdening of what was already a vulnerable economic structure in the coalfield industrial regions.

It is regarded here as probable that levels of employment before 1921 were more cyclically vulnerable in the coalfield industrial regions than in the South, even though the "normal" background rates of unemployment were generally higher in the South. A mild recession would leave unemployment rates higher in the South than in the North, whereas in a severe recession it is possible that unemployment rates in the North might well be temporarily higher than in the South. It is difficult to generate reliable and comprehensive data referring to local cyclical changes in the employment structure prior to 1914. It is possible that the only way to assess these patterns of change for periods prior to 1914 is by a judicious splicing of statistical material concerning regional trade union unemployment rates, which measure unemployment over a very limited and unrepresentative section of the workforce, and pauperism statistics, which do not measure unemployment directly, but which provide an index of the local severity of poverty through the business cycle.[30] The patterns of regional cyclical fluctuations in unemployment before 1914 are unclear and controversial. It seems to be clear, however, that just before the 1920-21 recession, and almost certainly at pre-1914 cyclical *peaks*, unemployment rates were higher in London and Southern England than in the industrial areas, while after a single, particularly severe recession, unemployment rates were higher in the industrial areas than in London and the South, and remained higher in all subsequent periods both of depression and of prosperity.

The patterns of recession and unemployment between 1920 and 1922 need to be examined more closely. Tables 4.4, 4.5 and 4.7 provide details of unemployment by region in the construction, engineering and shipbuilding sectors in these years. The main series to be discussed are those concerning construction and engineering, since the hard hit shipbuilding industry is too localised to allow for strong generalisations to be made about North-South economic differences. Even in this sector, however, it would appear that unemployment in the North rose far more quickly than unemployment in the South, as comparison between the South West and the Northern region or Scotland in Table 4.7 would show.

The engineering and construction industries would be expected to

show widely different cyclical responses in terms of unemployment. Regional unemployment patterns in engineering tend to reflect regional patterns of recession specific to the engineering industry, whereas regional patterns of unemployment in construction tend to reflect more the regional differences in the general level of demand for labour. The construction industry is one with generally relatively easy labour force entry so that in times of recession the labour force in this industry is swollen by those displaced from other industries.[31] The unemployment rate in construction is then given by the complex relationship between the size of the workforce in the construction industry (which relates to the total level of demand for labour in the local economy) and the current level of demand for construction labour (which is given by factors specific to the construction industry).

This set of linkages suggests that regional patterns of unemployment in the construction industry may be taken as an approximate substitute for figures for patterns of unemployment across the whole industrial spectrum. Table 4.6 shows that in June 1920, before the recession set in, unemployment in construction was consistently higher in London and Southern England than in the Midlands or the North. Ireland had exceptionally high rates of unemployment, both in construction and across the spectrum of employment, before, during and after the recession.

Between September 1920 and May 1921, unemployment in the construction industry increased from 2.8% to 16.6% (Table 4.5), an increase which, though substantial, was slightly less than the increase in the economy as a whole; trade union unemployment rates increased from 2.2% to 19.9% in the same period.[32] At the end of this period, unemployment was slightly higher than the national average in London, but considerably *lower* than the national average in the rest of Southern England. Unemployment in construction was higher than the national average in the West Midlands, reflecting the problems of regional dependence on engineering (to be discussed shortly), but remained slightly lower than the national average in all the remaining coalfield industrial regions. Unemployment rates in engineering show a broadly similar general pattern (Table 4.5), with much higher than average unemployment rates in the engineering industry in the Northern region, presumably linked to the problems of severe depression in the locally dominant shipbuilding industry (cf Table 4.7).

The trough of the recession was reached, in unemployment terms, in May or June 1921 as the effects of a coal mining stoppage were superimposed on cyclical effects. At this stage North-South differences in the unemployment rate would appear to have been slight, but if

results for the construction and engineering industries are taken in conjunction, it would appear that unemployment rates were slightly lower in the South than in the Midlands and North. It perhaps needs to be added that particularly intense but temporary depressions in certain localised industries might have a substantial effect on unemployment rates in particular parts of the North; the collapse of European markets in 1920, for example, led to unemployment in the cotton industry reaching over 40% in early 1921,[33] although by late 1922 unemployment was lower in cotton than in other industries.[34]

While the trough of the recession was reached in mid-1921, unemployment rates in both construction and engineering increased between mid-1921 and early 1922, and regional differences in the unemployment rates in these industries also increased at the expense of the coalfield industrial regions; the same also applied to shipbuilding (Tables 4.4, 4.5, 4.7). The increases of unemployment rates in engineering and shipbuilding probably reflects the continuation of depression within these industries, while the large increase in unemployment in construction probably reflects the degree to which this industry could absorb a swollen labour force in the summer months, but not in the winter months. It would seem that in the early intense part of the recession, unemployment in the North caught up with unemployment in the South, whereas in the year after the trough of the recession unemployment could well have been falling in the South, but remaining sticky in the North.

The recession of the early 1920s was unusual in that it was a response to unsustainable booms in the munitions industries during the war and the metal trades immediately after the war.[35] Astor notes that the booms in the metal industries "attracted an enormous number of men (sic) into this group of industries, for whose work there is at present no demand."[36] Reference to Table 4.8 shows that in fact it was women who were most affected by the changing post-war patterns of demand in engineering; female employment in this industry fell by 400,000 in the space of about four years. The increase of male adult unemployment from a very small number in 1918 to 1,049,000 in August 1922 thus severely understates the impact of post-war readjustment and recession on employment.

The fact that the recession was severest in industries which had previously been expanding rapidly, rather than in those which had been expanding slowly, indicates an atypical geography of employment and unemployment. Astor (1923 pp.19-21) shows that certain towns and regions went through a phase firstly of unusual expansion in the size of the male population, and then of unusually high unemployment. Some of Astor's figures are reproduced in Table 4.9 and show that the link between high

population increase and high unemployment was particularly clear for Middlesbrough (main industries; shipbuilding, iron and steel), Sunderland (shipbuilding, engineering), South Shields (shipbuilding, engineering) and Sheffield (iron and steel, engineering), and amongst the smaller towns, Barrow (shipbuilding, engineering). Various parts of the Clydeside conurbation, where the shipbuilding industry was particularly large, were also severely affected in this way, for example, Greenock, Clydebank and Port Glasgow. Unemployment was exceptionally severe in the shipbuilding centres of Scotland and North Eastern England; Census figures, reproduced in Lee (1979) show that employment in this industry had increased in Scotland from 51,000 in 1911 to 125,000 in 1921, before falling back to 78,000 in 1931, while in Durham and Northumberland the respective figures were 43,000 employed in 1911, 98,000 employed in 1921 and only 27,000 employed in 1931. There were two severe drops in shipbuilding employment between the wars; firstly in the recession of the early 1920s, and secondly in the 1929-33 slump.

The reason why the North developed much higher unemployment than the South between 1920 and 1922 cannot be found in the much discussed juxtaposition of expanding industries in the South and declining industries in the North. While the 1929-32 slump attacked mainly those industries in a process of long-term decline, the 1920-22 recession attacked mainly those industries which had expanded most rapidly in previous booms. Both sets of industries were, however, predominantly located in the traditional coalfield industrial regions, leading to a broad, but inexact, correlation between the geography of decline in the early 1920s and the geography of decline in later parts of the downswing. At this early stage, Scotland, North East England and the West Midlands were particularly depressed, as a result of high levels of employment in the shipbuilding, vehicles or engineering industries, while Wales, Yorkshire and the East Midlands generally had relatively low rates of unemployment. Astor (1923 pp.328-330) gives a list of towns with high levels of unemployment, in absolute terms, and shows that in Southern England, outside London, high concentrations of unemployment were generally only to be found in coastal engineering/ shipbuilding/naval centres, such as Sheerness (26% unemployment in August 1922), Gravesend (20% unemployment), Plymouth (24%), Devonport (22%), or Portsmouth (19%). In the West Midlands, Birmingham had an unemployment rate of 18%, but surrounding centres, such as West Bromwich (26%), Wolverhampton (22%), Wednesbury (32%), Cradley Heath (42%), Oldbury (25%), Tipton (33%), Handsworth (44%), Smethwick (26%), Walsall (29%) and Aston (26%) had much higher unemployment rates. East Midland towns, such as Leicester (below 10%), Derby (13%) and Nottingham

(17%) tended to have moderate unemployment rates, given the context of the time, although smaller engineering centres, such as Grantham (32%) and Lincoln (28%) were severely affected. Apart from Sheffield (33%) and Middlesbrough (33%), both major iron and steel centres, Yorkshire towns were relatively little affected by the recession, with Huddersfield, Halifax and Dewsbury each having barely 10% unemployment, and unemployment being slightly below the national average in the major urban centres of Leeds (15%) and Hull (15%). Coastal shipbuilding centres in the North East and Scotland were however very severely affected, with unemployment reaching 43% in Jarrow, 43% in South Shields, about 35% in the Hartlepools and 44% in Port Glasgow. In the North West, unemployment was generally slightly below the national average, except in the major shipbuilding centres; unemployment in Barrow stood at 49%, and in Birkenhead at 26%. The assessment for the North West would change dramatically, however, if unemployment rates for 1921, rather than for August 1922, were to be considered. 1922 was, unusually for the 1920s, a year in which the unemployment rate in the cotton industry stood below the national average. In 1921 especially, and also in 1923, unemployment in the cotton industry was considerably above the national average,[37] and it would seem legitimate to assume that towns in the Lancashire cotton belt had much higher than average unemployment rates in these years.

In the early 1920s unemployment in coal mining stood considerably below the national average, never exceeding 12% during the 1920-22 recession, and standing at less than 3% by late 1923. This was at a time when the national unemployment rate was over 10%. It is argued, in section 2.2(ii) below, that it was only as a result of a set of fortuitous circumstances that employment in the coal industry remained high in the early post-war period. In early 1925, however, employment in coal mining declined sharply, and the loss of jobs in this industry became the single most dominant feature in the geography of unemployment. Instead of being slightly higher than the national average, as in 1922, unemployment rates in the coalfield industrial regions became greatly higher than the national average.

(ii) 1922-1929

The recession of 1921 was undoubtedly of the intensity of a slump, but differed in that, for historical reasons (the effects and after-effects of the First World War), it came at the beginning rather than the end of a long cycle downswing. Furthermore, in that the recession affected mainly the boom industries of the previous years, rather than

those industries in long term decline, cotton being the main exception, there remained at the end a far greater concentration of employment in potentially vulnerable industries than might have been expected given the severity of the recession. The decline of the basic export industries, and notably of coal, had yet to gather pace.

These two facets of the 1921 recession, that it was of slump intensity but that it still left large numbers of vulnerable industries intact, help to explain much about the subsequent recovery, and its peculiar conjunction of high unemployment, substantial growth in new industries (emphasised by Aldcroft 1969) and substantial decline in older exporting industries.[38] This conjunction was at the heart of the economic experience of the 1920s. Even in a long cycle downswing, there are several opportunities for fresh economic growth at favourable cyclical phases. The reduction of unemployment is slowed down, however, by the continued problems of the declining industries of the downswing, and if these problems are severe, as in the 1920s, pockets of very high and increasing unemployment may develop, even if large parts of the economy are healthily expanding. The situation after the slump, described in more detail in section 4.4 below, is rather different; unemployment is high, but the *reduction* of unemployment is no longer constrained by the declining industry problem. Furthermore, the development of local pockets of unemployment in the 1920s reflects the problem of the current accumulation of unemployment, while the persistence of such pockets in the 1930s reflects the *past* accumulation of unemployment, and the difficulty of reducing heavy local unemployment even after years of economic recovery.

Economic growth was fast from 1921 to 1925, with GNP increasing by an average of 3.9% per annum, slightly slower than in the post-slump recovery of 1933 to 1937, when growth averaged 4.3%, but still high by historical standards. It was suggested in chapter 2 that such a phase of rapid growth is characteristic of post-slump periods; the same evidently applies to the aftermath of a pseudo-slump. This expansionary economic climate creates conditions favourable to innovation and to the growth of youthful industries, with five of these industries (rayon, electrical engineering, motor vehicles, chemicals, and paper and printing) accounting for a third of gross capital formation between 1920 and 1930,[39] and with the extension of the electrical supply industry also having a major effect.[40] Changes in business organisation were also prominent.[41]

Given such an expansion of activity, unemployment fell substantially, with figures for insured unemployment declining from 23.4% in May 1921 to 9.3% in June 1924, a fall of 14.1 percentage

points. This reduction in unemployment was more substantial even than that between 1932 and 1937. These figures suggest a process closely analogous to a post-slump recovery, with the economy swiftly moving back towards full employment. Furthermore, while regional employment figures for 1921 or 1922 are unfortunately not readily available,[42] Table A5 shows that employment in 1923-24 grew rapidly in all regions, excepting only Wales, the type of performance typical of a post-slump recovery of the type which occurred after 1932 (Table 4.1; section 4.4 below).

This is the positive side to the 1920s. The negative side is that the 1920-22 recession did very little to resolve the problems of long term overcapacity in the basic export industries, in contrast with the effects of a "genuine" slump. The structural problems were in fact immense, especially in the coal industry, and from the mid-1920s these problems began to have a considerable effect on employment levels in the peripheral regions. The year 1924-25, which will be discussed in detail shortly, was particularly crucial in this respect. In the South of England the "post-pseudo-slump" recovery continued unabated, yet in the Yorkshire and North East region, insured employment fell by over 10% (Table A5). It was as a result of various accidents in timing that the problems of job loss in coal mining bacame acute only as late as 1924. Major coal mining strikes in Britain (1921) and the USA (1922) had the effect of artificially reducing international capacity in the industry, while the French occupation of the Ruhr had the same effect.[43] The resumption of full coal production in the Ruhr, and, to a lesser extent, the high exchange rates created by the return to the Gold Standard in 1925, brought the problems of the coal industry into sharp focus; the rate of job loss in this industry, on the basis of figures given in the *Annual Reports of Mines and Quarries*[44] shows that 69,000 jobs per annum were lost on average between 1924 and 1928, compared with 42,000 jobs per annum in the slump period. This had drastic effects on regional unemployment rates, with unemployment in 1925 reaching 20% in Wales and 15% in Yorkshire and North East region, during a cyclical upswing, and *before* the effects of the 1929-32 slump had been felt. Table A8 shows that the value for the index of regional unemployment inequality almost tripled between mid-1924 and mid-1925, and only gradually subsided thereafter. It should perhaps be emphasised that the bulk of this happened *before* the return to the Gold Standard in 1925, which cannot therefore be legitimately invoked as the main causal factor behind this round of regional economic disturbance. Jones (1985) has suggested however that sterling could be regarded as overvalued even in 1924, resulting in severe problems for the peripheral regions.

In late 1924 and early 1925 these problems appear to have been primarily concentrated in the coal industry, but all major export industries were to have difficulties in the second half of the 1920s.

Primarily as a result of large scale job losses in the export industries, and particularly in coal mining, unemployment continued to remain high during the mid to late 1920s, despite the elements of expansion identified by Aldcroft (1969). The level of unemployment at any stage during the 1920s could be regarded as the resultant of the accumulation of unemployment during the 1920-22 pseudo-slump, the accumulation of unemployment resulting from job loss in the basic export sectors at later stages, and the mitigating effects of employment growth in the remainder of the economy. All these effects are large, but the basic reason why unemployment never went far below 10% (about 7½% in current terms; chapter 3.5 above) was that substantial job loss in the basic export sectors never permitted a complete absorption of the unemployment generated by the pseudo-slump of the early 1920s.

The presence of the declining industries severely retarded employment growth in the periphery. Table 4.10 suggests that, apart from a brief interruption of growth in the slump years (1929-32), employment in Southern England grew at a fairly steady rate throughout the inter-war period. In view of the well-known discussion of the different locational characteristics of "old" and "new" industries between the wars[45] one can suggest that there is a close relationship between the rapid expansion of the core regions in the 1920s, and the development of new industries. The Midlands shared in this expansion in the 1920s, but to a lesser extent.

It is possible, in certain recovery circumstances, that fast growth in the South might be matched by fast growth in the North. This happened in the 1932-39 period, as Tables 4.1 and 4.10 show, but emphatically did not happen between 1923 and 1929. The basic difference is that by 1932, the great bulk of employment decline in the "depressed" industries had already taken place, so that employment decline in these industries did not nullify growth elsewhere in the local economy, whereas in the 1920s the decline of the coal industry especially represented a very severe check to growth. While employment was increasing at 4.1% per annum in the South East between 1923 and 1929, employment *fell* by an average of 3.0% per annum in Wales, the worst affected of the coal mining regions.

It is not intended to examine in detail the patterns of employment growth in the South and Midlands during the 1920s, but an examination of patterns of job loss in the North is required, and in particular an examination of the relationship between the pattern of

job loss in the coal industry, and regional patterns of accumulation of unemployment.The growth of employment in Southern England would clearly have been sufficient to maintain full employment in the absence of large-scale inward migration; the fact that substantial levels of unemployment still existed in the South in the late 1920s indicates considerable net immigration from the depressed regions, and hence a geographical displacement of the unemployment effects of job loss.[46] Had the rates of job loss in the coal mining industry been lower, for example, net migration from the mining areas to more prosperous areas would have been lower. Table 4.11 shows that, between the wars, inter-regional migration was most intense during the early slump (1929-31) as employment fell sharply in the coalfield industrial areas, but held steady in the South, and also in the year of recession in 1927-28. Table A5 shows that in 1927-28, employment fell sharply in many of the peripheral regions but increased by 3.1% in London, setting up a substantial migratory pressure gradient. Background levels of migration in the 1920s were generally higher than in the post-slump years, despite regional inequalities in unemployment rates being less than in the 1930s (Table A8); this more intense directed migratory flow may be taken as a reflection of the position in which employment was increasing rapidly in the South, and, in contrast with the post-1932 period, remaining static in the North. It is assumed that the extraordinarily low figure for migration in 1924-25 results from a miscalculation in the source paper (Makower, Marschak and Robinson 1939); the total employee population (employed plus unemployed) grew by 3.5% (71,000) in the UK between mid-1924 and mid-1925, compared with a fall of 0.3% (2,000) in Wales, and low rates of increase in other peripheral regions,[47] not the sort of result which is consistent with net inter-regional migration standing at a mere 300.

Between 1923 and 1929, net migration from depressed to prosperous areas probably totalled around 500,000, while in June 1929 unemployment in the more prosperous regions (L,SE,SW) totalled 195,000. Net migration flows from the West Midlands, with 163,000 unemployed, were probably relatively slight, while in the peripheral regions (YNE, NW, Sc, Wa, NI) unemployment stood at 818,000, or 13.2%,in June 1929. Without there being any net migration from the depressed areas, unemployment in the periphery would have stood at around 1,300,000, or 20%, by mid-1929.

The growth of employment in the South thus allowed much of the unemployment in the North to be absorbed, through new job creation and inter-regional migration, but there were still very substantial pockets of unemployment which remained. The largest pockets of unemployment were generally those created by the decline of coal mining employment.

It is difficult to gain an accurate picture of the true employment

position in coal mining in the 1920s in that the two main sources, the national insurance statistics, and the *Annual Report of Mines and Quarries* used contrasting methods of calculating employment. The national insurance statistics enable a calculation of insured coal mining employment to be made by subtracting the number unemployed in this industry from the total coal mining employee population. The problem with this source is that if there is systematic short time working, a person could work during part of a week and claim benefit when he was not working.[48] Such a worker would appear as employed under the Mines and Quarries figures, but might appear either as employed or unemployed, depending on status on a particular day, under Ministry of Labour statistics. Such differences can have substantial statistical effects; between mid-1924 and mid-1925, employment in coal mining can be calculated to have fallen by 280,000 on the basis of Ministry of Labour statistics, or by 124,000 according to Mines and Quarries figures. Official unemployment figures in coal mining areas will reflect the Ministry of Labour figures rather than the Mines and Quarries figures.

C. Clark (1929) attempted to measure the changing *volume* of work in coal mining (as opposed to the changing number of jobs) by multiplying the number of wage earners on colliery books by the average number of shifts worked in the week (a figure, based on regular surveys, which was available on a regional and national basis in the *Gazette*) and then reducing this figure to its equivalent in terms of the number of full time jobs (Table 4.12). The full working week was taken by Clark as comprising 5.8 shifts. In April 1924, employment (in terms of numbers on the books of coal mines) stood at 1,191,000, with the length of the working week being 5.71 shifts. In August 1925, employment had fallen to 1,049,000, a drop of 11.9%, whereas the average length of the working week had dropped to 4.48 shifts, a fall of 21.5%. The volume of work, according to Clark, had fallen from 1,188,000 jobs (full-time equivalent) to 868,000 jobs (full-time equivalent), a decline of 320,000, or 26.9%. The bulk of adjustment to recessionary conditions in the coal mining industry would appear to have been through an increased prevalence of short time working, rather than through a decline in the number of jobs, although inevitably, as the working week shortens as recession continues, the possibility of extending short time working diminishes, and permanent job losses become a more significant feature.

It is necessary to establish the geography of recession in coal mining in 1924-25 in order to understand better the regional patterns of unemployment which were generated; there can be no doubt that the recession in the coal industry was the main factor causing regional inequalities in unemployment to increase sharply at this time (Table A.8),

but a more precise delineation of the crisis is required. Figures are available in the *Gazette*, on a coalfield by coalfield basis, for the number on the books of coal mines, the average length of the working week and the rate of unemployment in the coal-mining industry. In the presentation which follows, a certain degree of aggregation of coalfields has been undertaken for reasons of clarity.

Table 4.13 shows the number on the books of coalmining in different areas during the 1924-25 crisis. The changes in employment registered understate the degree of recession since no account is taken of the increased prevalence of short time working. Table 4.14 attempts to convert these figures into full time equivalents taking 5.8 shifts as the basic length of the working week.

Table 4.15 provides the European dimension to the situation. German output of coal dropped sharply between 1922 and 1923, with the Franco-Belgian occupation of the Ruhr.[49] Part of the slack was taken up by increased production in Britain and France, but total European output fell slightly. The halving of production in Germany temporarily concealed the problem of static or declining markets. The resumption of full production in Germany in 1924 halted the increases of production elsewhere, and led to slight decreases in production in the UK and Poland, It was not, however, until 1925 that the effects of this resumption of production in Germany had its full effect on other coal producers; the problems of severe overcapacity then became very clear,[50] and output fell by about a tenth in both the UK and Poland. Within the UK, problems of overcapacity affected exporting coalfields rather than those serving predominantly internal markets; between September 1924 and September 1925 the volume of work fell by 20.3% in South Wales, 25.3% in Durham and 18.1% in Northumberland, but only by 14.8% in Yorkshire and 16.0% in the Midlands (Table 4.14). All coalfields were hit severely, though, and none of the coalfield regions escaped from substantial increases in unemployment (Table A7). The geographical patterns of specialisation within the coal industry meant that internal coalfields were *slightly* better shielded from the broader European problems than were the coastal coalfields, but perhaps the best predictor for changes in the general unemployment *rates* in coalfield areas at this time was not the pattern of specialisation within the coal industry, but rather the extent to which the coal industry dominated the local economy. An area, such as South Wales, with an exceptionally high proportion of employment in coal mining, is likely to have much more severe increases in unemployment than a region such as the North West in which the proportion of employment in coal mining was relatively slight, while in regions in which coal mining employment was negligible, the expansionary economic conditions

outside the coal industry helped unemployment to decline (Table A7). In shift-share terms, regional differences in employment change would have been dominated by structural shifts, and notably the presence or absence of coal mining, rather than by differential shifts within the coal industry.

Table 4.16 attempts to summarise some of the evidence. There is generally a close and direct correspondence between a decline of employment in coal mining and an increase in the measured unemployment rate, although job losses in shipbuilding would also have to be taken into account. The bulk of the increase in unemployment in the North Eastern region (YNE) can be explained by coal mining job losses. In Wales, although virtually the whole of the net job loss between early 1924 and late 1925 can be explained by coal mining, the situation appears to be more complicated, in that the measured increase in unemployment by far outruns the measured job loss in coal mining. Reference to the time series for unemployment, however (TableA7; *Historical Abstract* Table 162) shows a very sharp and temporary peaking of unemployment in September 1925; there were 81,500 unemployed in Wales in July, 132,500 in August, 164,000 in September, 142,200 in October and 98,400 in November. The increase of unemployment of 80,000 in Wales between July and September 1925 was perhaps four times the number of jobs lost (in terms of full-time equivalents) during the same period, as indicated in Table 4.14 (South Wales, plus a small allowance for North Wales). Yet the *Gazette* shows the percentage rate of unemployment in coal mining in Wales rising sharply from 14.5% in July to 29.9% in September and 34.3% in October, indicating a job loss of roughly twice this size. It is difficult to make proper sense of these figures without a very detailed knowledge of the methods by which official statistics were compiled at the time. Provisionally, though, one can certainly assert that the problems of the coal mining industry directly accounted for at least half of the increase in unemployment in Wales in 1924-25, and quite possibly a substantially higher proportion still. The monthly industrial reports collected in the *Gazette* suggest a slight drop in employment in Wales in iron and steel, and in engineering, but not enough to account for the residual.

While there are complications in detail, the general theme remains clear that the large increases in unemployment in the peripheral regions in 1924-25, at a time of economic expansion in the core, were primarily due to heavy job losses in coal mining, following the resumption of normal production in the Ruhr which exposed severe overcapacity in the European coal industry. The main exporting coalfield regions of South Wales and North East England were more depressed than the internal coalfield regions of, for example, Yorkshire and the Midlands. The main reason for this

was *not* because the exporting coal sector was more vulnerable than the coal sector producing for internal markets; this is a cause, but only a secondary cause. A more central factor is that in the coastal coalfields the presence of large and expanding export markets meant before 1914 the expansion of coal production could proceed without the need for the development of a significant local industrial structure, so that *specialised* coal mining areas could develop which otherwise had low levels of industrialisation. The South Wales coalfield and the North Eastern coalfields (especially away from the coast) are the main examples. These coalfield areas had exceptionally high proportions of employment in coal mining, 40% of total employment in Glamorgan in 1921 and 27% in the North East (Table 4.17),and were as a result of this exceptionally vulnerable to a severe downturn of the coal industry. In the internal coalfields, most notably in the Midlands, Lancashire, Yorkshire and West Central Scotland, the development of the coalfields went in tandem with the development of local industry. The exporting coalfields *specialised* in coal production, and were hit most severely as *regions* by the sharp decline in coal production, whereas in the internal coalfields, coal mining was but one activity in a complicated industrial structure,[51] and the stabilising effect of the presence of other industries meant that a decline in coal mining was not so keenly felt. Indeed, the expansion of the "new" industries in the West Midlands was more than sufficient to offset the problems of the coal industry.

It can therefore be demonstrated that the notable differences in employment and unemployment performance between North and South in 1924-25 (Table A6, Fig A6, Tables A7, A8) resulted chiefly from an exceptionally severe downturn in coal mining at a time when expandion in the South continued unhindered. The problems in coal mining were a partial check to progress in the Midlands. It is not intended here to say much about the period between 1925 and 1929; attention will pass quickly to the slump. It is, however, important to note that the bulk of the increased regional inequality in unemployment generated in the critical year 1924-25 persisted through to the slump; the Cn index (Table A8) stood at 4.4 in September 1925 and 3.9 in September 1928.

The prolonged coal mining stoppage in 1926[52] led to a sharp and substantial decline in employment in the peripheral regions in early 1926, and a quick resumption of activity in late 1926; this is reflected in figures for regional employment change in 1925-26 and 1926-27. Expansion in the South of England continued smoothly, despite the coal stoppage. The nine day *general* strike in May 1926[53] is unlikely to have had much lasting effect on employment levels, but the nine month coal lock-out had a great effect, leading to many stoppages of employment in the industrial areas.

1927-28 was a year of recession, which had severe effects on the coal and textile industries; regional patterns of employment change reflect this. In coal mining, insured employment fell by 129,000 between July 1927 and July 1928, while the number of wage earners on colliery books fell by 93,000 and the amount of work done fell by the equivalent of 116,000 full time jobs.[54] This was a severe decline, but less severe than in 1924-25. Employment in textiles fell by 37,000 (3.1%), leading to problems in the cotton and wool industrial areas of Lancashire and Yorkshire, but the newer industries were less affected, and employment in the engineering trades, which would include the vehicles and electrical sectors, increased by 9,000. Employment in London increased considerably in 1927-28, boosted partly by the expansion of new industries and partly by the growth of employment in the miscellaneous services and distributive trades. A detailed discussion of changes in employment in the service sector in the 1970s (in chapter 6 below) suggests that conditions of high unemployment (and thus ready availability of cheap labour) and rapid growth are generally extremely favourable for increases in employment in the lower paid parts of the service sector. Between 1923 and 1939, UK insured employment in the distributive trades increased by 66.0% (3.3% per annum) while insured employment in the miscellaneous services increased by 80.5% (3.8% per annum).[55] Clearly a parallel process was operating between the wars. It seems likely, furthermore, that employment in these sectors grew faster in London, where consumer demand was expanding rapidly, than in the more depressed industrial regions.

1928-29 was a year of expansion before the slump. Employment increased in all regions except Scotland, and generally to a greater extent in the South of England and the Midlands than in the North. The changing distribution of population allowed unemployment differentials to shrink slightly (Table A8) despite the expansion of employment being slightly slower in the periphery.

The slump, however, was soon to follow, bringing a very sharp reversal to this cyclical recovery. The period from 1929 to 1932 needs to be examined in some detail, partly so as to be able to find some past points of reference in order to place the early 1980s into a clearer context, and partly because the slump marked a crucial transition in the inter-war period.

4.3 The Slump, 1929-1933

(i) An Outline of the Geography of Slump

The situation at the onset of slump was one in which unemployment stood nationally at around 10% but with much higher rates of unemployment in various of the peripheral regions. In June 1929, measured unemployment stood at 5.0% in London, but as high as 17.9% in Wales, 14.2% in Northern Ireland, 12.8% in the North West, 11.1% in Scotland and 12.7% in the Yorkshire and North East region. As a result of the contrasting trends between accumulating unemployment and job loss in the periphery, and rapid employment growth in the core, regional contrasts in unemployment were considerable.

The slump intensified the problems considerably. Between mid-1929 and mid-1930 insured employment fell by 436,000, with 150,000 jobs being lost in the cotton industry, and a further 84,000 jobs being lost in other textile industries (Table 4.18). In 1930-31 another 429,000 jobs were lost but in this year the main industries of job loss were coal (146,000 jobs lost) and shipbuilding. In 1931-32, employment fell by 98,000, spread across a number of sectors, while 1932-33 was a year of recovery.

Rates of change of employment have been roughly comparable over the two slumps, 1929-32 and 1979-82; in the 1930s slump, employment fell by an estimated 9.2% (mid-1929 to mid-1932; Table A4) whereas in the 1980s slump, employment fell by an estimated 9.6% (mid-1979 to mid-1982; Table 7.2). In either case, employment tended to fall substantially in the industrial sectors (which are taken to include construction and extractive industries, as well as manufacturing) while employment in services remained fairly stable (Tables 4.18, 7.2). If one adds to this the factor that unemployment rates were not too dissimilar at the start of the slump, somewhere between 6% and 8% (taking into account concealed employment in 1979 and the inter-war inflation of unemployment rates; chapter 3.5) then there is considerable scope for comparison between the post-1929 slump and the post-1979 slump in the UK. Chapters 7 and 8 analyse the post-1979 slump in detail, but some of the more central results of this analysis are introduced in advance here, in order to place the early 1930s into a clearer perspective.

There are many similarities in the geography of recession between the two slumps. Employment remained fairly steady throughout Southern England in both slumps, with employment actually increasing through the slump in many places. If anything, however, the post-1979 slump was slightly more severe in Southern England than the post-1929 slump, with substantial job losses taking place in the South in 1980-81 (Table A6).

The effects of the 1929-32 slump were concentrated in the industrial areas. Table 4.19 gives figures for employment change by county from 1929 to 1932, and allows a closer examination to be made. The quality of data is not sufficient for a detailed classification to be made of counties by types of response to slump, as undertaken for the 1978-81 period in chapter 8 below. It is however, possible to make some broad distinctions.

Four counties, Monmouthshire, Durham, Glamorgan and Cumberland, showed exceptionally severe response to slump. In each of these counties, insured employment fell by over 20%. Three of these counties (Monmouthshire, Durham and Glamorgan) were specialised coal producing counties, which for the second time in less than ten years suffered the effects of a major decline in the markets for coal. Employment in coal mining fell by 29% nationally between 1929 and 1932, and, as in previous years, any area with a high proportion of employment in coal mining was liable to be badly affected. In some areas, generally in the more remote parts of coalfields (West Durham, the Welsh valleys) the rate of decline in coal mining employment was exceptionally severe, in places which furthermore had no significant alternative industrial development. In the Rhondda and Port Talbot (Glamorgan) for example, employment in coal mining fell from 52,800 in mid-1929 to 31,200 in mid-1931,[56] a fall of 40.8%. Parts of County Durham had similar problems, with the west of the county suffering considerably more than the 30.6% drop in coal mining employment registered in the coalfield as a whole.[57] The problem with these coalfields however was not merely that the rate of employment decline in coal mining was worse in the exporting coalfields than in other coalfields, but, as in 1924-25, also that the proportion of employment in coal mining was much higher in the exporting coalfields than elsewhere; this question will be considered in more detail when a regional shift-share analysis is conducted at a later state (section 4.3(iii)).

Cumberland, the fourth county to be exceptionally severely affected by slump was, in its western industrial zone, a local economy specialising in the iron and steel industry, with its coal mining geared in part towards iron and steel, and in part towards serving the Irish market for coal.[58] The metal manufacturing industry, dominated by iron and steel, was in severe recession during the slump, with employment falling by 36% between 1929 and 1932. Clearly, any area which specialised in this industry was likely to be in deep economic trouble, even though in the later recovery employment in metal manufactures expanded very quickly (77% between 1932 and 1937). The Cumberland coast was such an area; out of a total employment level in all industries of 46,800 in 1929,[59]

1,700 jobs were lost in coal mining between 1929 and 1931, 1,000 jobs were lost in steel smelting, 700 more in blast furnaces and 700 more in iron ore extraction,[60] a total job loss of 4,100. These figures do not include events in 1931-32, in which year, according to Beck (1951, Table 17), perhaps twice as many jobs were lost as in the previous two years put together.

All four counties considered so far shared important common characteristics which left them exceptionally vulnerable to slump, and to high rates of unemployment. They had high degrees of concentration of employment in certain particularly vulnerable industries, and a relative lack of high order service centres to help stabilise employment levels. In South Wales the problem was a very high degree of dependency on coal mining. In Cumberland, the iron and coal industries were the problem, while in County Durham, there were difficulties in coal, shipbuilding and iron and steel. It is quite possible, of course, for other areas to have been exceptionally vulnerable, without this necessarily showing at the county scale; for example, the coal and steel area of Southern Yorkshire had severe difficulties, with unemployment reaching 44.6% in Barnsley in 1932, 34.0% in Sheffield, 33.0% in Rotherham and, across a county boundary, 30.6% in Chesterfield, while in Scotland, unemployment reached 30.7% in Glasgow in 1932.[61]

The worst affected areas in the 1929-32 slump were depressed to an extent which has not been matched in the post-1979 slump. The main industrial areas of the periphery and the Midlands had rather lesser rates of decline in employment, ranging from 6% to 16%. If allowance is made for the fact that the 1978-81 figures for employment change by county (Table 7.4) include a non-slump year (1978-9) and exclude a slump year (1981-2), and also for the likelihood that the exlusion of non-insured sectors of the workforce from inter-war statistics probably increases measured cyclical volatility, then the range of experience in the industrialised counties in the two slumps would appear to be broadly comparable, South Wales, Durham and Cumberland excepted.

There was, however, a definite tendency for the industrial counties of the periphery (Northumberland, Yorkshire, Lancashire, also Scotland and Northern Ireland) to exhibit much higher rates of job loss than the Midlands (Northamptonshire, Worcestershire, Derbyshire, Warwickshire, Leicestershire, Nottinghamshire, Lincolnshire, Shropshire), although Staffordshire had a high rate of job loss, due principally to the depression in the pottery industry, in which unemployment in North Staffordshire stood at around 40% in late 1930 and early 1931.[62]

One of the more surprising features of Table 4.19 is that the rate of job loss in Lancashire during the slump was not considerably

higher than the 11.4% measured between 1929 and 1932. In 1930 unemployment in the North West region increased faster than anywhere else as a result of the severe recession in the cotton industry, and yet Lancashire, at the heart of the cotton industry, appears to have had only a slightly higher rate of job loss than the UK as a whole. Table 4.20 shows that 140,000 jobs were lost in the Lancashire cotton industry between 1929 and 1931, leaving unemployment in the industry standing at over 40%, and at 50.6% in the last quarter of 1930.[63] The cotton industry also accounted for a substantial proportion (over a quarter in 1929) of total employment in Lancashire. In industries other than cotton, employment can be calculated to have fallen from 1,146,000 in 1929 to 1,072,000 in 1931, a fall of 6.5%,[64] which is in line with the total rates of job loss recorded in Midland counties (Table 4.19).

The general problems of the industrial areas were largely the problems of their main industries; declining employment in coal in Durham and South Wales,[65] in cotton in Lancashire,[66] in wool in West Yorkshire,[67] in iron and steel in, for example, Cumberland,[68] and in shipbuilding on, for example, Clydeside[69] or the North East coast.[70] The main industries of the Midlands were generally not so prone to recession, and the rate of employment decline was lower. The relative favourability of the industrial structure of the West Midlands will be illustrated in a later shift-share analysis (Table 4.21).

The South of England was generally undepressed. The effect of the slump was more to delay London's rapid economic growth than to cause any element of substantial job loss. Table 4.1 shows that before 1929 growth in London was steady, with employment increasing by about 3% per annum, while after 1932 employment growth in London also averaged 3% per annum; during the slump, however, employment remained merely stable. This is not to suggest that the process of suburbanisation, such an important feature of London at this stage[71] was in abeyance, since Table 4.19 shows that the growth of the insured population of the counties of Middlesex, Essex, Hertfordshire and Surrey was spectacular even during the slump.[72] The point is, however, that for a brief period this decentralisation was not associated with employment growth in the London urban system as a whole (city plus outer suburbs).

Outside the immediate sphere of London, employment in Southern England remained generally steady, although Suffolk and Gloucestershire each had a substantial degree of job loss. The general impression is that areas closer to London (e.g. Cambridgeshire, Sussex, Berkshire, Bedfordshire) had better employment performances than more distant counties (e.g. Norfolk, Wiltshire, Oxfordshire, Cornwall) but the correspondence is far from perfect.

The general pattern of employment change in the slump was for recession to be severe to extremely severe in areas with concentrations of employment in the most vulnerable industries, these areas being primarily in Northern England, Scotland or Wales, for recession to be moderately severe in the Midlands, and to be relatively light in Southern England, where employment levels remained generally stable (apart from a powerful decentralisation of employment to the London suburbs). As Table 4.19 shows, however, unemployment increased substantially in all areas, even those which gained in employment; comparison with Table 7.4, covering the 1978-81 period, suggests that this is normal during a slump, and indeed it would seem to be normal during any recession. Areas in which employment is declining sharply are not likely to attract many immigrants, while residents are more likely to search for work elsewhere as a result of unemployment and of low possibilities of alternative local employment. Conversely, areas with expanding employment during a slump, especially if they are areas of low unemployment before the slump (Middlesex, Surrey, Sussex, etc.) are likely to be especially attractive to potential migrants and will also be effective at retaining their existing resident population. A substantial net flow of immigration results, swelling the local workforce beyond the level at which full employment can be maintained, and thereby forcing unemployment up. It is suggested in chapter 7.2 below that for the period 1978-1981, changes in unemployment rate were highly insensitive to changes in the level of employment for counties with a low rate of job loss, or with employment gain, and that such counties generally increased in unemployment by 4 to 5 percentage points, whether employment fell by 2% or increased by 9% (Fig 7.3). This type of relationship also existed in the 1929-32 slump. Twenty-four counties in England and Wales are identified as showing employment growth, or employment decline of less than 2.5%. Twenty of these counties showed an increase in unemployment of between 5.8 and 9.6 percentage points, with there being only a slight tendency for the rate of unemployment increase in these counties to correlate with the rate of job loss.

Amongst counties with a higher rate of job loss, the rate of unemployment increase correlates more closely with the rate of job loss, although, as in the 1978-1981 period, it generally takes an additional 2% drop in employment to increase unemployment by a single extra percentage point; this is shown by the gradients of the lines in the left hand part of Figs 4.1 and 7.3. This is interpreted as meaning that the rate of leakage of the labour force from depressed areas, through net emigration, is primarily dependent on the rate of job loss in each depressed area, and only secondarily dependent on the distance between

depressed areas and prosperous areas, although South Wales shows a slightly lower increase in unemployment for a given level of job loss than do the more remote areas of North East England or Cumbria.

Areas of exceptionally high rates of job loss are thus areas of very high unemployment and also heavy net emigration. These features of the labour market may be said to have dominated social life in the depressed areas, in some ways which were obvious, and some which were less obvious.[73] There was great poverty, of course, while the migratory process left the structure of the remaining population unbalanced by age, as the younger more footloose members of the population migrated, while the older, less mobile members of the unemployed workforce stayed at home.[74] Conditions of industrial decline tend to create a niche in the labour markets for the expansion of low paid service sector employment, particularly in the more prosperous areas. This is a process which can be noted in the 1970s and 1980s (chapter 6 below) as in the 1920s and 1930s, although in periods of full employment employment in the personal sector services tends to be squeezed out by industrial growth. The relevance of this for the depressed areas at the time of the slump, and afterwards, was that the rate of transference of juvenile labour to the Midlands and the South was very high, to meet the demand for employment in domestic services, hotels and catering, and other service industries. In an extreme case, the Commissioner for the Special Areas, Captain Euan Wallace, noted in 1934 that "Durham girls have now acquired such an excellent reputation as domestic servants that the demand exceeds the supply, and in some villages it has been found that almost every girl over the age of fifteen has left the village and found employment elsewhere."[75]

The problems of extremely high levels of unemployment in the depressed areas persisted through the 1930s. It would have been surprising if such problems had not persisted; even under extremely favourable conditions of economic growth, an unemployment rate of 40% takes a very long time to disperse. The fast rates of employment growth after 1932 helped reduce levels of unemployment, but a 25% growth of employment from a basis of 40% unemployment still leaves 25% unemployment (more if population growth is taken into account). Such high background rates of unemployment create a sizeable economic incentive for at least part of the population to migrate, but the level of migration was limited by the extent to which the more prosperous areas had less than full employment. The prospect for many was not one "of moving to the certainty of a job in London or Birmingham, but rather of moving from a permanent dole queue at home to the back of the employment queue in a strange place."[76] In 1927-28, with 314,000 unemployed in the South and Midlands, (June 1927),

but static employment in these regions taken together, net inter-regional migration stood at 163,000, whereas in 1934-35, with substantial employment growth in the core regions, but as many as 632,000 unemployed there, net inter-regional migration stood at only 65,000.[77] High unemployment in the core regions makes it more difficult for unemployment in the periphery to fall.

The high levels of unemployment which persisted in the periphery through the 1930s are emphatically not due to a general depression lasting *throughout* the 1930s, but rather resulted from exceptionally large scale accumulation of unemployment between 1929 and 1932, and also from the job losses in coal mining in earlier years. It generally takes more than simply a post-slump recovery to remove such high levels of unemployment. Section 4.4 below covers in more detail the processes of post-slump recovery. Prior to this discussion, more attention needs to be given to structures of slump.

(ii) A Shift-Share Analysis, 1929-32

The high rates of job loss in much of the periphery can be explained largely by "structural" factors; the high pre-existing concentrations of employment in vulnerable industries. Contemporaries were generally agreed[78] that regional differences in employment performances were due not to the North performing worse than the South in either the "expanding" or the "declining" industries, but were due rather to the rather lopsided geographical distribution between expanding industries, which were predominantly located in the South, and declining industries, which were predominantly located in the North. The statistical analysis which generated such a conclusion was mostly based on comparing the performance of "Inner Britain" and the "Outer Regions" in specified industrial sectors[79] with little attempt being made to disaggregate to a finer geographical level. It is, however, possible to conduct a rudimentary shift-share analysis on post-1929 data, based on a 30 industry, 9 region, classification. Beck (1951, Table 14) presents index numbers for employment in 30 industrial sectors for each year from 1929 to 1939, and although these sectors account for only 71.4% of total insured employment (7.8 million out of 10.6 million insured jobs) the range of industries involved is sufficient to ensure that the results are reasonably, though not totally, representative. As a result of the partial nature of the data, structural shifts do not sum to zero, even when the size weighting of regions is taken into account.

A shift-share analysis is a standardisation technique which divides employment change in an area into a national component (representing the

national average rate of employment change), a structural shift (representing the degree to which an area would be expected to grow faster or slower than the national average as a result of the local sectoral composition of employment) and a differential shift (indicating that element of growth unexplained by the sectoral composition of a local economy). A more detailed account of the technique is presented in chapter 8 below.

It is clear from Table 4.21 that structural shifts dominated differential shifts between 1929 and 1932. The structural shifts measured varied from -9.3% in Wales to +7.7% in London, a range of 17.0 percentage points. In contrast, a shift-share analysis for 1978-81 gives a range of only 11.1 percentage points (from -5.3% in Gwent and the West Midlands to +5.8% in Grampian region) even though the finer spatial sub-division would be expected, all other things being equal, to increase the range of structural shifts. The process of local and regional specialisation in particular industries, characteristic of 19th century and early 20th century industrial development, was chiefly responsible for the unusually large variability in structural shifts in the inter-war period, but it should be recognised that the spatially unequal pattern of structural shifts results not only from the concentration of older declining industries in the North, but also from the concentration of newer industries in the South. London had such a favourable industrial structure that it even had a positive structural shift in manufacturing, a rare event in a deep industrial recession in which manufacturing employment tends to fall far more sharply than service sector employment. In the electric cable, apparatus and lamps, etc., sector, employment grew by 13.8% between 1929 and 1932, while London had over half the total national employment in this sector (47,000 out of 89,600 in 1929). In the printing, publishing and bookbinding sector, which was relatively immune to slump, London's share of total national employment was 101,300 out of 241,100; employment grew in this sector by 2.0% between 1929 and 1932. Between them, these two sectors accounted for a positive structural shift of 21,200, or 1.0% of London's total insured employment in 1929.

Differential shifts ranged from -4.7% in Northern Ireland to +4.7% in the South East, a range of 9.4%, whereas the range in 1978-81 for groups of counties classed according to similarity of response to recession (Table 8.7, and discussion in chapter 8) was from -5.6% to +8.5%, a total range of 14.1%. It would seem that while the range of differential shifts has been broadly comparable in each slump,[80] the range of structural shifts was much greater in the earlier slump. In assessing the geography of employment change between 1978 and 1981,

considerable attention needs to be paid to differential shifts, as these are strong in relation to structural shifts. In the 1929-1932 slump, slightly less attention needs to be given to differential shifts, not because they are smaller in relation to total employment than in 1978-81, but rather because they are smaller in relation to the structural shifts in the earlier slump than in the later slump.

Coal mining accounts for a large part of the regional unevenness of structural shifts, and also, as Table 4.21 shows, a not negligible part of the differentiation in differential shifts. The large negative differential shift in Wales (-4.0%) results chiefly from a considerably faster than average rate of decline in coal mining employment (-34.1% between 1929 and 1932, compared with -28.8% in the UK as a whole), while the negative differential shift in the North Eastern region (YNE) is likely to be accounted for primarily by events in the North East coalfield, rather than by events in the Yorkshire coalfield. A comparison of structural and differential shifts amongst coalfields again brings out the important point that the fast rate of decline in total employment in the main exporting coalfields was primarily due to there being a high proportion of employment in coal mining in these areas (a large negative structural shift) and only secondarily due to the tendency for employment in coal mining to decline faster in coastal coalfields than in inland coalfields (a negative differential shift).

It is an interesting exercise to try to eliminate statistically changes in coal mining employment from the shift-share analysis. Table 4.22 presents the results, with these effects excluded from the numerator, but not from the denominator (total employment) in order to assess what was happening outside the coal industry. The data presented are those which would have been found if each region had, instead of a coal industry, a completely "average" industry with no regional differences in the rate of employment change; multiplier effects, not being directly calculable, are ignored.

When such an exercise is carried out, the range of structural shifts is considerably reduced (from 18.0% to 11.2%), but there is still considerable regional differentiation. Part of the reason for the high positive structural shifts for Southern England in Table 4.21 was, quite simply, the absence of coal mining employment. With the effects of change in coal mining employment eliminated in all regions (Table 4.22) an interesting underlying pattern emerges. London is shown as having an exceptionally high positive structural shift, but a negative differential shift, accounted for by relative decentralisation to the South East region in the service sector (cf Table 4.21). The South East and South West regions are shown to have relatively weak, but positive, "underlying"

structural shifts (Table 4.22) and very strong positive differential shifts. This general pattern suggests a situation in which the favourable structures of the London economy generate considerable employment growth, but with much of this growth not taking place in London itself, but rather spilling over into surrounding areas. Such a picture is applicable to subsequent periods as well, but with changing balances between the amount of employment growth taking place in London and the amount taking place outside. After the slump, the bulk of this growth took place in London, but with London's continuous built-up area itself expanding rapidly (section 4.4 below). After the war, the balance tended to favour London's surrounding areas, rather than London itself,[81] with this tendency becoming stronger through time (chapter 5 below). By the 1970s, London's employment was in substantial decline, while surrounding counties, as far away as Norfolk or Suffolk, showed considerable employment growth, in part because of continued decentralisation from London, and in part because local employment structures generated in previous rounds of decentralisation became in themselves focuses of new "indigenous" growth. The pattern of relative growth and decentralisation in Southern England in the slump, as shown in Tables 4.21 and 4.22, can therefore be seen as representing part of a much longer term process.

Many of the patterns of change in the periphery were, in contrast, highly specific to the slump, and were not present when economic conditions stabilised after the slump. The North West, and the North East region (YNE) both had extremely severe negative structural shifts when coal mining is excluded from the picture. Wales, Scotland and Northern Ireland had, outside coal mining, only mildly unfavourable structural shifts, but highly unfavourable differential shifts, especially in manufacturing. Evidently, remoteness from the main UK markets would have made several of the industries of Scotland and Northern Ireland somewhat more vulnerable than would otherwise have been the case. The differential shifts involved were spread widely across sectors rather than concentrated in a few sectors, to indicate a general problem resulting from remoteness rather than an unusually severe degree of crisis in just a few industries.

In the North West, the cotton industry was reaponsible for the highly adverse differential shift. This industry accounted for a total differential shift of -76,600 (from an initial employment of 427,900 in 1929), or 4.1% of total employment in the North West. If coal mining is to be excluded from the calculations, to produce a set of figures compatible with Table 4.22, the differential shift would be calculated as -84,700, or 4.6% of the workforce. In either case, the cotton industry would account for a very large part of the North West's excess

vulnerability to recession.

The cotton industry in Britain was affected extremely severely by the slump, but the problems were in many respects those of a slump hitting an industry which was progressively becoming less competitive in world markets, rather than of declining world markets in the long term. Daniels and Campion (1935 pp.339-340) note that between 1924 and 1929, the world consumption of cotton goods increased by over 20%, and world trade by 5%. Britain, the foremost cotton goods producer, had *falling* production levels during this period; production fell by 6% and exports by 15%. In part, the problem was one of Britain being squeezed out of international markets by increasingly intense foreign competition, with the most intense competition coming from Japan, a low wage country. In addition, the disruptions to international trade brought about by the First World War meant that India developed her own cotton industry on a much larger scale, making it much more difficult for Lancashire to penetrate her most lucrative export market.[82]

The sharp fall in prices for cotton goods from January 1930 would have greatly affected profit margins, and output fell severely. The trough in the cotton industry came much earlier than for other industries, with the decline in production having virtually been completed by the end of 1930. In the first three quarters of 1931, production averaged 71% of the levels reached in the corresponding quarters of 1929,[83] but the departure from the Gold Standard in 1931, by reducing the exchange rate, gave Britain a considerable competitive advantage in cotton goods, and production started rising quickly, but not to pre-slump levels. However, as Daniels and Campion (1935 p.344) note, the departure of other countries from the Gold Standard meant that this advantage was temporary.

The Yorkshire and North East region also had a highly adverse industrial structure in the context of slump, and in fact registered the most unfavourable structural shift of any region apart from Wales. As Tables 4.21 and 4.22 show, this was partly due to a high concentration of employment in coal mining (much more so in Durham and Northumberland than in Yorkshire) and partly due to the sectoral composition of manufacturing being more vulnerable than anywhere else apart from the neighbouring North West region. It is not possible to identify a single manufacturing industry which is by itself primarily responsible for such an adverse shift; instead there were various industries in severe decline which each added a substantial component to the adverse structural shift, and which created intense local employment problems. The woollen industry, the iron and steel industry and the relatively small but intensely depressed shipbuilding industry were the main industries involved.

A shift-share analysis of UK employment change between 1929 and 1932 shows that the sectoral composition of the economy was extremely favourable in London, moderately favourable in the rest of Southern England, and generally unfavourable elsewhere, apart, perhaps surprisingly, from Northern Ireland. The structurally least favoured regions were those with high proportions of employment in such vulnerable industries as coal, cotton or iron and steel.

Differential shifts show, when the effects of coal mining are removed, a strong centre-periphery pattern, with large positive differential shifts in Southern England, a modest positive shift in the Midlands, mildly negative differential shifts in Northern England, and strongly adverse shifts in Northern Ireland, Scotland and Wales. Market accessibility is probably an important factor. The one exception to the core-periphery generalisation is that London showed a mildly negative differential shift, as a result of decentralisation of growth to surrounding areas.

It would seem that the geography of recession in 1929-32 in many respects resembled the geography of recession in the post-1979 slump; this applies particularly to the patterns of differential shifts. The most important difference is that in the post-1979 slump, local economic bases have tended to be far more diversified than in the inter-war slump, so that there had recently been far less of a problem with certain regions having employment structures *dominated* by severely stricken industries, when compared with the slump of the early 1930s.

(iii) The Accumulation of Unemployment at Various Stages of the Slump

The analysis so far has concentrated on making comparisons between the beginning of the slump and the end of the slump. The slump itself was of course far from being a homogeneous period, and, as emphasised in chapter 2, important distinctions can be made between the early slump and the late slump. In the early slump, after a period with mildly recessionary trends (the "proto-slump" of late 1929) jobs are lost very quickly and unemployment shoots up. Such a phase can be said to have lasted until about January 1931. The late slump can be regarded as lasting from early 1931 until either the Summer of 1932 or the Spring of 1933, according to definition. Unemployment tends to continue to move upwards during such a period, but the rate of increase is slight (from 21.5% in January 1931 to 23.1% in August 1932). The period of late slump may be regarded as being one of secondary recession; the violence of the economic fluctuations in the early slump lead to a situation in which the

economy is so disjointed that a cyclical downswing is followed not by an upswing, but rather by a fresh but moderate recession. Table 4.18 suggests that in the late slump, the crisis in the worst affected industries in the early slump will have passed, with the rate of job loss slowing down considerably, in, for example, cotton, other textiles, coal mining and iron and steel. Employment in textiles was even increasing from late 1931 with the reduction in the value of the pound sterling. The generally weak levels of overall demand meant that the recession continued in other sectors however; between 1930-31 and 1931-32, the level of job loss in the five main depressed sectors fell from 333,000 per annum to 20,000 per annum, whereas in all other sectors, the rate of job loss fell from 96,000 to 78,000 per annum. The contrast in the percentage rates of decline is perhaps even more striking; in the category "all other sectors" (everything except coal, textiles, iron and steel and shipbuilding) the rate of employment decline remained fairly steady at about 1% per annum between 1929 and 1932, while in the five depressed sectors employment fell by 14% in 1929-30, 16% in 1930-31, and 1% in 1931-32.

Space does not allow for a detailed narrative of the 1929-32 slump to be presented here; chapter 7, however, provides a closer analysis of the structure of slump in the post-1979 recession. It should be evident, however, that the spatial patterns of accumulation of unemployment during the slump will bear a close relationship with the dominant patterns of job loss during the slump.

Table A7 presents monthly figures for unemployment by region, while Table 4.23 attempts to summarise what was happening across slightly longer spans of time. The situation at the beginning of slump was that unemployment stood at about 20% in Wales, about 15% in Northern England and Northern Ireland, about 12% in Scotland, 9% in the South West and the Midlands, and less than 7% in London and the South East. It needs to be seen how these figures were modified during the slump.

In the very early stages of slump, employment stayed steady in Southern England, but fell in the remainder of the UK (cf Table A6). Between November 1929 and June 1930, unemployment hardly increased in Southern England, but rose sharply elsewhere, and particularly in the North West region, where the cotton goods industry was extremely depressed. In the space of seven months, unemployment in the North West increased by 226,000, or 10.4 percentage points, leaving the unemployment rate standing at 24.6% in June 1930. This increase in unemployment continued to the end of the year, with another 125,000 being added to the North West's unemployment register between June 1930 and January 1931, representing a further increase of 4.9 percentage points. Unemployment

in the North West then levelled off at about 30%, but in the critical early part of the slump, over a third of the national increase in unemployment was concentrated in one region.

The general situation in the very early part of the slump was that unemployment rose sharply in the UK as a whole, and exceptionally sharply in the North West, with "average", but very high, rates of increase in other coalfield industrial regions and a very slow rate of increase in the South. The index of regional unemployment inequality not surprisingly increased sharply during this period, standing at 3.6 in January 1930, reaching 5.7 in May 1930 and 6.9 in October 1930 (Table A8).

From October 1930 to May 1931, the index of regional inequality in unemployment decreased in value slightly, but without any particularly marked convergence of unemployment rates taking place. In the summer of 1931, this index started to increase again, reaching a peak value of 7.3 in September 1931, just before the UK abandoned the Gold Standard. There was a general tendency, it seems, for regional unemployment inequalities to increase during this period, but the timing of changes is perhaps influenced by seasonal factors; the seasonal peak of production of coal comes in the winter,[84] making normal seasonal fluctuations of employment less powerful in the coalfield regions.

As far as individual areas are concerned, the places with the largest increases of unemployment were, in regional terms, the North East region (YNE), Scotland and Wales (June 1930-September 1931) and, in county terms, Durham (unemployment up from 21.9% in June 1930 to 36.2% in June 1931) and Glamorgan (an increase from 27.2% to 41.0%).[85] This is a clear indication that recession had passed from a "cotton phase" to a "coal phase", an impression confirmed by Table 4.18, but with the additional point that iron and steel and shipbuilding, two smaller industries, also moved into severe depression.

Employment continued to remain steady in the South of England, but unemployment started to increase substantially as a result of the swelling of the local labour force through an intensification of net migration flows. In London, unemployment stood at 7.4% in January 1930, 7.3% in June 1930, but 12.2% in January 1931, an increase in unemployment still less than the national average but faster than one might have expected on the basis of the slightness of the fall in employment in London.

By September 1931 unemployment had reached a peak, with the UK unemployment rate reaching 23.2%, with 34.4% unemployment in Wales and around 30% unemployment in each of the other peripheral regions. In the next few months, unemployment continued to rise in Southern England, but fell in each of the peripheral regions, to 31.7% in Wales (December 1931)

and around 25% in other peripheral regions. Unemployment in the Midlands fell from 21.8% to 19.3% in the same period.

This suggests a marked improvement in the economic fortunes of the industrial areas, even if, a few months later, unemployment in these areas went up again. Ironically this improvement came about as the after-effect of a financial crisis; in the Summer of 1931 a lot of 'hot' money was withdrawn from London, forcing the Treasury to seek foreign loans, these loans being on condition of the implementation of Government financial stringency, including severe cuts in unemployment pay.[86] The minority Labour Government was deeply divided about whether to accept these conditions,[87] with the part of the Government favouring the cuts joining the Conservative Party in a "National" Government.[88] The series of loans and cuts were unable to consolidate the position of sterling, and on September 20th the Bank of England was forced off the Gold Standard.[89] Within ten days sterling had depreciated by 18%, and that by the end of the year the pound stood at $3.40, compared with $4.86 beforehand.[90] The pound also depreciated strongly against major European currencies.

A devaluation of the currency is of course a standard method of increasing the industrial competitiveness of a country, but it needs to be emphasised that despite an extremely severe industrial slump, industrial considerations played very little part in the decision to come off the Gold Standard. "The bankers and the Governments concerned were not trying to increase employment or to salvage industry, but merely to right the unbalances of the budget, trade and credit. Likewise, the solution to be imposed by the British Government was, yet again, as in 1914 and in 1925, the one demanded by the City."[91] "Even in its decision to come off gold, the Bank of England's chief concern was not to gain advantages for British export trade by exploiting the new situation, but to conserve the international utility of the London money market."[92]

Accidentally, therefore, the Government finally adopted an economic policy which favoured industrial employment. More often than not, the adoption of a set of economic policies constructed in favour of City interests has had damaging effects on British industrial performance, a feature which has been strongly marked since 1979, and also in earlier periods.[93]

It is in fact difficult to assess quite what was happening to levels of unemployment in the industrial regions in late 1931, since restrictions in the condition of receipt of unemployment benefit, and alterations in the method of reckoning the number of unemployed, had a considerable effect on measured unemployment levels.[94] The restrictions involved were imposed as part of a general deflationary financial package, and the beginnings of the statistical effects were felt in October 1931.

It is estimated[95] that between October 1931 and May 1932 these administrative changes had reduced the unemployment register by 180,000 to 190,000, but it is not clear quite how the effects of these changes were distributed over time and space.

Measured unemployment in the peripheral regions fell by 96,000 (from a total of 1,935,000) between September 1931 and October 1931, by 85,000 in the following month, and by 80,000 between November and December, before rising again. This is a period in which one would theoretically expect a fall in unemployment in industrial regions, as a result of devaluation, and the extent of the fall exceeds any allowance which needs to be made for changes in the unemployment benefit regime. The index of unemployment inequality fell sharply from 7.3 in September 1931 to 5.2 in December 1931, and 5.0 in March 1932, with this fall being concentrated in the months immediately after the effective devaluation. The Cn index of unemployment inequality is arguably less open to the influence of changes in the unemployment benefit regime than are the raw unemployment figures.

The removal of the Gold Standard gave a considerable temporary boost to industry, but unemployment started to increase gradually from March 1932. In Wales, unemployment came very close to reaching 40%, while unemployment in the other peripheral regions ranged from 27.5% to 31.0% in August 1932. The revival of the cotton industry (cf Tables 4.18, 4.20) meant that at this stage, in contrast with the early part of the slump, the North West had a lower rate of unemployment than other peripheral regions.

Unemployment was still over 22% in early 1933, but fell rapidly through the year, as recovery gathered pace. The next section looks at the geography of the recovery phase in more detail. The question is one of what is likely to happen to an economy with very fast growth in all regions, but nearly 40% unemployment in Wales, nearly 30% unemployment in other peripheral regions, 20% unemployment in the Midlands and about 15% unemployment in the South.

4.4 Recovery, 1932-1939

(i) Patterns of Employment Growth

The period from 1932 to 1939 is, in the theoretical terms advanced in chapter 2, a very clear example of a post-slump recovery. From a situation of high unemployment, economic growth was very fast in all major industrialised economies except France,[96] and unemployment was falling. It was suggested in chapter 2 that such a post-slump recovery represented a major step on the path back to full employment. An extrapolation of trends, even allowing for a likely deceleration of the growth rate, suggests that in the absence of war full employment might well have been reached at some stage in the mid-1940s. One of the main reasons why a post-slump recovery is likely to be more durable than a cyclical recovery in a long cycle downswing is that substantial overcapacity would already have been removed from declining industries in the slump, making future reductions in capacity unnecessary for a while, and also reducing the weighting of sectors of slow growth or decline on aggregate economic performance. Another, more positive, feature is that the high rates of growth in the rebound from a slump encourage the development of new industrial systems, with positive long term dynamic effects.

The inter-war period was unusual in that in effect it had two "slumps", each followed by a period of substantial economic growth. Both after the 1920-22 "slump" and after the 1929-32 slump there were phases of rapid development of new industries,[97] but whereas in the earlier period such growth was often offset by intense recession and unemployment in older industries, in the later period the position of the older industries had stabilised. One highly important feature of this was that while in the 1920s the main industrial areas were largely excluded from the "post-slump" recovery, in the 1930s the economic recovery affected the North just as much as the South. Table 4.10 emphasises this; in both "recoveries", employment increased substantially in the South, but in 1923-29, overall employment remained static in the North, while increasing strongly between 1932 and 1939.

The traditional distinction[98] between a rapidly growing South and a stagnant North, while being applicable to the events of the 1920s, is inadequate in explaining patterns of regional economic development after 1932. The argument presented in this section is that the high rates of unemployment which persisted in the periphery during the 1930s were *not* due to a slow rate of growth in the economic recovery, but were rather due to exceptionally high degrees of employment generated in the

depressed areas during the slump. In general, a high rate of unemployment is often likely to be explained by the persistent after-effects of events long past; current economic conditions explain the *rate of change* of unemployment, and not the level of unemployment itself.

Regional employment figures (Table 4.24) show that during the recovery period from 1932 to 1939 employment growth was very fast, but from a depressed base, in the Northern region, and to a slightly lesser extent in Wales, very fast, but from a relatively prosperous base, in the Midlands, slightly above average in Yorkshire and Scotland, average in Southern England and relatively slow in Northern Ireland and North West England. The fact that the rate of employment growth in Southern England was merely average is highly damaging to an interpretation of the period along "expanding South-stagnant North" lines. These figures also throw open the question of whether the highly influential Barlow Report (Royal Commission, 1940) was correct in placing so much emphasis on the industrial growth of London.

The Barlow report, when discussing London's industrial development in the 1930s[99] notes that in a period in which the average number of persons employed in the United Kingdom fell by about 66,000, the number in Greater London increased by 200,000, and also notes that of the net increase of 644 factories in Great Britain, 532 were in London. This would appear at first to be very strong evidence of London's domination, but the figures need to be examined more closely. The conjunction of large-scale employment growth in London and net decline elsewhere is based on a comparison of the Censuses of Production in 1930 and 1935. The contrast noted between London and the rest of the UK would have been generated largely by highly uneven job loss in the slump, rather than by London's gain of employment in post-slump years. Had the Censuses of Production taken place in 1932 and 1937 instead, a different pattern might well have emerged.

The interpretation of the Board of Trade *Surveys of Industrial Development*, published annually from 1933 to 1938, is more complicated. The Barlow Report presented a summary of these statistics, but a closer examination is required. One problem is that the surveys were conducted in such a way as to over-represent industrial activity in London, compared with the rest of the country. Great Britain, for the purposes of the survey, was divided into 41 areas, and the numbers of factory openings, extensions and closures in each area was recorded. This would not appear to cause any great problem, until the question of industrial *movement* is considered. In the Board of Trade surveys "transfers of factories within the same area have, as a general rule, been ignored, as amounting to more than a local change of address." (Board of Trade, standard

phrasing). If however transfers take place across boundaries of local areas, then both the closure of the old factory and the opening of the new factory are recorded. The designated areas were however extremely uneven in size, with London split into eight areas, and Scotland and Wales each being regarded as single areas. This leads to the anomalous result that a factory movement from (for example) Edinburgh to Glasgow is regarded merely as a "local change of address" and is not recorded, whereas a factory movement from (for example) Hammersmith to Park Royal is recorded in the statistics. While this does not affect greatly figures for *net* changes in the number of factories in any region, it might affect considerably the figures for the number of people employed in new factories in such a way as to exaggerate the importance of London in the generation of industrial employment.

The Barlow Report (pp.166-167) notes that the amount of employment generated by new factories opening between 1932 and 1937 stood at 97,700 in Greater London compared with 253,000 in Great Britain. The employment level in the new factory was taken at the end of the calendar year after the factory opened. The comment is then made that "the new factories within Greater London have provided almost two-fifths of the employment provided by all new factories opened in the whole of Great Britain. In connection with that fact it has to be borne in mind that Greater London contains ... just over one-fifth of the insured population."[100] When, however, allowance is made for the relative over-statement of employment created in factories opened in London, this disproportion becomes less impressive.

Table 4.25 extends these figures on a region-by-region basis. It seems possible to divide Britain into areas which were over-represented in new industrial development in the recovery and those which were under-represented. London, the Midlands and the North West had relatively large numbers of new factory openings, while the North East, Wales, and Scotland had relatively low numbers of new factory openings. The disproportion in Scotland, though at first glance striking, is probably much exaggerated for the statistical reasons mentioned earlier.

Possibly the most interesting feature of Table 4.25, though, is the relatively small number of factory openings and extensions taking place in Southern England *outside* London. When London and the rest of Southern England are taken together, the disproportion between the level of industrial development in the South and the amount of development in the rest of Britain is seen to be relatively small. There seems to be a strong suggestion not so much that London was taking the lion's share of national industrial development, but rather that it was taking the lion's share of the industrial development *of the South of England*. One area

was particularly favoured; the North of London, and within the northern suburbs, North-Western London. Thus of the net increase of 388 factories in outer London between 1934 and 1937, 216 were situated in the North and West of London, with a further 97 in the North Eastern sector, and only 75 in the southern suburbs.[101] This represented the most favourable orientation possible for national markets. There was much industrial migration into the North West London growth belt in the 1930s, while in the post-war years this part of London was to become the source region for much industrial migration, both to the new towns (and the rest of the outer metropolis) and beyond.[102]

Tha analysis can be extended by examining regional patterns of employment change by county between 1932 and 1937 (Table 4.26). The counties with the largest percentage increases in employment were those on the suburban fringes of London, both those actually containing part of the continuous built up area, and those (e.g. Buckinghamshire, Bedfordshire) at a slightly greater remove. Figures for Surrey might at first appear to be abnormally low, with employment increasing by only 15.8% between 1932 and 1937 (compared with the UK average of 23.8%), but Table 4.26 omits the very significant employment growth which took place in the London suburbs in 1931-32. In Surrey, for example, employment grew by 18% in this year, according to Beck, while the figures for Middlesex and Essex were 38% and 32% respectively.

Such spectacular growth rates in the London suburbs might appear to accord with the contemporary perception[103] of the dominance of the South rather than with the thesis of a regionally fairly even pattern of growth, as presented here. A closer examination of Table 4.26 shows, however, that large parts of Southern England were experiencing only relatively slow employment growth. Excluding Surrey from the calculation, eight out of the ten counties with the slowest rates of employment growth nationally were in Southern England. These included not just remoter rural counties such as Devonshire and Norfolk, but also counties close to the London growth zone, such as Sussex and Berkshire. It becomes statistically understandable why Southern England should have registered only moderate growth rates during the recovery, when the contrast between "inner South" (London's expanding suburbs) and "outer South" is taken into account.

Table 4.27 attempts to focus more closely on the patterns involved, taking account of absolute changes in the levels of employment as well as percentage changes. In addition, account is taken of the often very substantial increases in employment in certain counties in the latter part of the slump, which affected particularly strongly the counties immediately surrounding London.

When the *number* of jobs created is taken into account, the contrast between the almost explosive growth of London and its suburbs, and the slow growth of the outer South, is even more starkly revealed. In the upswing, about 1,300,000 jobs sere created in Greater London, Middlesex, Essex, Kent and Surrey, with a further 80,000 jobs being created in Hertfordshire, Bedfordshire and Buckinghamshire. In contrast, the combined increase for Cornwall, Devon, Somerset, Dorset, Wiltshire, Cambridgeshire, Norfolk and Suffolk was around 90,000, or roughly the same number of jobs gained as in County Durham in the same period.[104] Most of these Southern rural counties had relatively low rates of job loss during the slump, however (Table 4.19), so that by 1937 they were close to full employment. The rapidly expanding suburban counties were of course generally even closer to full employment (Table 4.27).

A four-fold classification of Southern England in the mid-1930s may be suggested on the basis of Table 4.27 with

(1) London and its suburban fringes (e.g. Middlesex, Essex), characterised by extremely rapid growth

(2) A northern outer metropolitan zone of rapid growth from a low base (e.g. Hertfordshire, Bedfordshire)

(3) Counties with high degrees of urbanisation not primarily dependent on London, with growth rates around the national average (e.g. Hampshire, Gloucestershire)

(4) Other counties, generally remote from London and predominantly rural, with generally slow growth (e.g. Dorset, Cambridgeshire).

There seems to be a considerable concentration of employment growth around major urban centres in Southern England, and in the northern outer metropolitan zone, which had the same advantages of orientation to national markets as the North London suburban zone. In effect the northern outer metropolitan zone may be regarded as the overlap between London and the Midlands, with considerable expansion of employment in vehicles sector taking place in Oxfordshire and Bedfordshire, for example. Outside the favoured areas, employment growth was slow.

In the Midlands, employment growth was concentrated in the West Midlands conurbation (Table 4.28), with 164,000 jobs being gained in Warwickshire and 123,000 jobs in Staffordshire. Growth rates were generally around the national average in other parts of the Midlands, although Northamptonshire had a high growth rate from a small base, and Worcestershire (with Herefordshire) and Leicestershire showed distinctly slower than average growth rates. The high measured growth rates for the Midlands during this period (Table 4.24) thus are not the result of high growth rates in all parts of the region, but instead result primarily from the very fast expansion of the conurbation, which in

itself was largely the result of the expansion of the car industry. Between 1932 and 1936, sales of cars by UK firms doubled, but it also needs to be recognised that the motor industry had been considerably affected by the 1929-32 slump.[105] A considerable proportion of employment growth in the vehicles industry, and related industries, after 1932 would thus represent a post-slump rebound, rather than a genuine extension of the motor industry. Even with this proviso, the long term expansion of the motor industry provided a considerable boost to the West Midlands economy, with Coventry in particular becoming a 1930s boom town.[106]

Cars, and motor vehicles in general, are expensive to purchase and complicated to produce, requiring several different types of production in order to create the finished product. These two features would tend to imply the desirability at this stage of a location which firstly, is accessible to the most prosperous and largest consumer markets, and secondly, has a strong tradition of industrial employment, particularly in the metal industries. The West Midlands conurbation had both these attributes, being close to the South East, and having a long industrial history based largely on metal goods.[107]

Table 4.29 shows, however, that it was not the case that the motor vehicle industry was gravitating to the West Midlands in the 1930s. On the contrary, employment grew much less rapidly in percentage terms in the West Midlands then in Southern England. The early growth of the industry took place largely in the West Midlands, and this early growth was the basis for the establishment of much new employment in vehicle-based industries during the recovery. There was, however, a very strong tendency for employment to increase rapidly in Southern England, in areas such as Oxford without strong local industrial traditions, but close to main national markets. This can be seen in terms of product life cycle theory, with production at a very early stage being concentrated in particular locations, in this case the West Midlands because of its favourable and diversified industrial structure, and later diffusing to other locations which as a result have higher proportionate rates of growth of the industry concerned. Vernon's basic model (Vernon 1966) suggests that new industries are concentrated firstly in high income areas and then diffuse to lower income areas.[108] In the case of the British vehicle industry, the early patterns of diffusion were from areas with the appropriate industrial traditions, close to high income areas, but without necessarily high incomes themselves, to high income areas which lacked the industrial traditions necessary to foster the early development of new industry.

Summarising the recovery in the South and the Midlands, one can

state that the dominant feature was the growth of the two main conurbations, London and the West Midlands, largely on the basis of newer expanding industries. The area between these two conurbations was also favoured in terms of attracting new development, with high employment growth rates in Oxfordshire, Bedfordshire, Northamptonshire, Buckinghamshire and Hertfordshire. Away from this growth belt, employment grew much more slowly, although more densely urbanised counties such as Hampshire and Gloucestershire showed higher employment growth rates than less urbanised counties.

Table 4.30 outlines employment change during the recovery in the peripheral regions. Employment in the depressed coal mining counties (Monmouthshire, Durham, Glamorgan, Northumberland) grew considerably faster than the national average, even though employment in coal mining remained merely static. It needs to be emphasised, though, that the increases in employment were by no means sufficient to bring these local economies near to full employment.

It is not immediately apparent why counties with exceptionally high rates of unemployment should have had fast employment growth, while counties with rather lower unemployment rates should have tended to have moderate or slow employment growth. A time profile of employment growth (Table 4.31) helps explain some, but not all, the issues.

In South Wales, employment growth was considerably slower than the national average up to 1936, but then a remarkable spurt of growth followed in 1936-37. This was a boom year nationally, with employment in the UK growing by 6%, but even by this standard, a growth of employment of over 20% in both Monmouthshire and Glamorgan is to be regarded as highly unusual. 49,000 jobs were gained in Glamorgan, according to Beck's figures, with a further 15,000 jobs being gained in Monmouthshire. These figures are so extreme that they need to be treated with a certain amount of suspicion; even so it is regarded as likely that there was still very substantial employment growth in South Wales in 1936-37, much faster than the UK average. In the recession of a year later, Monmouthshire and Glamorgan were however severely affected.

In the far North of England, there was a rather different time profile of recovery, even if overall growth rates were broadly similar. There was strong employment growth right through the recovery phase, and not just in 1936-37. Employment grew very substantially in 1936-37, though not as fast as in South Wales, and continued to grow even through the recession of 1937-38.

Much of the contrast in performance can be explained in terms of regional differences in industrial structure. South Wales was very much a coal mining area, with relatively little outside industrial development

other than in the iron and steel industry, and even this industry was at this stage small when compared with the coal industry, the main increases in employment and capacity taking place *after* 1945.[109] On the North East Coast, and in West Cumberland, by contrast, there were sizeable concentrations of employment in various industries which contracted very sharply during the slump, but also expanded rapidly thereafter. The shipbuilding industry, various engineering industries, and the iron and steel industries are clear cases. The post-slump rebound in these industries led to considerable local expansions of employment, although these were of course largely reactions to major declines in employment in previous years. In the later 1930s, the concentration of employment in shipbuilding and the heavier metal manufacturing and engineering industries, meant that the rearmament boom was felt stongly in the far North of England, with employment continuing to expand even through the 1937-38 recession (Table 4.31).[110]

This still leaved the problem of the Welsh expansion of 1936-37 to be resolved. The *Second Industrial Survey of South Wales*[111] was published too early to give any account of developments in the critical year. Fogarty (1945 pp.103-107) provides an account of this period, however. The development of trading estates was an important factor, with the Treforest Estate being founded in 1936, and other estates at later dates. The development of these estates, however, accounted for only about 2,500 jobs by the outbreak of war.[112] Another, very important, factor was that with the rearmament boom, not only was it necessary to expand production quickly in certain industries; it was also necessary to site as much of the expansion as possible in strategically safe areas, and South Wales was far away from the vulnerable East Coast. With general expectations amongst the population by this stage that war was inevitable, South Wales could be regarded as a highly attractive place for new industrial investment; factories were less likely to be blown up this far west. Fogarty (1945 p.103) notes that a number of new industries were attracted to South Wales in the last few years before the war, and also *during* the war, with the industrial structure of the area diversifying considerably. A new steel works was opened in Ebbw Vale in 1938, there was substantial development of the munitions industry on the coastal plain, and lighter, newer, industries were being developed virtually throughout the urbanised areas. It is also possible (see later discussion) that the beginnings of labour shortage in Southern England and the Midlands further encouraged these developments in South Wales.

The profile of employment change in Yorkshire closely matched the national average (Table 4.24), but in Lancashire the resumption of gradual employment decline in the cotton industry after 1933 meant that overall

economic performance was sluggish. The Economics Research Section, University of Manchester (1936) suggested that much of Lancashire, and particularly the heavily urbanised south, shared fully in the national recovery, but that in the coal mining area of Wigan and the cotton weaving districts of mid-Lancashire the recovery was slight.

Employment in the periphery tended to increase at roughly the same rate as employment in the core between 1932 and 1937, but there were considerable local differences in performance within the periphery. Slow growth often took place in precisely the areas which needed rapid employment growth to reduce unemployment, South Wales (up to 1936) and the cotton weaving district of Lancashire being the most notable examples. The dominant industries in these areas showed heavy declines of employment during the slump, but only slight gains in employment thereafter. Furthermore, the lack of any *large* cities in these areas, and the relative remoteness from the main national markets made these areas relatively unfavourable for the development of new industries before or after the slump.

Discussion now turns to the question of unemployment.

(ii) Patterns of Unemployment Decline

The level of unemployment by region in 1937 was strongly influenced by the regional patterns of unemployment in 1932. In section 4.3(iii) above, it was argued that the accumulation of unemployment in the slump was so severe that even a prolonged period of rapid employment growth would be insufficient to remove the problem of local mass unemployment. In more favoured areas, low rates of unemployment at the trough of the slump allow for the possibility of an early return to full employment, even if employment growth is moderate.

Table 4.32 attempts to present an outline of what was happening to local labour markets in the recovery, and in particular to identify which counties had chronic labour surpluses, and which counties were potentially generating chronic labour shortages. An employment rate is calculated by subtracting the unemployment rate from 100%, and this is multiplied by the ratio of employment in 1937 to employment in 1932, to see how the level of employment in 1937 compares with the size of the insured workforce in 1932. A percentage figure for the "crude" labour surplus or deficit may be calculated, and this can be modified by taking into account the national increase in the size of the workforce (up 6.9% between 1932 and 1937) and adding this to the figure for the labour surplus.

There is a very clear distinction to be drawn between peripheral

counties with large scale labour surpluses (ranging from 32.2% in Glamorgan to 16.2% in Yorkshire), and over 12% unemployment in 1937, and Southern and Midland counties with much smaller labour supluses, or labour deficits, and below 10% unemployment in 1937. The only exception in the list is Worcestershire, which is anomalous both in having a very large labour surplus for a non-northern county and also a very low unemployment rate in 1937 given the size of the measured labour surplus. This exception is explained by Worcestershire having a very large decrease in employment (-9.6%) in 1932-33; had calculations been made from a 1933 base instead of a 1932 base, Worcestershire would have been registered as a county of labour deficit, thus explaining the low unemployment rate of 1937.

The sizes of the labour force surpluses in Northern England would suggest that unemployment in 1937 would be expected to have ranged from about 16% (Yorkshire) to about 32% in these counties. The actual range was from 12.0% to 23.1%, suggesting that migration, and other regionally specific aspects of the depletion of the labour force, had reduced the labour surplus by about a quarter. Table 4.33 presents more detailed figures, and suggests that this rate of depletion in Britain ranged from 17.9% in Northumberland to 38.3% in Lancashire. There is a strong tendency for major labour surplus counties close to the more prosperous regions to have a much higher rate of depletion through migration of the labour force *surplus* than do more distant counties; there is a clear contrast in Table 4.33 between, on the one hand, Scotland, Northumberland and Cumberland, and on the other hand, Lancashire, Cheshire, Glamorgan and Monmouthshire. This is what one would expect, given a distance decay effect in migration. In Northern Ireland, however, the size of the workforce increased faster than the UK average, rather than more slowly. This would be due largely to the tendency for birth rates to be far higher in Northern Ireland than in Britain (see also Table 5.17 for a post-war comparison) leading to a tendency for the workforce to increase rapidly despite net emigration. In other regions, differences in the rate of natural increase of the workforce are relatively slight, and probably do not have any substantial effect on the size of the labour surplus.

Migration may have reduced the unemployment rate to a certain extent in the Northern counties, but not sufficiently to remove the whole of the substantial labour surplus. The result was continued high unemployment. As has already been emphasised, the main factor behind this continuance of high unemployment was not any deficiency of employment growth during the recovery (employment growth was high in the periphery), but rather a very high unemployment rate (ranging from 25.4% to 42.2%) at the start of the recovery period. Conversely, the low

unemployment rates in Southern England were due less to any exceptionally rapid expansion of employment than to there being low unemployment rates at the beginning of the period, requiring (in comparison with, say, South Wales) a relatively small expansion of employment to alleviate the unemployment problem. The exceptionally rapid growth of employment in Middlesex, Essex, Bedfordshire, etc., had very strong effects on the rate of population growth, but only weak effects on the unemployment level; on average, unemployment rates in these counties were no lower than unemployment rates in many Southern counties with slow growth, such as Dorset, Wiltshire, Cambridgeshire and Sussex. At this end of the scale, it hardly makes much difference to the unemployment rate whether a county has a labour surplus of 3% or a labour deficit of 40%.

In the intermediate range, counties with labour surpluses of between 4% and 13% all had unemployment rates of between 5% and 10%; higher than in the labour deficit counties, but smaller than in the counties with major labour surpluses.

One very important point about Table 4.32 is that it indicates how necessary it was that there should be substantial net migration to the expanding areas of the South East and the West Midlands conurbation. Without such immigration, such expansion would have been severely curtailed, yet it was to a large extent the result of high levels of unemployment in the periphery that migration could take place on such a large scale. There was much discussion in this period of migration into the prosperous areas. Thomas (1937, 1938) examined migration during the recovery period into London and the South East, and also the Midlands, on the basis of the changing locations of national insurance cards.[113] There is much useful detail in this work, but little discussion, other than at a very general level, about the employment changes which underlie the shifting migration flow. Thomas notes that the large bulk of the migration was to the larger urban centres in this region, although there was also considerable net migration into smaller towns. Also, a large proportion of the migratory population originated from the depressed areas, with a particularly heavy Welsh influx. These are precisely the results which would be expected on the basis of the present analysis. Daniel (1940) made a closer examination of Welsh migration into Oxford up to 1937, illustrating changing compositions of the migrant workforce in different periods, and also showing the importance of steady flows of information from existing migrants to attract new migrants to an expanding town.

Makower, Marschak and Robinson (1938, 1939, 1940) attempted to explain patterns of migration by means of the "incentive to move", a

measure based on differences in the unemployment rates between places. This however does not seem a fully satisfactory procedure in that it takes no account of changing *employment* levels. It is suggested that a more satisfactory approach, which comes close to explaining *both* regional unemployment patterns and regional migration patterns, is to relate changes in employment to unemployment levels at the beginning of a time period and to the change in employment during the time period. From the patterns of local surpluses and deficits which results, it is possible to work out the broad outlines of unemployment patterns at the end of the period and net migration during the period.

The precise degree of migration to prosperous areas depends to some extent on whether there is full employment or not in the prosperous areas. It is possible to envisage a situation in which employment is expanding rapidly in an area of low unemployment, with this expansion of employment being met partly by net immigration and partly by the absorption of part of the local unemployed labour force. As full employment is approached, the limited size of the local reservoir of unemployed labour means that the rate of net inward migration will have to be increased in order to meet the local demand for labour. This would lead to three main statistical results as the recovery proceeds and certain areas approach full employment; firstly, a tendency for net migratory flows to increase slightly, secondly, the beginning of a downward stickiness in unemployment rates in the more prosperous areas, and thirdly a tendency, when this point of stickiness has been reached, for the index of unemployment inequality to decline in value. Table 4.11 suggests that inter-regional migratory flows had indeed been intensifying slightly during the recovery, while Table A8 shows that the regional index of unemployment inequality had stayed fairly steady, at about 6 between 1932 and late 1935, before falling fairly sharply to about 4 by late 1937. In 1938, renewed recession led to the index of inequality increasing again.

These figures suggest that from 1935 to 1937 an increasing number of areas were beginning to reach full employment. Up to, say, 1936, the contrast was between a North of high unemployment and a South of low unemployment; after 1936 the contrast was one between a South at full employment and a North with high unemployment.

Figs 4.2 to 4.6 attempt to chart the patterns of decline of unemployment in more detail. In each case, unemployment rates in each county one mid-year are plotted on the y-axis against unemployment rates at the previous mid-year. A 45^{o} line has also been plotted to show what the unemployment rate in each county would be if the local unemployment rate had declined to the same degree as the national unemployment rate.

In 1932-33, the first year of recovery, most points on the graph in Fig 4.2 were situated fairly close to the 45^{o} line. There was a slight tendency for counties with relatively low rates of unemployment to have a slower than average rate of decrease of unemployment, although one such county, Northamptonshire, had a very substantial decline in unemployment from 19.5% in June 1932 to 11.6% in June 1933. There was no obvious pattern in the rates of decreases in unemployment in counties with high unemployment; much depended on the local rate of employment change in determining whether there was to be a fast or slow rate of decrease of unemployment.

It is generally to be expected that in a recovery counties with low rates of unemployment will have slightly lower rates of decrease of unemployment than counties with high rates of unemployment; the former set of counties are asymptotically approaching full employment, while the latter counties can have unconstrained falls in unemployment. In 1932-33, however, the rates of unemployment were so high, even in the low unemployment counties, that this effect was slight. In 1933-34 (Fig 4.3) there would appear to be very little sign of this effect as counties with relatively low unemployment rates had a decline in unemployment very close to the national average. At the end of the period, however, seven counties, all in the South East, had unemployment rates of below 6%[114] a level at which further rapid declines in unemployment become unlikely.

Some counties had very large falls in unemployment in 1933-34, while others even had increases. These relate primarily to patterns of employment change. In Worcestershire, unemployment fell from 22.3% to 11.7% with an increase in employment of 14%, while in Cumberland unemployment fell from 32.0% to 26.3% with a rise in employment of 8%, and in Northumberland, unemployment fell from 30.3% to 24.1% with an employment rise of 9%. In Durham, a rise of 9% in the level of employment occasioned a fall in unemployment from 39.8% to 24.1%, but the situation was much less favourable in Glamorgan, where employment fell by 2% and unemployment rose, against national trends, from 37.9% to 42.6%. Other counties with much slower than average falls in unemployment, or rises in unemployment, also were suffering from job loss. In Leicestershire unemployment rose from 11.8% to 13.0% along with a fall in employment of 1%, while the slowness of the decline of employment in Cambridgeshire (from 5.4% to 5.2%) was not due to the asymptote of full employment being approached, but instead resulted from a very slight (less than ½%) decline in employment.

Between mid-1934 and mid-1935 unemployment fell slowly, by only 1.1 percentage points. This year represented a slight lull in the upswing between the vigour of the immediate post-slump rebound (1932-34) and the rearmament boom of later years, and especially 1936-37. A phase of relatively slow economic growth at a time when inter-regional migration flows were intense implies a slower than average rate of unemployment reduction in counties with low unemployment; the influx of migration with respect to the number of jobs being created tends to be higher than normal. Table 4.4 suggests in fact that unemployment was static, or even rising slightly, in low unemployment counties, but in some cases falling sharply in counties with medium-low rates of unemployment as employment started to pick up after the slump. In Derbyshire, for example, employment rose by 6½% as unemployment fell from 17.6% to 11.5% while Suffolk, Leicestershire and Northamptonshire, each with unemployment rates between 10% and 13%, each showed a combination of fast employment growth and a fast decline in unemployment.

The slower than average rate of employment decline in low unemployment counties was sufficient to ensure that the index of unemployment inequality fell slightly, from 6.3 in June 1934 to 6.2 in June 1935. Such a fall is, however, hardly noticeable. It was only in the two succeeding years that unemployment inequalities began to close significantly. Figs 4.5 and 4.6 can usefully be taken together in this respect. What appears to be happening is that in the circumstances of the time it was very difficult for unemployment anywhere to fall below about 4%. The fast economic growth between 1932 and 1935 had led to unemployment falling to somewhere between 4% and 10% in large parts of the South and Midlands by mid-1935. Employment in these areas continued to expand rapidly, but while it was still possible for unemployment to fall substantially in an area with 10% unemployment, the possibilities for a further fall in unemployment were slight where unemployment was already at about 4%. As a result, between 1935 and 1937 unemployment settled down at around 4% in an increasing number of counties; in 1933 one county (Cambridgeshire) had unemployment below 5½%; in 1934 there were five, in 1935 six, in 1936 nine, and in 1937 thirteen. Gradually, large parts of the country were approaching full employment.

Other counties still had very high rates of unemployment, but these rates were falling quickly, especially in 1936-37; in one year, unemployment fell from 38.2% to 23.1% in Glamorgan and from 32.8% to 19.7% in Monmouthshire (Table 4.34). Regional inequalities in unemployment rates, as measured by the Cn index, were, by implication, also falling sharply, from 5.7 in June 1936 to 4.0 in August 1937. The continuation of a trend towards full employment would have meant that

these inequalities would have fallen further, as unemployment would decline very slowly in low unemployment areas and rapidly in high unemployment areas. This however does not mean a tendency for unemployment rates to equalise entirely; it is more likely that there would be, as actually happened in the 1950s, a contrast between areas of "fairly full" employment in the periphery, and "overfull" employment in the core. In conditions where the main expanding industries are located in the core regions, and where economic growth is laggardly in the periphery, there is the danger of acute labour shortages in the core regions, which need to be resolved by immigration, either from the periphery or from abroad, and more particularly, from the Commonwealth.[115] In the periphery, although there was considerable net emigration, the continued demographic increase in the size of the labour force, and the slow rate of employment growth meant that unemployment continued to remain sticky at about 2%.

While the economy appears to have been moving strongly towards full employment after 1932, there was still a lot which needed to be done by the time war broke out. Many commentators (e.g. Beveridge 1944) reckoned that a realistic figure for post-war unemployment would be around 3%, although as events turned out, a far lower figure was achieved. The switch from 10% unemployment to less than 3% unemployment would come about with large scale reductions of unemployment in the periphery and a gradual whittling down of the unemployment rate in the core.

4.5 Conclusions

The geography of Britain in the inter-war years is a story of deep recessions, often highly localised or regionalised, and incomplete recoveries. The persistence of 10% unemployment throughout the 1920s suggests that the economic system was never able to overcome completely the depressive effects of the sharp recession in 1921 and the coal mining closures of the mid-1920s. The persistence of high levels of unemployment, particularly in the periphery, or, as Champernowne (1937, 1938) termed it, "Outer Britain", indicates that despite vigorous economic growth throughout the country, the effects of the 1929-32 slump had still not been completely overcome.

The general tendency would appear to be for recession to be localised, and concentrated in particular industries which were both localised and vulnerable (e.g. coal, cotton, shipbuilding), and for recovery to be general. This trait can be traced throughout the business cycles of the inter-war period, although in the mid-1920s there was a significant complication to the picture in that during a period of cyclical upswing, in which employment was booming in Southern England, the appearance of acute overcapacity in the coal industry internationally led to large scale reductions in mining employment in Outer Britain. Thus, a boom in one part of the country coexisted with a deep recession in the less favoured part of the country.

If these overall tendencies are restated in the form of the regional histories of major regional groupings, then the basic pattern of Britain's economic geography in this period is clearly revealed.

In Southern England, and most particularly in London and the South East, the inter-war period was one of rapid economic expansion during cyclical upswings, both between 1923 and 1929 and between 1932 and 1937, with very weak recessions, even during the 1929-32 slump. The rapid expansion of employment throughout this period led to low rates of unemployment, and indeed unemployment was at full employment levels or close to full employment levels for much of the time, once allowance is made for scale differences between inter-war measures of unemployment rates and post-war measures. Thus, following the 1925 boom, unemployment stood at around 4 to 6% in Southern England, while these rates were repeated at a very late stage of the 1932-37 recovery. During the deep recessions of the period, unemployment increased, to over 14% in early 1932, not so much as the result of any reduction in jobs but rather through migration flows from less favoured regions swelling the local workforce at a time of slow employment growth. In more favoured conditions, as in the mid-1920s and mid-1930s, the migratory influx could

be absorbed into employment, but in slump conditions the swelling of the workforce was expressed in terms of unemployment.

Within the more prosperous regions, some parts expanded especially rapidly with any national upturn in aggregate demand. This applies with particular force to London's suburban field, in which after the slump recovery came early and ferociously fast. The same may be noted to a far lesser extent in the Birmingham-Coventry areas, although here economic depressions as well as booms were clearly felt.

In the North recessions were felt extremely severely. As has often been pointed out, and discussed in section 4.4(i) above, this was due not so much to worse than average performance in geographically dispersed industries, but rather to concentration of resources in localised and highly vulnerable industrial groupings such as the coal mining and textile industry. In shift-share terms, the problem was thus not so much one of an adverse differential shift, but rather one of an adverse structural shift. There is no particular reason why in any cyclical recovery employment should grow at a greatly slower rate in the North than in the South and Midlands as a whole (again, barring a crisis in a specified industry), but this evenness of recovery performance tends to perpetuate regional economic differences rather than to eliminate them. More specifically, if at the end of a slump region A has an unemployment rate of 15% and region B one of 30%, the passage of several years of regionally even employment growth will after a while lead to a situation in which region A would have full employment and region B would have 10-15% unemployment. Furthermore long term unemployment will persist as an extremely severe social problem in the depressed regions long after it has been eradicated in the more prosperous regions.[116] An element of spontaneous migration would help reduce unemployment differentials, but it would be fallacious to assume that a greatly increased level of migration would solve the problem of an inappropriate geographical division of labour under conditions of high unemployment, since if migration is at a level beyond the recipient region's capacity to create employment the result is not a more appropriately distributed labour force but rather simply a trensference of unemployment.

The 1932-1937 recovery phase represents only one part of a complete post-slump recovery. The economy had, when comparisons are made with the trough of the slump, moved approximately half-way towards full employment, and one might expect that the return to full employment would have taken place in the course of a further decade, as the new industries continued to expand faster than the older industries contracted. This would be under peace-time circumstances. As events actually turned out, a World War started in September 1939, following a phase of international

rearmament. In the late pre-war phase, the rearmament boom created considerable extra demand for labour in the traditional industrial areas, while during the war period itself, surplus manpower was quickly absorbed into the armed forces. The virtual elimination of unemployment (except in Northern Ireland, where there was no conscription) was speedy, but not instantaneous. At the start of war, in September 1939, unemployment stood at 7.9%, falling to 1.9% by June 1941, and 0.7% by May 1942.[117] The unusual circumstances of the return to full employment did not remove regional differences in unemployment rates; areas with high unemployment rates before the war continued to have higher than average unemployment rates during the war, while areas close to full employment before the war had extreme labour shortages during the war. Cairncross (1979 p.x) notes that during the War the Government followed a policy of favouring placing contracts in "green" labour surplus areas, and avoiding, where possible, the placement of contracts in "red" labour shortage areas. Indeed, Booth (1982) argues that post-war regional policy was to become based on dealing with the problems of labour shortage in a tight labour market, in continuance of the development of war-time regional policy, rather than on addressing itself to the problems of depressed areas as such, in continuance with the development of the rather fragmentary regional policy of the 1930s.

The persistence during the war of regional differences in unemployment probably reflects regional differences in unemployment amongst the older section of the population before the war; the older unemployed workers would not have been required to enter military service, and yet employment had to be found in specific places to bring the older workers into the war effort. While policies were followed to direct work to areas of labour surpluses, the effect would have been to reduce spatial differences in unemployment rates rather than to eliminate them entirely.

After the War, full employment persisted, apart from a brief but severe relapse in early 1947, but the peripheral regions continued to have higher unemployment rates than the core regions. Chapter 5 below considers the questions of regional employment and unemployment after 1945.

Table 4.1 Annual percentage employment change by region, 1923-1931 and 1931-1939

Region	% employment change (annual)		
	1923-1931	1931-1939	(1923-1929)
London	+2.2	+3.1	(+3.2)
South Eastern	+3.3	+3.4	(+4.1)
South Western	+1.8	+3.3	(+2.5)
Midland	+0.1	+3.9	(+1.6)
Yorks/North East	-1.8	+3.8	(+0.5)
North Western	-1.2	+2.6	(+1.0)
Scotland	-1.5	+3.1	(+0.4)
Wales	-3.8	+2.9	(-3.0)
Northern Ireland	-3.6	+1.7	(+1.1)
U.K.	-0.0	+3.3	(+1.5)

Source: Based on Tables A4, A5

Since employment data are not available for years before 1923, it is not possible to incorporate the major recession of 1920-22 into this table.

Note: In calculating this table, the post-1936 Northern region has been included with YH ("North Eastern") region to maintain maximum continuity across data bridges.

Table 4.2 Index Rates for Employment in the Regions of Great Britain, 1929-1939 with (a) 1929 base (b) 1932 base

(a) 1929 = 100

	SE	SW	L	M	Sc	Y	NW	Wa	N
1929	100	100	100	100	100	100	100	100	100
1932	100	97	98	91	87	83	87	81	78
1937	125	120	121	119	107	109	103	101	103
1939	130	128	122	123	110	112	103	107	107

(b) 1932 = 100

1929	100	103	102	110	115	120	115	123	128
1932	100	100	100	100	100	100	100	100	100
1937	125	124	123	131	123	131	118	125	132
1939	130	132	124	135	126	135	118	132	137

Source: (a) Richardson (1967 p.270)
(b) recalculated from (a)

Note: 1937 and 1939 figures for North and North West affected by boundary changes.

This table is used to illustrate an aspect of Richardson's work, and not as a basic series for regional employment data (for which see Table A4, A5, A6, 4.1).

Table 4.3 The Post-War "Boom" in the UK, 1918-1920; Chief Statistical Indicators

Change since previous year (%)

	GNP (Current prices)	GNP (Constant prices) (i)	GNP (Constant prices) (ii)	Cost of living index	Index of industrial production
1918	+14.5	-2.0	-1.2	+15.9	-3.3
1919	+6.1	-9.1	+0.5	+5.6	+10.2
1920	+12.7	-6.6	-2.8	+16.0	+11.1
1921	-14.7	-5.0	-6.1	-9.2	-18.5

Source: Mitchell (1975 pp. 357, 744-746, 790)

GNP at constant prices:

Series (i) uses the GNP deflators used in Mitchell 1975
Series (ii) uses the cost of living index as a deflator
Series (ii) is the preferred series, but is still likely to understate the boom in non-war production since the running down of a war time economic activity is also incorporated in the total GNP figures.

Table 4.4 Regional Unemployment Rates in Engineering, Selected Months, 1920-1922

		L	SE	SMiE	SW	WM	EM	Y	NW	N	Wa	Sc	Ire/ NI	UK
1920	Mar	7.7	7.2	4.8	9.7	3.5	3.2	3.7	4.6	5.9	2.5	4.4	10.7	5.2
	Jun	6.8	5.7	3.3	6.3	2.0	2.3	2.2	2.1	3.2	1.4	2.8	8.7	3.4
	Sept	8.6	8.0	3.4	6.3	5.2	2.7	2.4	3.8	3.8	1.6	3.3	8.7	4.6
	Dec	11.2	11.1	7.3	7.8	11.8	5.0	4.5	5.6	4.4	4.9	4.8	9.1	7.2
1921	Jan*	13.4	11.7	10.6	9.2	15.7	7.7	5.8	6.4	5.7	7.7	6.7	9.9	9.2
	Feb*	14.6	12.6	12.8	8.8	17.6	9.8	7.5	7.6	7.0	10.0	7.2	11.4	10.5
	Mar	18.3	16.1	16.2	12.2	24.4	12.5	10.5	11.1	11.5	15.5	10.6	14.1	14.4
	Apr	20.1	17.8	19.8	12.5	29.3	18.8	19.7	15.7	28.5	20.1	17.5	16.6	20.2
	May	21.0	19.3	21.8	13.8	32.0	24.2	28.1	19.1	31.8	23.1	21.2	17.9	24.8
	Jun	21.2	18.5	22.0	14.0	33.1	27.1	28.3	20.5	34.6	24.5	26.9	18.5	25.3
	July	19.8	17.8	22.7	13.9	29.2	23.9	25.9	19.6	25.1	19.8	25.6	18.1	23.0
	Aug	18.4	17.5	21.0	12.9	27.6	21.6	17.1	17.7	23.6	17.4	22.2	19.4	20.4
	Sept	16.7	18.7	18.4	13.0	28.0	20.5	17.5	19.0	22.5	14.6	19.4	17.7	19.7
	Oct	18.0	18.4	17.8	14.2	26.8	20.9	17.8	19.9	22.4	10.4	18.8	16.7	19.7
	Nov	21.5	20.1	20.9	17.0	32.6	26.7	25.6	24.1	29.7	28.6	25.6	26.2	25.3
	Dec	21.1	20.7	20.9	17.0	32.8	29.7	28.2	26.2	30.9	29.5	27.7	27.6	26.5
end-Dec		21.2	21.0	21.6	18.2	32.8	27.0	27.8	28.2	33.5	26.9	28.5	28.2	27.2
1922	Jan	21.2	20.7	22.2	17.8	31.7	28.4	27.7	26.0	32.7	26.9	28.5	28.3	26.6
	Feb	21.3	20.0	21.7	17.2	30.5	27.1	28.7	25.8	30.5	25.4	28.7	28.0	26.2
	Mar	21.0	20.3	21.0	17.5	29.4	26.6	29.2	27.0	34.6	21.3	30.7	29.8	26.9

* Extension of unemployment insurance scheme in this sector, so unemployment rates not completely comparable.

Source: *Gazette*, various, 1920-1922

Table 4.5 Regional Unemployment Rates in Construction, Selected Months, 1920-1922

		L	SE	SMiE	SW	WM	EM	Y	NW	N	Wa	Sc	Ire/ NI	UK
1920	Mar	3.7	2.9	2.5	4.5	1.4	1.3	0.8	1.4	1.5	1.1	2.1	10.6	2.8
	June	3.3	2.8	2.0	3.6	1.1	1.0	0.7	0.9	1.0	0.8	1.1	10.0	2.1
	Sept	5.1	3.9	2.1	3.3	1.4	1.4	0.9	1.5	1.1	0.8	1.2	9.1	2.8
	Dec	11.2	7.8	6.7	7.0	5.1	4.8	4.9	6.2	3.7	3.2	5.1	14.6	7.2
1921	Jan	14.3	8.6	8.0	7.9	8.0	6.6	6.9	7.4	5.1	4.9	6.7	20.8	9.2
	Feb	13.2	7.6	7.5	6.7	9.1	6.7	7.9	7.5	5.2	5.9	7.2	24.3	9.2
	Mar	13.7	8.3	8.4	8.0	10.8	8.3	7.4	8.8	7.2	8.1	9.6	42.6	10.9
	Apr	15.8	10.9	12.1	10.5	15.4	11.2	11.1	11.4	13.3	13.7	13.0	52.8	14.4
	May	17.8	12.1	13.4	11.9	18.6	13.9	14.8	14.2	15.1	16.2	15.7	55.2	16.6
	Jun	16.8	11.5	12.5	12.4	17.8	13.5	13.7	13.2	15.9	16.3	15.4	44.2	15.8
	Jul	17.3	13.2	13.1	13.2	17.4	13.0	12.6	12.7	13.0	14.2	15.2	36.9	15.4
	Aug	14.8	12.0	11.7	12.5	17.0	12.0	11.0	12.9	11.6	12.9	11.9	34.0	13.9
	Sept	15.8	12.5	11.5	11.5	15.4	11.8	10.5	12.8	11.2	11.0	10.7	28.6	13.4
	Oct	17.7	12.9	11.6	11.5	17.5	11.9	11.1	13.0	16.0	12.0	11.6	26.8	14.3
	Nov	20.9	14.5	13.8	13.5	22.9	16.9	15.5	18.2	18.2	18.8	15.7	28.5	18.0
	Dec	21.9	15.8	15.2	15.9	24.7	20.6	18.0	20.8	20.7	22.3	19.8	33.7	20.3
	end-Dec	22.1	16.6	17.4	17.6	25.6	21.0	19.2	23.5	23.3	24.0	21.1	34.0	21.6
1922	Jan	23.8	17.7	19.7	17.8	28.9	23.8	21.6	24.7	24.1	25.5	23.1	24.7	23.2
	Feb	22.8	16.3	18.8	17.4	29.1	23.4	21.0	25.2	22.5	23.9	21.8	33.6	22.5
	Mar	19.7	11.9	15.8	15.0	24.6	19.5	15.4	21.2	20.9	21.0	18.2	21.0	19.0

Source: *Gazette*, various (1920-1922)

Table 4.6 Male Unemployment by Industry, August 1922

Sector	Men over 18 unemployed	
	Number (000)	Percent
Engineering, vehicles and metals	392	24
Shipbuilding	124	39
Building and construction	132	16
Transport, docks, seamen, etc.	118	14
Coal mining	81	8
Miscellaneous trades and services	57	12
Textiles	39	9
Pottery, glass, bricks, etc.	25	20
Chemicals and explosives	25	15
Food	22	9
Clothing	18	9
Other mining and quarrying	16	18
Total	1049	16

Source: Astor (1923 pp.16-17), based on unpublished Ministry of Labour data.

Table 4.7 Changes in Unemployment by Sector, 1921

Change in unemployment rate (percentage point)

ENGINEERING

	L	SE	SMiE	SW	WM	EM	Y	NW	N	Wa	Sc	Ire	UK
Dec 1920-Mar 1921	+7.1	+5.0	+8.9	+4.4	+12.6	+7.5	+6.0	+5.5	+7.1	+10.6	+5.8	+5.0	+7.2
Mar 1921-Jun 1921	+2.9	+2.4	+5.8	+1.8	+8.7	+14.6	+17.8	+9.4	+23.1	+9.0	+16.3	+4.4	+10.9
Jun 1921-Sept 1921	-4.5	+0.2	-3.6	-1.0	-5.1	-6.6	-10.8	-1.5	-12.1	-9.9	-7.5	-0.8	-5.6
Sept 1921-Dec 1921	+4.5	+2.3	+3.2	+5.2	+4.8	+6.5	+10.3	+9.2	+11.0	+12.3	+9.1	+10.5	+7.5
Total	+10.0	+9.9	+14.3	+10.4	+21.0	+22.0	+23.3	+22.6	+29.1	+22.0	+23.7	+19.1	+20.0

CONSTRUCTION

	L	SE	SMiE	SW	WM	EM	Y	NW	N	Wa	Sc	Ire	UK
Dec 1920-Mar 1921	+2.5	+0.5	+1.7	+1.0	+5.7	+3.5	+2.5	+2.6	+3.5	+4.9	+4.5	+28.0	+3.7
Mar 1921-Jun 1921	+3.1	+3.2	+4.1	+4.4	+7.0	+5.2	+6.3	+4.4	+8.7	+8.2	+5.8	+1.6	+4.9
Jun 1921-Sept 1921	-1.0	+1.0	-1.0	-0.9	-3.4	-1.7	-3.2	-0.4	-4.7	-5.3	-4.7	-15.6	-2.4
Sept 1921-Dec 1921	+6.3	+4.1	+5.9	+6.1	+10.2	+9.2	+8.7	+10.7	+12.1	+13.0	+10.4	+5.1	+8.4
Total	+10.9	+8.8	+10.7	+10.6	+20.5	+16.2	+14.3	+17.3	+19.6	+20.8	+16.0	+19.1	+14.4

SHIPBUILDING (Regions with more than 10,000 insured employees)

	L	SW	NW	N	Wa	Sc	Ire	UK
Dec 1920-Mar 1921	+17.0	+8.9	+10.4	+9.8	+12.3	+9.8	+7.3	+10.2
Mar 1921-Jun 1921	+5.0	+15.0	+7.8	+26.4	+21.6	+14.7	+9.4	+15.4
Jun 1921-Sept 1921	-9.1	-9.5	-0.3	-9.4	-16.9	-7.1	+4.7	-6.4
Sept 1921-Dec 1921	+6.2	+0.7	+6.0	+5.7	+11.2	+17.4	-1.8	+7.8
Total	+19.1	+15.1	+23.9	+33.5	+28.2	+34.8	+19.6	+27.0
Unemployment rate:								
Dec 1920	14.9	8.9	12.9	8.6	14.7	5.7	10.1	9.1
Dec 1921	34.0	24.0	36.8	42.1	42.9	40.5	29.7	36.1

Source: *Gazette*, various (1921-1922); Tables 4.4, 4.5

Table 4.8 Male and Female Employment in Engineering, Great Britain, 1914-22
Number of insured persons

	Number of Insured Persons (Thousands)			
	June 1914	July 1918	Jan 1922	Sept 1922
Males	790	951	1044	1066
Females		463	84	75
Total	790	1414	1128	1141

Source: Astor 1923 p.23.

Table 4.9 Male Unemployment (August 1922) in Towns with Unusual Increases in the Male Population, 1911-1921

	Increase in population (males)		Unemployment rate (%)
	Number (Thousands)	Percentage	Males, August 1922
Gateshead	3.2	5	25
Sheffield	12.3	5	32
Sunderland	4.1	6	41
Wolverhampton	3.1	7	23
South Shields	4.4	8	34
Middlesbrough	4.9	8	48
Swansea	5.6	8	14
Birmingham	34.3	8½	18
Liverpool and district	42.0	9	21
Grimsby	3.7	10	10
Newport	4.1	10	17
Greenock	3.9	10	28
Cardiff	10.0	11	10
Southampton	7.9	11	13
Barrow	4.6	14	49
Luton	3.2	14	12
Darlington	4.1	15	18
Coventry	9.6	18	19
Clydebank	4.1	20	21
		3.6	16
		(England and Wales)	(U.K.)

Source: Astor 1923 p.20. This version is a slightly abbreviated version in that Astor's cut off point was an increase in male population of 1000, rather than 3000 as here.

Table 4.10 Employment Growth by Period, North, Midlands, South, 1923-1939

	% employment change (annual rate)			
	1923-1929	1929-1932	1932-1939	1923-1939
South	+3.3	-0.5	+3.6	+2.7
Midlands	+1.6	-2.7	+4.3	+1.9
North	+0.3	-5.2	+3.6	+0.7
UK	+1.5	-3.2	+3.7	+1.6

Source: Table A4. See also tables A6, 4.1

See also Table 5.1 for a continuation of this series into post-war years.

Important: This series considerably over states employment growth in the pre-slump period as a whole, in that the extremely severe recession of 1920-22 is excluded because of lack of data.

Table 4.11 Annual estimates of net inter-regional migration 1923-1936

Year	Net inter-regional migration ('000)
1923-4	63
1924-5	0.3
1925-6	64
1926-7	67
1927-8	163
1928-9	76
1929-30	143
1930-1	183
1931-2	32
1932-3	54
1933-4	55
1934-5	65
1935-6	82
1925-1929 (average)	93
1929-1931 (average)	163
1931-1933 (average)	43
1933-1936 (average)	67
1925-1936 (average)	89

Source: Makower, Marschak, Robinson (1939 p.75)
The figure for 1924-5 is regarded as unreliable.

Table 4.12 Employment Figures For the Coal Mining Industry, 1922-1925

Month		(1) Total Employees (based on interpolation from July figures)	(2) Employment (Number of employees minus unemployment)	(3) Number of wage earners on colliery books	(4) Equivalent number of wage earners working a full week (5.8 shifts)	(5) Unemp.
1921	Mar	1094	1066	1198	989	28
	Dec	1083	944	1063	923	139
1922	Mar	1126	1025	1084	986	101
	Jun	1165	1070	1088	868	95
	Sep	1182	1111	1104	1031	71
	Dec	1194	1137	1129	1094	57
1923	Mar	1202	1158	1147	1135	44
	Jun	1207	1165	1163	1137	42
	Sep	1208	1169	1169	1115	39
	Dec	1207	1177	1185	1178	30
1924	Mar	1205	1178	1188	1181	27
	Jun	1200	1140	1186	1063	60
	Sep	1197	1094	1160	1063	103
	Dec	1191	1092	1140	1067	99
1925	Jan	1190	1090	1139	1071	100
	Feb	1188	1057	1137	1056	131
	Mar	1187	1066	1126	1034	121
	Apr	1186	1048	1108	1026	138
	May	1183	1036	1096	942	147
	Jun	1180	865	1058	849	315
	Jul	1178	993	1048	1011	185
	Aug	1176	896	1048	868	280
	Sep	1175	882	1056	860	273
	Oct	1173	926	1061	921	237
	Nov	1172	982	1069	981	190
	Dec	1172	1032	1085	1047	140

Based on calculations made by C. Clark (1929 p.82). All figures in thousands.

Table 4.13 Number of Workers Employed in Coal Mining by Coalfield, 1924-1925

Employment (000s)

Coalfield

		Durham	N'humb	Yorks.	NW	Mids.	South	South Wales	Scot.	Total
1924	Mar	175.8	64.2	183.9	136.0	225.9	16.7	243.8	141.9	1118.5
	June	175.2	64.3	186.6	136.1	227.2	16.9	240.8	139.3	1186.4
	Sep	163.7	59.4	187.7	134.2	226.5	16.7	235.6	136.0	1159.7
	Dec	157.3	58.2	187.8	134.1	226.9	15.8	224.0	135.9	1140.1
1925	Jan	157.5	57.9	188.3	133.4	228.4	15.6	223.7	135.4	1139.1
	Feb	156.3	57.2	189.7	132.8	227.0	15.8	223.0	135.8	1137.6
	Mar	153.3	54.2	190.2	132.9	226.8	16.2	220.8	132.4	1126.7
	Apr	151.8	50.3	189.0	131.7	225.6	15.9	215.6	127.9	1107.8
	May	147.9	48.7	189.4	129.9	224.4	16.1	215.5	123.8	1095.7
	June	140.3	47.3	186.6	122.5	220.0	15.5	209.3	117.0	1058.6
	July	137.2	46.6	184.0	121.3	217.8	15.4	209.7	116.3	1048.3
	Aug	141.4	48.8	181.9	121.2	217.5	15.3	205.7	116.7	1048.5
	Sept	141.6	49.2	182.2	121.9	218.3	15.3	209.4	118.6	1056.4
	Oct	141.5	51.7	184.2	122.6	219.6	15.5	204.8	120.6	1060.5
	Nov	146.5	53.8	186.4	123.5	220.4	15.3	200.7	122.8	1069.4
	Dec	149.0	54.8	187.8	125.2	221.4	15.4	206.4	124.8	1084.6

Sources: *Gazette*, various. 1924-1926. For definitions of coalfields, see Table 4.14.

Table 4.14 Number of Workers Employed (Full-Time Equivalents) in Coal Mining by Coalfield, 1924-25

Date		Employment (000s)								
		Coalfield								
		Durham	N'humb	Yorks.	NW	Mids.	South	South Wales	Scot.	Total
1924	Mar	164.6	60.7	179.5	122.0	226.5	16.7	246.3	130.0	1144.9
	June	148.9	49.5	166.2	116.9	194.4	14.9	235.4	110.7	1037.1
	Sept	136.9	53.1	178.4	117.6	213.1	13.4	209.2	119.6	1035.7
	Dec	139.1	53.5	176.6	118.1	205.9	14.7	222.8	123.5	1053.6
1925	Jan	139.9	54.5	172.1	120.1	213.1	14.6	215.2	120.0	1058.6
	Feb	134.0	50.7	177.6	118.9	212.5	15.1	211.4	121.1	1041.5
	Mar	125.0	44.3	174.3	116.9	210.2	15.8	207.9	116.7	1010.1
	Apr	127.5	44.4	175.9	113.9	207.5	15.3	213.8	108.9	1008.5
	May	122.9	41.0	160.2	101.3	182.3	13.3	209.6	100.7	931.4
	June	101.8	34.3	140.3	87.1	165.6	11.0	191.6	95.8	828.6
	July	112.6	42.9	173.9	107.6	207.9	15.0	184.4	66.9*	912.7
	Aug	97.8	41.2	134.1	80.3	176.4	11.9	169.6	98.2	809.9
	Sept	102.3	43.5	152.0	84.0	179.1	11.0	166.8	97.7	836.1
	Oct	114.9	47.9	161.4	92.6	189.1	12.1	168.4	105.7	892.3
	Nov	120.7	50.3	164.4	102.6	195.2	13.4	194.8	107.4	949.5
	Dec	126.1	51.7	172.7	116.6	209.9	14.4	206.7	119.6	1051.0

* Holiday month in Scotland

Source: *Gazette*, various, 1924-1926. (Yorkshire: South Yorkshire coalfield plus West Yorkshire; north West = Lancashire, Cheshire plus Cumberland and Westmorland plus North Wales; Midlands = Derbyshire, plus Nottinghamshire and Leicestershire, plus Warwickshire, plus North Staffordshire, plus South Staffordshire, Worcestershire and Shropshire; Southern England = Gloucestershire and Somerset, plus Kent).

Table 4.15 European Output of Hard Coal, 1922-1925

	Output (Millions of metric tons)				Change in output (Millions of metric tons)		
	1922	1923	1924	1925	1922-3	1923-4	1924.5
Germany	130.4	73.5	132.9	145.7	(-56.9)	+59.4	+12.8
UK	253.6	280.4	271.4	247.1	+26.8	-9.0	-24.3
France	31.9	38.6	45.0	48.1	+6.7	+6.4	+3.1
Poland	34.6	36.1	32.3	29.1	+1.5	-3.8	-3.2
Belgium	21.2	22.9	23.4	23.1	+1.7	+0.5	-0.3
Rest of Europe	31.6	37.0	44.6	43.2	+5.4	+7.6	-1.4
Europe (Total)							
(Including Germany)	503.3	488.5	549.6	536.3	(-14.8)	+61.1	-13.3
(Excluding Germany)	372.9	415.0	416.7	390.6	+42.1	+1.7	-26.1

Source: Mitchell 1975 pp.365-370

German figures from July 1922 exclude eastern Upper Silesia, while production in the Saarland is included throughout.

Table 4.16 Changes in Coal Mining Employment and Changes in Unemployment by Region, 1924-25

	Region									
	L	SE	SW	M	YNE	NW	Wa	Sc	NI	UK
Unemployment										
Sept 1924 (000s)	167.5	54.8	66.8	158.1	241.9	273.0	75.8	161.3	44.1	1243.4
Sept 1925 (000s)	130.9	39.4	62.6	157.2	317.0	265.2	164.0	199.9	64.9	1401.0
Change (000s)	-36.6	-15.4	-4.2	-0.9	+75.1	-7.8	+88.2	+38.6	+20.8	+157.6
(% point)	-1.8	-2.0	-0.5	-0.1	+3.8	-0.4	+14.1	+3.0	+8.1	+1.4
Employment change										
Coal mining (000s)	-	+0.4	-2.9	+34.0	+71.4	-29.9	-46.6	-21.9	-	-217.5
Estimate of change in unemployment (% point) resulting from										
(a) Concentration of employment in coal mining	-	+0.0	+0.4	+2.6	+3.8	+1.0	+7.4	+1.9	-	+1.9
(b) Differential shift in coal mining	-	-0.1	-0.0	-0.6	-0.2	+0.5	0.0	+0.2	-	-
(c) Events in rest of local economy	-1.8	-1.9	-0.9	-2.2	+0.2	-1.9	+6.7	+0.9	+8.1	-0.5

Sources: Table A7 (for unemployment), Table 4.14 (for employment in coal mining, full time equivalents; comparison made between September 1924 and September 1925).

Table 4.17 Coal mining Employment as a Proportion of Total Employment; 1921, Selected Areas

	Coal mining employment (000s)	Total employment (000s)	Coal mining employment as percentage of total employment
(i) The exporting coalfields			
North East Coast	238.7	898.5	26.6
South Wales	275.5	682.2	40.4
(ii) The inland coalfields industrial areas			
North West	124.3	2592.6	4.8
Yorkshire, West Riding	180.9	1475.3	12.3
Birmingham and District	21.6	886.7	2.4

Source: *Census of England and Wales, 1921, Industry Tables.*

Table 4.18 Annual Employment Change by Sector, 1929-1932

	Employment (000s)				Change (000s)			Change (%)		
	1929	1930	1931	1932	1929 -30	1930 -31	1931 -32	1929 -30	1930 -31	1931 -32
Coal mining	873	816	670	622	-57	-146	-48	-6	-18	-7
Cotton	482	332	329	353	-150	-3	+24	-31	-1	+7
Other textiles	670	586	533	566	-84	-53	+33	-13	-9	+6
General eng.	536	500	413	391	-36	-87	-22	-7	-17	-5
Ships, marine eng.	214	194	115	89	-20	-79	-26	-9	-37	-23
Iron and steel	191	169	117	114	-22	-52	-3	-12	-31	-3
6 depressed inds.	2966	2597	2177	2135	-369	-420	-42	-13	-16	-2
All other sectors	7964	7897	7888	7832	-67	-9	-56	-1	-0	-1
	10930	10494	10065	9967	-436	-429	-98	-4	-4	-1

Sources: *Historical Abstract*, Table 114; Political and Economic Planning 1939, pp.282-284.

Table 4.19 Employment Change and Unemployment Rates by County 1929-1932

	County		Emp. Change (%) 1929-1932	Unemp. (%) June 1932	Change (inv.) 1929-1932		County		Emp. Change (%) 1929-1932	Unemp. (%) June 1932	Change (inv.) 1929-1932
1	Monmouthshire	(Wa)	-25.3	42.1	-22.2	24	Hampshire & IoW	(SE)	-2.4	14.9	-9.6
2	Durham	(N)	-24.2	40.4	-24.2	25	Oxfordshire	(SE)	-2.1	15.4	-11.0
3	Glamorgan	(Wa)	-23.8	41.5	-21.4		Norfolk	(EA)	-2.1	16.5	-9.0
4	Cumberland	(N)	-20.1	36.2	-21.1	27	Greater London	(SE)	-2.0	12.5	-7.9
5	Northumberland	(N)	-15.9	32.4	-18.4	28	Wiltshire	(SW)	-1.7	11.3	-8.0
6	Yorkshire	(YH)	-14.4	27.0	-15.5	29	Cornwall	(SW)	-1.6	21.6	-10.4
7	Staffordshire	(WM)	-12.6	27.4	-15.3	30	Dorset	(SW)	-1.2	12.2	-8.4
8	Lancashire	(NW)	-11.4	25.4	-12.5	31	Buckinghamshire	(SE)	-1.1	12.8	-10.7
9	Denbighshire	(Wa)	-10.2	28.5	-17.2	32	(Westmorland)	(N)	+0.1	10.0	-6.0
10	Cheshire	(NW)	-10.9	24.8	-12.5	33	Devon	(SW)	+1.4	14.1	-6.6
11	Northants.	(EM)	-9.9	19.5	-12.1	34	Somerset	(SW)	+1.5	13.8	-7.5
	"Rest of Wales"	(Wa)	-9.9	27.8	-14.4	35	Bedfordshire	(SE)	+2.1	9.7	-6.7
13	Worcestershire	(WM)	-9.1	25.4	-15.9	36	Berkshire	(SE)	+2.2	12.6	-8.0
	Derbyshire	(EM)	-9.1	22.3	-12.5	37	(Herefordshire)	(WM)	+3.8	18.2	-8.7
15	Suffolk	(EA)	-8.9	19.2	-13.6	38	Kent	(SE)	+4.2	13.7	-8.5
16	Gloucestershire	(SW)	-7.3	20.4	-9.6	39	Sussex	(SE)	+4.3	8.2	-5.8
	Warwickshire	(WM)	-7.3	16.5	-10.7	40	(Hunts.)	(EA)	+4.8	10.9	-8.3
18	Leicestershire	(EM)	-7.0	15.1	-9.6	41	Cambridgeshire	(EA)	+5.7	7.5	-4.5
19	Nottinghamshire	(EM)	-6.2	20.7	-9.7	42	(Pembroke)	(Wa)	+9.8	27.8	-9.1
20	(Rutland)	(EM)	-6.0	23.5	-12.4	43	Hertfordshire	(SE)	+17.6	9.0	-6.6
21	Lincolnshire	(YH/EM)	-5.5	20.3	-13.4	44	Surrey	(SE)	+21.8	9.8	-7.6
22	Shropshire	(WM)	-4.4	22.8	-11.8	45	Essex	(SE)	+29.6	14.6	-7.4
23	Carmarthen	(Wa)	-2.4	27.9	-6.9	46	Middlesex	(SE)	+35.9	11.1	-7.6

(Scotland -13.3, 26.8, -15.8; Northern Ireland -13.5, 27.4, -13.6)

(United Kingdom -9.0, 22.4, -12.7)

Source: Beck 1951, Tables 16, 17, 18, 19

Counties have been allocated to current (post-1974) regions rather than to contemporary (pre-1936 regions).
Some economically smaller counties have been indicated by brackets.

Table 4.20 Employment and Unemployment in the Lancashire Cotton Industry 1929-33

Year	Number insured (July) (000s)	Number unemployed (Quarterly average) (000s)	Cotton unemployment rate (%)	Employment (Number insured minus number unemployed) (000s)
1929	467.2	63.0	13.5	404.2
1930	470.2	199.0	42.3	271.1
1931	463.6	200.9	43.3	262.7
1932	435.9	133.1	30.5	302.8
1933	419.5	105.6	25.2	313.9

Source: Daniels and Campion (1935 p.347).

Table 4.21 A Shift-Share Analysis of Regional Employment Change in 30 Sectors, June 1929-June 1932 (Summary)

Region	Structural shift (%)				Differential shift (%)				
	Manuf.	Tertiary	Coal mining	Total	Manuf.	Tertiary	Coal mining	Total	Total shift
L	+0.6	+7.1	0	+7.7	+0.5	-1.0	0	-0.6	+7.1
SE	-1.0	+4.9	-0.1	+3.8	+1.9	+2.4	+0.4	+4.7	+8.5
SW	-2.8	+6.1	-0.3	+2.9	+2.5	+0.7	-0.0	+3.2	+6.1
M	-1.4	+2.9	-3.2	-1.7	-0.1	+0.7	+1.5	+2.1	+0.4
YNE	-5.5	+3.5	-4.9	-7.0	-0.7	+0.3	-1.3	-1.7	-8.7
NW	-7.3	+3.9	-1.0	-4.5	-0.1	-0.6	+0.1	-0.6	-5.1
Sc	-4.6	+5.3	-2.5	-1.8	-3.2	+0.4	+0.9	-2.0	-3.8
Wa	-2.7	+3.6	-10.2	-9.3	-1.0	-0.3	-2.7	-4.0	-13.3
NI	-4.8	+6.2	0	+1.5	-2.9	-1.8	0	-4.7	-3.2

Source: Beck, 1951, Table 14.
Base of shift-share analysis: UK total employment change, 1929-1932 (-8.8%)

The thirty sectors on which this shift-share analysis is based are (1) Coal mining (2) Brick, tile, pipe, etc. making (3) Chemicals (4) Steel melting, iron puddling, etc. (5) General engineering: engineers' iron and steel founding (6) Construction and repair of motor vehicles, cycles and aircraft (7) Shipbuilding and ship repairing (8) Electric cable, apparatus, lamps, etc. (9) Metal industries n.e.s. (10) Cotton (11) Woollen and worsted (12) Hosiery (13) Textile bleaching, printing, dyeing, etc. (14) Tailoring (15) Dressmaking and millinery (16) Boots, shoes, slippers and clogs (17) Bread, biscuits, cakes, etc. (18) Drink industries (19) Furniture making, upholstering, etc. (20) Printing, publishing and bookbinding (21) Building (22) Gas, water and electricity supply (23) Tramway and omnibus service (24) Road transport n.e.s. (25) Shipping service (26) Distributive trades (27) Commerce, banking, insurance, finance (28) Entertainment and sports (29) Hotel, public house, restaurant, boarding house, etc., service (30) Laundries, dyeing and dry cleaning.

Table 4.22 A Shift-Share Analysis of Employment Change by Region, 1929-1932, with Effects of Employment Change in Coal Mining Excluded.

Region	Structural shift (%)		Differential shift (%)	Total shift
	1	2		(%)
London	(+7.7)	+5.8	-0.6	+5.2
South East	(+3.9)	+2.0	+4.3	+6.3
South West	(+3.2)	+1.3	+3.2	+4.5
Midlands	(+1.5)	-0.4	+0.6	+0.2
Yorkshire & N.Eastern	(-2.1)	-4.0	-0.4	-4.4
North Western	(-3.5)	-5.4	-0.7	-6.1
Scotland	(+0.7)	-1.2	-2.9	-4.1
Wales	(+0.9)	-1.0	-1.3	-2.3
Northern Ireland	(+1.5)	-0.4	-4.7	-5.1

Source: Based on Table 4.21 but excluding coal mining.

Column (1) - Coal mining structural shift subtracted from total structural shift in Table 4.21.

Column (2) - Column (1) minus 1.9%, to allow for the calculation that if mining and quarrying had been removed from aggregate trends, total employment would have fallen nationally by 6.9% rather than 8.8%.

Table 4.23 Regional Unemployment Increases During Various Phases of the 1929-33 Slump

Increase in Unemployment

(a) Thousands

		South+	M	YNE	NW	Wa	Sc	NI	UK
Nov	1929-June 1930	+24.0	+120.2	+137.6	+225.6	+34.0	+63.7	+18.7	+623.7
June	1930-Sept 1931	+267.3	+142.9	+184.5	+146.5	+50.5	+152.4	+16.1	+887.1
Sept	1931-Aug 1932	+40.6	-15.1	+46.5	-66.6	+37.0	+2.8	+3.8	+38.9
Aug	1932-Jan 1933	+117.3	-18.1	-30.1	-46.2	-9.3	+28.5	+0.4	+43.5

(b) Percentage points

Nov	1929-June 1930	+0.7	+6.5	+5.3	+10.4	+4.7	+5.2	+8.4	+4.8
June	1930-Sept 1931	+5.7	+6.5	+10.8	+6.7	+8.9	+10.5	+5.4	+7.4
Sept	1931-Aug 1932	+0.6	-0.2	+0.9	-3.8	+5.5	-0.5	+0.8	-0.1
Aug	1932-Jan 1933	+2.3	-1.0	-2.0	-1.8	-2.7	+1.9	-0.1	+0.0

(c) Numbers as percentage of national increase of unemployment

Nov	1929-June 1930	3.8	19.3	22.1	36.2	5.5	10.2	3.0	100.0
June	1930-Sept 1931	30.1	16.1	20.8	16.5	5.7	17.2	1.8	100.0
Sept	1931-Aug 1932	104.4	-3.9	119.5	-171.2	95.1	7.2	-9.8	100.0
Aug	1932-Jan 1933	269.7	-41.6	-69.2	-106.2	-21.4	65.5	+0.9	100.0
(Percentage of insured population, mid 1929)		33.0	15.0	16.6	17.7	4.9	10.6	2.2	100.0

+ South = L + SE + SW

Source: *Historical Abstract*, Table 162; Table A7 below.
The apparent inconsistencies between (a) and (b), especially in the third period, result from rebasing.

Table 4.24 Employment Growth by Region, 1932-1939

	Percentage employment change										
	Region										
	L	SE	SW	M	Y	NW	N	Wa	Sc	NI	UK
1932-39 (%)	+24.1	+32.2	+33.4	+34.7	+32.0	+19.4	+42.6	+34.9	+31.4	+21.8	+29.1
(% per annum)	+3.1	+4.1	+4.2	+4.3	+4.0	+2.6	+5.2	+4.4	+4.0	+2.9	+3.7
1932-34	+4.1	+5.4	+3.0	+5.5	+4.3	+2.6	+6.1	+4.5	+3.9	+4.9	+4.2
1934-36	+3.6	+5.1	+6.5	+4.8	+4.6	+2.3	+5.3	+1.7	+3.2	+1.0	+4.0
1936-39	+2.2	+2.5	+3.5	+3.3	+3.5	+2.7	+4.5	+6.1	+4.6	+2.8	+3.2

Source: Table A4.

Employment figures before 1936 for Y (Yorkshire) and N (Durham and Northumberland) are based on county figures presented in Beck (1951, Table 17) and scaled so as to make the combined employment totals for Y and N equal the total employment figures for the North Eastern Region (YNE) presented in Table A4.

The sub-periodisation of the recovery phase (1932-34, 1934-36, 1936-39) has been undertaken partly to assist with later discussion in chapter 5.1. The 1932-34 period may be regarded as one of post-slump rebound, the 1934-36 period as one of "normal" rapid growth, and the 1936-39 period as one of rearmament and rapid growth, interrupted by a recession in 1937-38.

Table 4.25 New Factory Opening by Region, 1933-1937

	Factories opened (1933-1937)	Factories closed	Balance	Jobs created in new factories (000s)	(% of national total)	Regional percentage of insured population, 1932
		(a) Including inter-regional transfers				
London	1128	772	+356	93.3	36.3	19.1
South	170	75	+105	18.2	7.1	15.4
Midlands	367	348	+19	51.4	20.0	15.3
North West	545	602	-57	54.8	21.3	17.8
North East	223	250	+27	23.5	9.1	16.9
Wales	27	16	+11	8.2	3.2	5.0
Scotland	105	95	+10	8.1	3.1	10.8
	2565	2158	+407	257.3	100	100
		(b) Excluding inter-regional transfers				
London	841	435	+406	69.6	31.3	19.1
South	151	75	+76	16.0	7.2	15.4
Midlands	356	295	+61	49.4	22.2	15.3
North West	493	494	-1	49.9	22.4	17.8
North East	210	218	+8	8.1	3.6	5.0
Wales	20	15	+5	8.1	3.6	5.0
Scotland	101	80	+21	7.7	3.5	10.8
	2172	1612	+560	222.7	100	100

Source: Board of Trade, annual *Survey of Industrial Development*,

The employment totals refer to the end of the year after the opening of the factory, and not to the end of the study period.

The balance of openings and closures varies between parts (a) and (b) because the opening of a factory in one region is often part of a rationalisation decision involving the closure of more than one factory elsewhere.

Table 4.26 Employment Growth by County, 1932-1937

County	Employment change		County	Employment change	
	Per cent	Per cent per annum		Per cent	Per cent per annum
1 Middlesex	+66.3	+10.7	22 Derbyshire	+24.5	+4.5
2 Essex	+64.5	+10.5	23 Yorkshire	+24.3	+4.4
3 Buckinghamshire	+44.4	+7.6	24 Hampshire	+23.9	+4.4
4 Bedfordshire	+43.3	+7.5	[UK average	+23.8	+4.4]
5 Kent	+38.3	+6.7	25 SCOTLAND	+22.7	+4.2
6 Oxfordshire	+37.9	+6.6	26 Shropshire	+21.9	+4.0
7 Staffordshire	+36.7	+6.5	27 Rest of Wales[2]	+21.8	+4.0
8 Northamptonshire	+36.5	+6.4	28 Cornwall	+20.4	+3.8
9 Monmouthshire	+35.9	+6.3	29 NORTHERN IRELAND	+19.7	+3.7
10 Warwickshire	+35.8	+6.3	30 Worcestershire[3]	+18.8	+3.5
11 Durham	+32.8	+5.8	31 Sussex	+18.7	+3.5
12 Northumberland	+32.5	+5.8	32 Somerset	+18.6	+3.5
13 Hertfordshire	+31.7	+5.7	33 Wiltshire	+18.0	+3.4
14 London	+30.3	+5.4	34 Dorset	+17.7	+3.3
15 Cheshire	+29.4	+5.3	35 Norfolk	+17.4	+3.3
16 Suffolk	+27.2	+4.9	36 Leicestershire[4]	+17.0	+3.2
17 Gloucestershire	+27.0	+4.9	37 Surrey	+15.8	+3.0
18 Cumberland[1]	+25.8	+4.7	38 Devonshire	+15.7	+3.0
19 Glamorgan	+25.6	+4.7	39 Cambridgeshire[5]	+15.5	+2.9
20 Nottinghamshire	+25.1	+4.6	40 Lancashire	+15.3	+2.9
21 Lincolnshire	+24.7	+4.5	41 Berkshire	+15.2	+2.9

[1]Including Westmorland [2]All counties in Wales except Glamorgan and Monmouthshire [3]Including Herefordshire [4]Including Rutland [5]Including Huntingdonshire

Source: Beck (1951), Tables 16 and 17. This series is compatible with the supplementary series in Table A4, rather than with the main series.

Table 4.27 Post-slump Employment Change in Southern England, 1931-1937

County	Employment change, 1931 or 1932-1937		June Unemployment rate (%)	
	per cent	Thousands	1932	1937
Middlesex *	+130.6	+332	11.1	3.7
Essex *	+64.5	+185	14.6	5.9
Hertfordshire *	+48.7	+32	9.0	3.8
Bedfordshire *	+45.3	+24	9.7	3.8
Buckinghamshire	+44.4	+21	12.8	3.7
Kent *	+43.5	+87	13.7	4.6
Oxfordshire	+37.9	+13	15.4	6.6
Surrey *	+36.5	+66	9.8	4.1
Greater London	+30.3	+627	12.5	5.6
Suffolk	+27.2	+16	19.2	6.0
Gloucestershire	+27.0	+43	20.4	7.7
Hampshire	+23.9	+47	14.9	6.1
Cornwall *	+22.3	+9	21.6	9.8
Sussex *	+19.8	+25	8.2	4.5
Somerset	+18.6	+15	13.8	5.2
Wiltshire	+18.0	+9	11.3	2.5
Dorset	+17.7	+6	12.2	4.0
Norfolk	+17.4	+14	16.5	9.2
Devon	+15.7	+18	14.1	7.2
Cambridgeshire	+15.5	+5	7.5	3.9
Berkshire	+15.2	+9	12.6	5.6

Source: Beck 1951, Tables 17 and 19.

Asterisked counties had increases in insured employment between mid-1931 and mid-1932, which were particularly substantial in the cases of Middlesex, Essex and Surrey. For all asterisked counties calculation of employment change has been made for the period 1931-37, rather than 1932-37 as in other counties. It is considered that any substantial increase in employment in an area in 1931-32 may be regarded as indicating an early recovery from slump.

Table 4.28 Post-slump Employment Change in the Midlands, 1931-1937

County	Employment change, 1931 or 1932-1937		June Unemployment rate (%)	
	Per cent	Thousands	1932	1937
Warwickshire*	+38.2	+164	16.5	3.8
Staffordshire	+36.7	+123	27.4	8.8
Northamptonshire	+36.5	+30	19.5	4.5
Nottinghamshire*	+25.7	+44	20.7	9.0
Derbyshire*	+24.8	+45	22.3	7.6
Lincolnshire	+24.7	+23	20.3	8.6
Shropshire	+21.9	+7	22.8	7.5
Worcestershire	+18.8	+20	25.4	5.6
Leicestershire	+17.0	+28	15.1	6.8

Source: Beck 1951, Tables 17 and 19.

Asterisked counties have had their employment change calculated on a 1931 base, employment having increased between 1931 and 1932.

Employment figures for Worcestershire and Leicestershire incorporate Herefordshire and Rutland respectively, while unemployment figures cover solely the counties named.

For the purposes of this table, Lincolnshire has been included with the Midlands rather than with the North, which would appear to represent a more natural grouping than that using Ministry of Labour divisions.

Table 4.29 Employment by Region in the Construction and Repair of Motor Vehicles, Cycles, and Aircraft, 1932-1939

Region	Employment (000s) in Construction and Repair of Motor Vehicles, etc.								Change 1932-39	
	1932	1933	1934	1935	1936	1937	1938	1939	(000s)	(%)
L	37.0	43.7	47.6	50.4	58.2	69.5	69.5	79.8	+42.8	+115.4
SE	24.9	27.5	31.3	36.3	41.6	42.6	46.0	56.8	+31.9	+127.9
SW	21.5	23.9	27.2	30.4	40.2	46.4	56.7	71.5	+50.0	+232.0
M	73.0	83.2	94.8	91.9	100.9	111.0	109.3	133.4	+60.4	+82.6
YNE	12.4	13.1	13.9	14.6	16.3	47.7	54.3	71.2	+44.9	+170.6
NW	13.9	14.7	17.0	18.6	23.6					
Wa	1.9	1.9	2.1	2.1	2.1	3.0	3.9	4.5	+2.6	+133.1
Sc	9.5	9.3	9.3	10.4	11.1	13.6	15.5	16.8	+7.3	+76.0
NI	1.9	2.0	2.1	2.2	2.3	2.9	5.4	9.6	+7.7	+396.4
UK	196.3	219.3	245.6	256.9	295.1	336.8	360.8	443.6	+247.3	+125.9

Source: Beck 1951 Table 14 (b).

Table 4.30 Post-Slump Employment Change in the Peripheral Regions, 1931-1937

County	Employment change, 1931 or 1932-1937		June Unemployment rate (%)	
	Per cent	Thousands	1932	1937
Monmouthshire	+35.9	+21.6	42.1	19.7
Durham	+32.8	+84.1	40.4	18.4
Northumberland	+32.5	+48.8	32.4	14.2
Cheshire *	+30.7	+55.8	24.8	12.0
Cumberland	+29.2	+10.9	36.2	19.9
Glamorgan *	+27.5	+55.8	41.5	23.1
Yorkshire	+24.3	+237.3	27.0	12.3
SCOTLAND	+22.7	+222.7	26.8	15.4
Rest of Wales	+21.8	+25.5	28.0	16.9
NORTHERN IRELAND	+19.7	+37.8	27.4	21.7
Lancashire *	+18.7	+249.6	25.4	12.9
Westmorland *	+13.8	+1.2	10.0	4.9

Source: Beck 1951, Tables 16, 17, 18 and 19.

Asterisked counties had increases in employment between mid-1931 and mid-1932, and calculations have been made from a 1931 base figure (1930 in the case of Westmorland) rather than a 1932 base figure.

Table 4.31 Employment Growth by Year, Counties in the Peripheral Regions, 1931-37.

County	Employment change (%)						
	1932-3	1933-4	1934-5	1935-6	1936-7	1937-8	1938-9
Durham	+0.4	+8.7	+0.7	+8.0	+11.9	+2.2	n.a.
Northumberland	+4.3	+9.0	+1.0	+7.1	+7.6	+0.3	n.a.
Cumberland	+7.4	+7.9	+2.7	-0.1	+8.6	+5.4	n.a.
Monmouthshire	+1.3	+6.2	+4.2	-0.1	+22.3	-4.8	n.a.
Glamorgan	+6.5	-1.7	+1.7	-4.1	+23.1	-2.2	n.a.
"Inner Britain"	+4.3	+5.2	+2.7	+5.8	+5.2	+1.1	+4.2
"Outer Regions"	+4.2	+3.4	+1.3	+4.6	+7.0	-1.9	+7.0
UK Total	+4.3	+4.3	+2.0	+5.2	+6.0	-0.3	+5.4
(Lancashire	+2.3	+1.8	+0.2	+2.8	+7.6	-6.5	n.a.
(Yorkshire	+6.3	+0.7	+0.5	+6.8	+8.1	-0.2	n.a.

Table 4.32 Key Labour Market Statistics by County, 1932 and 1937

County	(a) Employment rate, 1932 (Per cent)	(b) Employment, 1937, on a ratio of employment 1932	(c) Crude Labour surplus (+) or deficit (-), 1937 (Percent)	(d) Modified labour surplus or deficit (Per cent)	(e) Unemployment rate 1937 (Per cent)
Glamorgan	59.5	1.256	+25.3	+32.2	23.1
Monmouthshire	57.8	1.359	+21.4	+28.3	19.7
Durham	59.6	1.328	+20.9	+27.8	18.4
Cumberland	64.8	1.258	+18.5	+25.4	19.9
Lancashire	74.6	1.153	+14.0	+20.9	12.9
NORTHERN IRELAND	72.6	1.197	+13.1	+20.0	21.7
Worcestershire	74.6	1.188	+11.4	+18.3	5.6
Northumberland	67.6	1.325	+10.4	+17.3	14.2
Cheshire	69.3	1.294	+10.3	+17.2	12.0
SCOTLAND	73.2	1.227	+10.2	+17.1	14.0
Yorkshire	73.0	1.243	+9.3	+16.2	12.3
Shropshire	77.2	1.219	+5.9	+12.8	7.5
Cornwall	78.4	1.204	+5.6	+12.5	9.8
Derbyshire	77.7	1.245	+3.3	+10.2	7.6
Norfolk	83.5	1.174	+2.0	+8.9	9.2
Leicestershire	84.9	1.170	+0.7	+7.6	6.8
Lincolnshire	79.7	1.247	+0.6	+7.5	8.6
Devonshire	85.9	1.157	+0.6	+7.5	7.2
Staffordshire	73.6	1.367	-0.6	+6.3	8.8
Nottinghamshire	80.5	1.251	-0.7	+6.2	9.0
Berkshire	87.4	1.152	-0.7	+6.2	5.6
Gloucestershire	79.6	1.270	-1.1	+5.8	7.7
Somerset	86.2	1.186	-2.2	+4.7	5.2
Suffolk	80.8	1.272	-2.8	+4.1	6.0
Dorset	87.8	1.177	-3.3	+3.6	4.0
Surrey	90.2	1.158	-4.5	+2.4	4.1
Wiltshire	88.7	1.180	-4.7	+2.2	2.5
Hampshire	85.1	1.239	-5.4	+1.5	6.1
Cambridgeshire	92.5	1.155	-6.8	+0.1	3.9
Sussex	91.8	1.187	-9.0	-2.1	4.5
Northamptonshire	80.5	1.365	-9.9	-3.0	4.5
Warwickshire	83.5	1.358	-13.4	-6.5	3.8
Greater London	87.5	1.303	-15.0	-8.1	5.6
Oxfordshire	84.6	1.379	-16.7	-9.8	6.6
Kent	86.3	1.383	-19.4	-12.5	4.6
Hertfordshire	91.0	1.317	-19.8	-12.9	3.8
Buckinghamshire	87.2	1.444	-25.9	-19.0	3.7
Bedfordshire	90.3	1.433	-29.4	-22.5	3.8
Essex	85.4	1.645	-40.5	-33.6	5.9
Middlesex	88.9	1.663	-47.8	-40.9	3.7

Definitions: Employment rate is 100% minus the unemployment rate.
The crude labour surplus or deficit is the difference, as a percentage of the 1932 workforce (employed plus unemployed) between the employment in 1937 and the total workforce in 1932, and represents what the unemployment rate in 1937 would have been had the size of the workforce remained constant.
It is calculated as 100% - ((a) x (b))%
The modified labour surplus is the crude labour surplus plus 6.9 percentage points to allow for the national rate of expansion of the insured population.

Source: Based on Beck (1951, Tables 17,19)

Table 4.33 Depletion Rates through Migration of Surplus Labour in the Periphery, 1932-1937

County	Gross labour surplus, 1937 (ignoring migration) (% of imputed workforce)	Unemployment rate, 1937 (%)	Depletion of labour surplus through migration, etc. (imputed), 1932-1937 (% of labour surplus)	(% of workforce)
Glamorgan	32.2	23.1	28.3	8.2
Monmouthshire	28.3	19.7	30.4	7.9
Durham	27.8	18.4	33.8	8.6
Cumberland	25.4	19.9	21.7	5.2
Lancashire	20.9	12.9	38.3	7.4
NORTHERN IRELAND	20.0	21.7	-8.5	-1.7
Northumberland	17.3	14.2	17.9	3.0
Cheshire	17.2	12.0	30.2	4.9
SCOTLAND	17.1	14.0	18.1	3.0
Yorkshire	16.2	12.3	24.1	3.8

Source: Gross labour surplus and unemployment rate from Table 4.32. The gross labour surplus represents what the unemployment rate would be expected to be in the absence of migration flows.

Depletion rates calculated according to the gap between the unemployment rate and the gross labour surplus. This is assumed to reflect primarily differential migration flows, although the anomalous figure for Northern Ireland reflects a high natural demographic increase in the size of the workforce.

The "workforce" in the denominator is the 1937 workforce plus the imputed net migration (i.e. what the 1937 workforce would have been in the absence of migration).

Table 4.34 Employment and Unemployment Change in the Most Depressed Counties, 1936-37.

County	Unemployment (%) June 1936	June 1937	Change (percentage point)	Employment change, per cent, 1936-1937
Glamorgan	38.2	23.1	-15.1	+23.1
Monmouthshire	32.8	19.7	-13.1	+22.3
Durham	27.1	18.4	-8.7	+11.9
Cumberland	25.7	19.9	-5.8	+8.6
Northumberland	18.6	14.2	-4.4	+7.6
Lancashire	17.3	12.9	-4.4	+7.6
Yorkshire	17.2	12.3	-4.9	+8.1
Scotland	17.1	14.0	-3.1	+5.5
Northern Ireland	21.8	21.7	-0.1	+2.9
United Kingdom	12.9	10.1	-2.8	+6.0

Notes to Chapter 4

1. See especially McCrone (1969), McCallum (1979), Keeble (1976); also the discussion in chapter 5.3 below.

2. This argument is developed more fully in chapter 8.6 below.

3. Pollard (1969 p.99). Weber (1909/1929) provided at least the germ of theoretical anticipation of this tendency, without discussing the matter in detail. He noted (pp.74-75) that as the transition from ready to use raw materials (woods, clays, etc.) to materials which had to be wrung from nature industrially (coal, etc.) continued, "industry must shift decidedly and continually from the places of consumption to the material deposits" (p.75). This may be regarded as the 19th century model. The "20th century model" discusses the question of the locational effects of "transmissible power" (pp.91-94) and suggests the possibility of a shift of location toward "the places of consumption and the other material possibilities" (p.92). Unfortunately, Weber treated this possibility more as a technical opportunity in a given situation than as a basic aspect of economic evolution, yet one of the most obvious long term opportunities for a fundamental economic advance in the early 20th century would have been the chance of cheapening the expensive process of transporting power, thus a switch from coal to electricity as the *immediate* source of power in an industrial process. According to Weber's logic, major shifts in patterns of industrial location might be expected to result.

4. For inter-war developments, see especially Political and Economic Planning (1939), Royal Commission (1940) (The Barlow Report), Fogarty (1945 pp.389-450). For general discussion of the post-war dominance of the London zone, see Keeble (1980a).

5. Fogarty (1945 pp.336-358).

6. See especially Allen (1929), an important work which is linked into the discussion in Fogarty (1945).

7. Dennison (1938, 1939 pp.123-156), Political and Economic Planning (1939) and Champernowne (1937, 1938) provided contemporary discussions on this theme. See also Fogarty (1945 pp.1-33) and Beck (1951).

8. There are several instances of attempts to show long term trends by comparing a date in the 1920s with a date in the late 1930s, ignoring the break of trend in 1932. For employment data arranged in this way, see Fogarty (1945 pp.15), reproduced in Aldcroft (1970 p.79) and Middleton (1985b), where regional employment trends are shown from a 1923 base figure.

9. Richardson (1967 p.271).

10. ibid. p.298

11. The tendency for new industries to develop first in more prosperous metropolitan centres, and then to diffuse their production activities to more peripheral sites as the "product life cycle" develops, is noted in an important paper by Vernon (1966). Aspects of Vernon's argument will be developed in chapter 6 below, along with a reply to the critique of Vernon by Taylor (1986).

12. See also Pigou (1921, also 1947), Hobson (1922), Clay (1929), Bowley (1930). The primary citation is given to Astor (1923) mainly because it is the reference most used in the main text, also because of the statistical information and reporting it gives about local and regional patterns of unemployment in the context of industrial recession. The "footnote references", and especially Hobson (1922), are perhaps more interesting in theoretical terms.

13. See also Clay (1929 pp.81-145). Two Royal Commissions reported on the state of the coal industry; the Sankey Commission of 1919 and the Samuel Commission of 1925. Inevitably, given the intensity of the problems faced by the coal industry arising from a contraction of markets in the post-war world, it was impossible to arrive at a solution satisfactory to both capital and labour, and bitter overt class conflict arose from the irreconcilability of opposing claims at a time of crisis. Basically the coal-owners wanted the crisis to be resolved through successive rounds of wage cuts while the miners resisted wage cuts and argued that the State should ultimately take over the running of the coal mines; see also note 52 below.

Linked to the question of the problem of the depressed export industries was the question of the exchange rate, with the decisions taken to maintain sterling at a high level remaining a source of controversy both amongst contemporaries and amongst later historians. Without attempting to enter into detailed argument concerning the return to the Gold Standard in 1925, it still needs to be emphasised that the problems of the export trades were *structural* problems, rather than problems of excessive cost (whether arising from "high" wages or "overvalued" sterling). Thus there was overproduction, or potential overproduction, in several key sectors (coal, cotton, etc.) such that not all producers could produce at the levels at which they were accustomed to. Somewhere along the line, economic retrenchment was required to bring supply back in line with demand. As prices fell, comparative costs could decide in which countries the burden of readjustment fell most; it would be impossible, however, to avoid the need for readjustment altogether.

14. See for example the assessments by Clark et al (1979), Gloversmith (ed) (1980), Symons (1975). Maybe in no other period could such a venture as the *Left Book Club* have succeeded (Symons 1960 p.100).

It is easy, perhaps too easy, to conjure up a picture of widespread radicalisation generated by the horrors of the slump. Clark et al (1979 pp.7-8), writing just before the 1980s slump, argue that "for those confronting the complex problems of the nineteen-seventies and eighties, the thirties stand out in retrospect as a time when the issues seemed relatively simple and the relation between culture and politics clear and direct. With two to three million unemployed and millions more undernourished even the most privileged intellectuals might well feel guilty and outraged at the contrasts between rich and poor, while for many students finishing their education there was little hope of any but the most boring and routine job".

There are three obvious objections to this line of argument. Firstly, from the viewpoint of the late 1980s it is clear that mass unemployment and poverty do *not* radicalise "privileged intellectuals", or any other substantial section of the middle class. The effect has been the opposite; mass unemployment is simply not mentioned as a pressing issue in "polite society", whether in board rooms,

suburban sitting rooms or even it seems amongst the Labour Party leadership. Economically the issues are just as clear-cut in the 1980s as in the 1930s, yet the 1980s has seen, in contrast with the 1930s, a substantial retreat from intellectual radicalism. Secondly, the traumatising effect of slump on the intelligentsia would surely have been insignificant compared with the shock of the Great War; geographically distant images of hardship, as opposed to the immediate vision of close friends and comrades needlessly being slaughtered, often as a result of strategic ineptness, on foreign fields. Thirdly, concentration on the question of literary radicalism obscures the more fundamental point that during the 1930s the class struggle was being resolved in favour of the bourgeoisie at the expense of the working class; on these terms the 1930s were far from radical. The slump knocked the resistance out of the organised labour movement, whether in Parliament or in the workplace, and neither privileged guilt nor a temporary increase in the membership of the Communist Party could affect the shifting balance of power. Indeed the conventional judgment is to place the height of working class power as being during the 1926 General Strike, even though the strike ultimately failed. Bevan (1952/1978 pp.39-42) suggests that the decline in potential power of organised labour had started even earlier, and that had the major union leaders not been scared of their own power there was scope for fundamental social transformation in the early post-war years.

The above arguments would tend to suggest that 1930s radicalis*ation* was very much a middle class phenomenon, and was not directly concerned with the social effects of slump. What then was the true genesis of this new intellectual radicalism? The answer is surely the threat of Fascism. Britain, along with the rest of Western Europe, had recently passed through a singularly destructive war, while the social disintegration of Germany following War, hyperinflation and slump, had led to the rise of a political movement so ugly and ruthlessly expansionary that it was becoming clear that in all probability a Second World War was on its way. This, and not the slump, dominated the politics of the 1930s. The Conservatives, who dominated Parliament, mostly aimed for peaceful coexistence with Hitler, recognising a potential ally against Communism, while the politics of the Left represented a fragmented kaleidoscope of pacifism, of fighting militarily against Fascism in Spain, and of over-faithfulness to the USSR, a potential major ally against Fascism. It seems more plausible to argue that the Fascist threat to the whole structure of Western European civilisation was the radicalising force in the 1930s, than to argue that the economics of slump were dominant, although the question of slump was freely used as part of the critique of the malignancy of capitalism.

Care must always be taken to avoid too crude a reading of political events from economic time series. Even if one adopts a "historical materialist" approach, it is still possible to ask what could possibly be a more material influence on social development than total war, and the threat of total war.

(The text of this note was written before the author was aware of Hynes (1976), a work which emphasises the extent to which it was felt *at the time* that Britain was very much in an inter-war period, with images of a past war and fears of a future war prominent, even before the rise of Hitler. As the likelihood of future war gradually crystallised, a self-conscious "generation" appeared, too young to have fought in the Great War, with attentions fixed on coming battles for power. A particularly useful feature of Hynes' book is that it is arranged chronologically, so that year-to-year shifts in the climate of intellectual opinion can be

traced. By about 1928, a strong current of thought emerged in which Europe was seen not as "post-War" any longer, but in an epoch preceding the next War (Hynes 1976 pp.40-41). In the early 1930s, the economic crisis intensified the feeling of downward drift, and threatened the economic security of many of the to-be-radicalised generation. After the slump, political events gathered pace furiously, and intellectual radicalism became for once very prominent.)

15. Aldcroft and Richardson (1969), Aldcroft (1970), Richardson (1967), Lomax (1959). See, however, Aldcroft (1984, 1986) for a more pessimistic "revision" of the revisionist approach, in the light of the depressed employment trends of the 1970s and 1980s.

16. Benjamin and Kochin (1979 p.464).

17. Since the passage in the main text was writen, Beenstock and Warburton (1986 p.153) have argued that "relatively rapid real wage growth was a major cause of the increase in British unemployment in 1929-1932 and the subsequent abatement in unemployment during 1933-1937 reflected the moderation of real wages". It was thoroughly predictable, of course, that in the current intellectual climate an attempt would be made to demonstrate this proposition (see the main text); the problem here is to expose the basic flaws in the argument. Beenstock and Warburton concentrate attention on the behaviour of *real wages*, thus of money wages divided by an index value of the general price level. An elementary knowledge of the structure of the business cycle under conditions of "classical inflation" (see chapter 2.8 above) shows that in a recession prices tend to fall and that during a recovery prices tend to rise. Furthermore wages tend to be more sticky than prices in both upward and downward directions, giving rise to a situation in which real wages fall during a recession and rise during a recovery. Thus both real wages and unemployment respond systematically with the movements of the business cycle. The correlation between real wages and unemployment is an *indirect* correlation, and not a *causal* relationship, and remains so whatever the statistical strength of the correlation.

Neither Benjamin and Kochin (1979), nor Beenstock and Warburton (1986) offer any convincing evidence against the case that the level of unemployment is set by the level of employment, which in turn is set by the level of output which in turn is set by the level of effective demand.

18. Richardson (1969a, especially pp.117-122).

19. Richardson (1969a, especially pp.190-206).

20. Richardson (1969b, pp.209-214).

21. Richardson (1967, 1969c).

22. Citations in Priestley (1934/1977 pp.373-375).

23. See also Pigou (1947), Kindleberger (1973), Aldcroft (1977), Pollard (1981 pp.278-288).

24. See for example Chamberlin (1935 vol. 2 pp.96-118). Chamberlin suggests that the extent of the economic crisis under "war communism" was exacerbated by over-rigid centralisation of the economic process, in which the state attempted to control both the production and

distribution of food supplies, but with urban dwellers receiving small food supplies, leading to a drift back to the land and retarding industrial production. The view taken within Soviet Russia at the time appears to have been that the more prosperous peasants (Kulaks) were attempting to sabotage the distribution of foodstuffs (Serge 1972 pp.236-241).

25. Aldcroft (1970 pp.31-37, 1986 pp.1-9), Pollard (1969 pp.214-216). Pigou (1947) emphasised that in post-Armistice Britain there was a brief period of contraction ("breathing space") before the boom started in the spring of 1919; this boom lasted almost exactly a year, and then came the "slump" (inverted commas here since this was not a slump, as technically defined here, even though the recession was of similar severity to a slump).

Aldcroft (1977 pp.65-67) covers the international dimension, noting that the boom was strongest in those countries away from the main centres of hostilities. The post-war boom was thus relatively weak in continental Europe.

26. Dowie (1975) interprets the 1919-20 inflation in terms of a wage push following the introduction of the eight hour days and suggests that the wage push inflation which followed this legislative change jeopardised Britain's economic prospects during the 1920s by reducing price competitiveness. This case would seem to be overstated, both in terms of the long-term effects of the 1919 inflation, and in terms of the causation of the inflation. Other countries also had sharp rises in prices without legislative change in the labour market.

27. Pollard (1969 p.92), Aldcroft (1986 pp.4-5).

28. This in itself provides an indication of the relatively slight attention given at the time to the *regional* dimension to unemployment; coverage by sector was more comprehensive than coverage by place.

29. Southall (1983, 1986) disputes this interpretation, but uses a very narrow statistical base for his challenge, and completely ignores unemployment figures in years outside the trough of recessions. Indeed in his 1983 paper Southall even suggests that pre-1914 Unemployment Insurance statistics on regional unemployment were incorrect because they were not taken at a cyclical trough! Southall is evidently unaware of the importance of the 1920-21 recession in reversing regional patterns of unemployment, with 1919-1920 showing the South having higher unemployment rates than the North, and the post-1921 period showing the North having higher unemployment rates than the South; the question is not, as has been casually assumed by earlier writers, one of a difference between a pre-war and a post-war economy, and the First World War did *not* effect the reversal of polarity, at least not directly.

30. Possibly the need is for some composite indicator of cyclical changes in regional labour markets. Beveridge (1909 pp.42-44), writing at a time when the statistical information available was rudimentary, used various series (unemployment, pauperism the marriage rate, etc.) to measure the "pulse of the nation". It is suggested that an exercise of this type conducted at regional levels would throw considerable light on the economic geography of the pre-1914 years.

31. Traditionally the labour force in the building industry has comprised a core labour force of skilled craftsmen, and a peripheral

unskilled labour force, with a pronounced aspect of casual labour. When general labour markets are tight, unskilled building labourers can remain in fairly steady employment, with relatively short intervals between jobs. In that general physical fitness, rather than length of experience, is the chief requirement for building labourers, and in that construction projects are of relatively short-term duration, leading to a frequent turnover of labour, it is relatively easy for "outside" labour to displace "inside" labour, leading to a swelling of the labour force, and an increase in the average length of spells of unemployment. Chapter 9 below presents further discussion on the economics of casual labour in a pre-1914 context.

32. *Historical Abstract*, Table 159. It seems, however, that trade union rates for unemployment in the immediate post-war period seriously understated the extent of unemployment; in April 1919, for example, 1,093,000 were registered as unemployed in the out of work donation scheme, whereas the trade union unemployment rate was only 2.7% (Pigou 1947 pp.218-219).

33. Clay (1929 pp.38-43).

34. ibid. p.43; Astor (1923 p.17).

35. Clay (1929 p.146), Astor (1923 pp.24-26), Pigou (1947). Bagwell (1974 pp.209-211) notes that immediately after the war "the motor industry of Great Britain experienced a frantic speculative mania reminiscent in its extravagance of the railway mania of 1845-7", but that this boom collapsed in 1921, leading to severe unemployment in parts of the West Midlands. The 1921 collapse was a response both to the change to peace-time patterns of demand, and also to the boom of the previous year.

36. Astor (1923 p.24). The reference to "men" is an amusing error in that it was mainly women who were drawn into the munitions industry.

37. Clay (1929 pp.41,43). Unemployment rates in the cotton industry continued to fluctuate very sharply, being below the national average again throughout 1924 and 1925, but generally above the national average thereafter (Board of Trade 1928, pp.248-249; see also section 4.2(ii) below).

38. This facet is emphasised by Clay (1929 pp.81-102), who is concerned to distinguish the factors which have determined the course of employment in a few depressed industries in order to "explain the persistence of unemployment represented by three-quarters of a million unemployed in excess of the number that ordinary trade fluctuation would account for". (pp.81-82).

39. Aldcroft (1969 p.228).

40. Aldcroft (1969 pp.226-227). For a detailed business history account, see Hannah (1979).

41. See especially Hannah (1974, 1976 pp.29-141), also Pollard (1969 pp.161-174), Aldcroft (1969a), Buxton and Aldcroft (1979). The structure of industrial production in Britain was becoming far less atomised, and the rise of the corporate economy, in which the intra-firm organisation of production becomes as important as the inter-firm competitive organisation of production, was a central feature of the 1920s. Indeed various interest groups came together

under the umbrella of the "rationalisation movement" (see Hannah 1976 pp.29-44) to suggest that Britain's economic problems in the 1920s could best be solved by accelerating the shift towards large scale industrial organisation, and by diminishing the role of the small producer. In the 1920s, Hannah (1974 pp.253) notes, British industry experienced an intense wave of mergers, creating such companies as Imperial Chemical Industries and Unilever, while a number of existing enterprises also consolidated their position by internal growth. See also Buxton and Aldcroft (1979).

42. Or, more accurately, not published. Neither the *Gazette*, nor the *Abstract of Labour Statistics* (vol. 18, 1926, this being the first post-war volume published) give regional unemployment statistics for 1921 or 1922, even though regional unemployment rates for 1913 and 1914 had been published in the *Gazette*. It was not until 1926 that the *Gazette* resumed the regular publication of regional unemployment rates, at a time when unemployment differentials were starting to become acute (Tables A7, A8). It would appear that official statisticians were perhaps slow to recognise the deep and fundamental transformation of the structure of the space economy which was taking place in the early 1920s.

43. See note 49 below.

44. Reproduced in the *Statistical Abstract of the United Kingdom*, various.

45. Dennison (1939), Champernowne (1937, 1938), Political and Economic Planning (1938), Richardson (1967), Pollard (1969), Aldcroft (1970), etc.

46. Theoretical discussion of the question of migration is presented in more detail elsewhere (section 4.4(ii) for the 1930s, chapter 5.4(ii) for the 1950s and early 1960s, chapter 5.4(iii) for the late 1960s and 1970s). Clearly the dominant direction of net migration is from depressed areas to prosperous areas, but it seems that the volume of net migration is set more by the seriousness of labour shortages in prosperous areas than by the seriousness of unemployment in depressed areas. At times of full employment, labour shortages in more prosperous areas can become acute, while at times of high unemployment nationally (as in the 1920s) the volume of net migration is set at such a level as to cover the demand for labour in more prosperous areas, leaving a slight labour surplus, while the unemployment rate in depressed areas is set firstly by the rate of employment change, and secondly by the volume of net migration. The extent to which job losses in depressed areas are absorbed in ways other than increases in the local unemployment rate depends on labour market conditions elsewhere in the economy.

47. *Historical Abstract*, Table 110.

48. Garside (1980 pp.37-38).

49. The origins of the occupation of the Ruhr were the wishes of the French and Belgian Governments (though opposed by Britain and Italy) to seize physical goods to make amends for defaults in German reparation payments (see for example Knight-Patterson 1945 pp.313-314). Rosenberg (1936 pp.178-182) indicates a farcical situation in which at various intervals French soldiers moved to the pitheads and cleared away the accumulated stocks of coal, while German miners and labourers stopped work in indignation, but as soon as the troops moved away work started again until there was

enough coal at the pithead to attract the attention of troops again. It was thus resistance to the Franco-Belgian occupation, incomplete though this resistance might have been, which reduced German coal production, and not the act of occupation itself. Kirby (1977 p.66) notes that the drop in German production led to record British exports of coal in 1923, a line of argument wholly consistent with the argument in the text. This of course represented an economic crisis postponed, through historical accident, rather than a crisis averted.

50. See for example Kirby (1977 p.77). Kirby notes that "in explaining (the crisis) it is customary to point to the return to the gold standard in April 1925 .... but (this) claim ignores the fact that the industry's financial difficulties pre-dated the return to gold and were intimately linked with the resumption of German coal production following the Franco-Belgian withdrawal from the Ruhr in April 1924". Month-by-month analysis of employment and unemployment figures, as presented in the main text, confirm this point of view; the great widening of regional unemployment differences in 1925 took place *before* April. The return to the Gold Standard, a feature regarded by Jones (1984) as of central importance in the creation of the depressed area problem in the 1920s, is here regarded as secondary.

51. See chapter 9 below and, for example, Rawstron (1964), for discussions of the development of coalfield industrial structures. The main points are that industry requires energy, and that before the development of the electrical grid energy was very difficult to transport (either directly or indirectly, as fuel). This tied the development of mass industry to various coalfields, and led to a symbiotic relationship between coal production and industrial production, with coal mining developing as a *single* dominant industry only where a very large proportion of coal was exported.

52. The background to the stoppage is discussed in Renshaw (1975) and Kirby (1977). The basic underlying problem was that in the unfavourable market conditions of the mid-1920s coal could be produced only at a loss. Mineowners wished to cut costs by cutting wages, leaving the structures of production otherwise unchanged, while mineworkers argued the need for substantial reorganisation of the industry, consolidating production in the more efficient pits even at the cost of allowing less efficient pits to fade away, and suggested also the need for greater state involvement in the running of the industry. Both sides in the conflict were deadlocked, with the owners pressing for unconditional wage cuts and the miners pressing for industrial reorganisation and stable wages.

The problem came to a head in late 1924 and 1925 when "for the first time since the end of the war the British coalmining industry, with a cost structure consistent with pre-war levels of prosperity, was exposed to the realities of the long-term market situation" (Kirby 1977 p.68; see also chapter 9.6 below). On June 30th 1925 the mineowners announced a unilateral decision to abolish existing wage agreements, and to cut wages to maintain profits (Renshaw 1975 p.118). In the last week of July, just before this decision was to come into effect, the Government backed down on its non-interventionist stance and announced substantial subsidy payments to the coal industry. "Red Friday" thus delayed the onset of overt conflict in the coal industry by reducing economic friction. The set of agreements negotiated in 1925 were to come to an end in April 1926, and mineowners again tried to impose substantial wage reductions. This time there was no scope for an agreement

satisfactory to all parties, and the mineowners locked the miners out until they were prepared to accept substantial reductions in wages. The seven month period of the lock-out is described in Noel (1976).

53. The General Strike, in support of the miners, was triggered by the refusal of machine men at the *Daily Mail* to print an article supporting the Conservative Government and attacking the miners. Behind the General Strike lay the coal dispute, and behind the coal dispute lay the severe deterioration of the position of the coal industry, central to the economic history of the 1920s. Renshaw (1975), in discussing the General Strike, pays particularly close attention to the broader context of the 1920s. Other works on the General Strike include Symons (1957), Farman (1972), Skelley (1976), with several essays on the progress of the General Strike in different localities, Morris (1976), and Florey (1980), where attention is focused on the question of class conflict.

54. *Historical Abstract*, Table 114; *Annual Abstract of Statistics* (various); C. Clark (1929 p.82).

55. *Historical Abstract*, Table 114. The figures for miscellaneous services exclude domestic workers (see *Historical Abstract*, Table 111, footnotes).

56. Board of Trade (1932d p.52).

57. Disappointingly, the Board of Trade Survey of the North East Coast (Board of Trade 1932c), in many respects the most detailed of the Board of Trade area surveys, pays little attention to the internal geography of job loss in coal mining, although there was general recognition (e.g. Board of Trade 1934 p.75) of a shift in activity from the older mines of South-West Durham, often "waterlogged or worked out" to newer pits further east. Unemployment figures for the area are surprisingly difficult to locate; the Board of Trade (1934 pp.116-117) shows however that unemployment in mid-1934 averaged 37.0% in South West Durham (around 50% in Bishop Auckland and neighbouring Shildon), 30.7% in East Durham (but 41.0% in Sunderland), 27.0% on Tyneside, and 21.6% in North West Durham, compared to a national average of 16.1%. This was after the peak of unemployment had been passed.

The highest rates of unemployment in the North East were thus to be found in coal mining areas in South West Durham (e.g. Bishop Auckland/Shildon/Crook) and in specialised shipbuilding areas on the cost (e.g. Jarrow, Sunderland). Eastern coalmining areas (e.g. Seaham, Houghton-le-Spring) generally had about 20% unemployment, while non-coal mining areas in the West (e.g. Stanhope, Consett) often had low rates of unemployment (in these cases about 10%).

58. Jewkes and Winterbottom (1933).

59. According to Beck (1951, Table 17).

60. Jewkes and Winterbottom (1933 pp.84,85,97,107).

61. Fogarty (1945 pp.31-33); all figures are annual averages. Irritatingly, while monthly figures for unemployment by towns were regularly published in the *Gazette* between the wars, these figures gave only the numbers unemployed, and not the percentage rates of unemployment. Presumably it would be possible to reconstruct the denominators required for the calculation of an unemployment rate

by inspecting archival material at the Public Records Office. This would be very useful in reconstructing a detailed geography of the 1929-33 slump. For present purposes, secondary sources published in the 1930s and 1940s are sufficient to provide a general indication of where in each region the slump was felt most severely, and also where it was felt relatively lightly.

62. Thomas (1935 p.414).

63. Board of Trade (1932a p.378).

64. Calculations based on Table 4.20 and Beck (1951 Table 17).

65. Board of Trade (1932 c pp.91-122) for Durham, and also for Northumberland; Board of Trade (1932d pp.22-52) for South Wales.

66. Board of Trade (1932a pp.94-147); also Daniels and Campion (1935).

67. Shimmin (1935) summarises the problems faced by the wool textile industry, located primarily in West Yorkshire, but without giving much statistical detail. Beck (1951 Table 108(11)) shows that insured employment in the woollen and worsted industry fell by 27% between June 1929 and September 1931.

68. Jewkes and Winterbottom (1933 pp.78-94).

69. Board of Trade (1932e pp.34-41).

70. Board of Trade (1932c pp.222-295).

71. Johnson (1964), Jackson (1973, especially pp.99-120). Jackson indicated a strong upswing in private enterprise housebuilding in London, both before and after the slump, with a slight reduction in activity during the slump. The boom in housing was not confined to Greater London, but was strongest there (see Jackson 1973 p.100). For a more general survey of building activity between the wars, see Aldcroft and Richardson (1968). The general picture would seem to be one of pent-up demand in the War years, reflected in a post-war housing shortage, leading to a high level of building activity in the 1920s, with the expansion of building activity during the 1930s being a reflection of the overall rapid expansion in economic activity after the slump. The building boom was an integral part of the general industrial boom, a point emphasised in Richardson (1967) and Richardson and Aldcroft (1968). Bowley (1937-8) questions this interpretation, arguing that the building boom was largely generated by rising middle class incomes, rather than by any boom in industrial activity. Her line of argument is, however, questionable. She noted that while the proportion of building workers to total population was twice as high in Southern England as in the Midlands or Northern England, the increase in the numbers employed was, in proportionate terms, faster outside the South. This is taken to imply that the building boom was regionally evenly spread. Furthermore, Bowley argues that since the North and Wales had a far higher ratio of new houses to increase in population than did the South, this indicates that the "drift to the South" had no effect on regional patterns of housebuilding. This, though, is a very unsophisticated test; not all the new housing in an area is built to house increases in population, though some certainly is. Bowley's figures pick up the point that the population increases in the North and Wales between 1921 and 1931 were very small, because of highly adverse

employment trends, while the population increase in the South was large; the differences in the new housing:new population ratio reflects the point that new housing *not* built for new population is divided by a very large increment in population in one part of Britain, but only a small increment of population in another. The key strategic variable, the component of new housing required to house an incoming population, is ignored. Furthermore, in assessing the regional aspects of the building boom, the important point was *not* that building employment was increasing faster outside the South than in the South, but rather that building employment per 1,000 population (and, by implication, building activity per 1,000 population) was twice as high in the South as elsewhere.

Thus, while the inter-war upsurge in building activity was certainly not confined to London and its surrounds, the construction boom was certainly at its most spectacular and most intense in London.

72. Beck (1951) does not make it clear, however, whether her employment figures refer to the level of employment within an area, or the number of employed people resident in an area. This could make a considerable difference to recorded changes in employment in a suburban context. There seems to be little reasonable doubt, though, that the London suburbs were expanding rapidly even during the slump itself, stimulated by the rapid expansion of the Underground system.

73. Not much can be said here about detailed changes in the fabric of everyday life in the 1930s; the level of analysis here is on the structure of change in the broader capitalist economy which may be assumed to underlie much of the most significant change in social life. The written social history of everyday life in the 1930s (as opposed to the history of social institutions) is still fragmentary, although such fragments can be highly informative (for example Gray, 1985). Of recent social histories of the 1930s, Branson and Heineman (1971), (also Branson 1975 for the 1920s), tie together the fragments most successfully, giving a vivid picture of everyday life in the depressed areas and elsewhere, and linking this to broader structures of change. Many "social histories" do not penetrate to the level of everyday life; an article by Whiteside (1987), for example, concentrates more on what social investigators considered to be the social consequences of unemployment (with a weighting towards the statistically measurable) than on the social consequences themselves. Similarly the social component of Glynn and Oxborrow's (1976) *Social and Economic History* is relatively weak; they conclude their chapter on inter-war unemployment (pp.159-161) by arguing that the unemployment problem has been exaggerated (though of course not forgetting "the cruel waste and tragedy, the irony and futility", etc.) and that had the problem been *really* serious there might have been a chance that charismatic leadership (for example Mosley) might emerge triumphant and solve the problem. Such fantasies have little point of contact with the basic social issues of the time, the day-to-day struggle to make ends meet at a time when jobs had suddenly become very scarce, the degradation of family life by economic severity, often exacerbated by authority, and the efforts made to hold families together, the often enforced migration of younger members of the community to more prosperous areas, and how they fared in their new homes, and so on. It is true that poverty, unemployment and economic suffering affected directly only a minority of the population, and the majority had rising living standards (a point which has often been emphasised, e.g. Glynn and Oxborrow 1976, Stevenson and Cook 1977),

but this should *not* be taken to mean that social and economic conditions were satisfactory between the wars, as has often been implied by the revisionist school. If arguments on such grounds were to be accepted, unemployment would not be treated as a major problem until it approached 50%! Chronic poverty through mass unemployment posed severe problems in the industrial communities between the wars, and to a large extent *new* problems. There were undoubtedly severe problems of unemployment at the troughs of pre-1914 business cycles, but expansion in the cyclical upswings meant that such problems were relatively short-lived; the persistence of very high rates of unemployment *throughout* the business cycle, though, had far-reaching effects between the wars.

74. The "deterioration" of local workforce quality in depressed areas as younger more vigorous members of the workforce migrated was a common theme for discussion at this time; see for example the comments made by Captain Euan Wallace on Durham and Tyneside in Board of Trade (1934, especially pp.74-75). Such considerations set limits to the possibility of solving the problem of depressed areas by a policy of transferring workers, as Capt. Wallace later pointed out (pp.92-93), though these problems were regarded mainly as consisting of a limited supply of young potentially transferrable labour.

75. Quoted in Branson and Heinemann (1971 pp.64-65).

76. Branson and Heinemann (1971 p.63).

77. *Historical Abstract*, Table 162, for unemployment; Table 4.11 (from Makower, Marschak and Robinson 1939) for migration.

78. For example Champernowne (1937, 1938), Dennison (1939), also Beck (1951 pp.33-35). Champernowne's treatment of the problem is particularly interesting since, in the days before pocket electrical calculators or computers, he was able to produce what is recognisably a shift-share analysis (see also chapter 3, note 34).

79. Champernowne (1937, 1938) and Beck (1951), which draws heavily on Champernowne's work, and provides more detailed statistical data.

80. The small number of units measured in the earlier slump has the effect of reducing the measured range of differential shifts. This has been taken into account in the statement in the text.

81. This was perhaps partly due to congestion costs, but largely due to the emergence of the post-war planning system, heavily influenced by the analysis of the 1930s by the Barlow Commission (Great Britain 1940). The increasing congestion at the centre of London, and the outward expansion at the edges of London, were seen as national problems. To counteract this, "Green Belts" were established around London and some other major cities, in which urban development was severely restricted (Thomas 1964, Elson 1986; the idea of a London Green Belt was central to Abercrombie's *Greater London Plan*, 1945, although most of the Green Belt creation, especially outside London, was in response to congestion during the 1950s boom), while around London a new town development programme was set up with the deliberate intention of diverting population and industry away from the congested urban core (Best 1964, Hall et al 1973).

82. See also Sandberg (1974) and Porter (1979).

83. Figures based on the regularly published *London and Cambridge Economic Survey*.

84. The inclemency of weather which slows down production in so many trades (agriculture, construction, etc.) increases the demand for fuel. The seasonality of production in coal is perhaps most strongly marked when coal is the dominant household fuel, which would have been the case at this stage.

85. Figures for employment by county from Beck (1951 Table 19).

86. Pollard (1969 p.227).

87. For blow-by-blow accounts of the political crisis, see Bassett (1958), Berkeley(1978). Skidelsky (1967) places these events in a slightly longer term context, suggesting that the 1929-31 Labour Government had never really found its way towards any set of radical policies to deal with the economic blizzard of the slump, even before the politically fatal 1931 crisis. See also Booth and Pack (1985 pp.26-34, 123-147).

88. See Bassett (1958 pp.212-337).

89. While a financial crisis may have been triggered off in the late Summer of 1931, the underlying pressures had built up over a large number of years, from at least the end of the First World War. Cairncross and Eichengreen (1983 pp.27-103) provide a very useful account of the various pressures building up over these years. Once the crisis had broken, there followed a period of competitive devaluation as various other countries attempted to reduce their exchange rates. Cairncross and Eichengreen (1983 p.103) suggest that far from this having an internationally deflationary effect, the removal of the constraints of fixed exchange rates allowed central banks greater opportunity to pursue policies of cheap money, and thus to stimulate production.

90. Figures taken from Pollard (1969 p.228).

91. Pollard (1969 p.227). Ingham (1984 pp.170-200; see especially p.189) also notes this long-term tendency, still operative up to the mid-1980s (the resolution of the 1987 crisis is awaited with interest) for the resolution of any financial crisis to be of the type favoured by the City, the Treasury and the Bank of England. He suggests however that it would be an oversimplification to see the decisions concerning the Gold Standard purely in terms of financial capital *dominating* industrial capital, since the depressions of the 1920s and 1930s severely affected the financial sector as well as the industrial sector. Thus the policies pressed by the City and Treasury were in many respects defensive rather than aggressive.

92. Pollard (1969 p.228).

93. Ingham (1984, see especially pp.225-235 for a summary) presents a dual structure model of British capitalism. During the early industrial period, he argues, the co-existence of financial capital and industrial capital was mutually beneficial, Britain's industrial monopolisation making London a "natural" major commercial centre, and activity in the City stimulating the demand for British goods. The divergence of interests in British capitalism came when

"at the precise moment at the turn of the century when industrial regeneration was called for to meet the German and American challenge, the City's diversion or draining of capital accelerated" (Ingham 1984 p.227). The revival of the free trade/protectionist debate mirrored this cleavage.

Keynes, despite a willingness at various stages to speculate on the stock market, was a strong critic of the bias towards financial capital rather than industrial capital in the formulation of economic policy, and indeed was highly critical of a situation where the degree of industrial development was dependent on waves of speculation, and noted that "when the capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill-done". (Keynes 1936 pp.147-164, quotation from p.159; see also Dillard 1948 pp.296-317). There is some degree of polemical overstatement here, perhaps, but the basic problem is still relevant.

94. Chapter 3.5 above. See Garside (1980 pp.50-51) and Beck (1951 pp.7-8).

95. *Historical Abstract*, Table 162, footnote. Garside (1980) follows this estimate.

96. See, for example, Lewis (1949), and his discussion of the French economy (pp.98-103). Caron (1979 p.259) notes that "though the effects of the crisis were felt later in France than in other countries, they lasted longer .... By the end of 1931 France was no longer the island of prosperity lauded by the commentators .... It was not until the last months of 1938 that a real recovery was seen".

Table 2.2, taken from Landes (1968) shows the relative weakness of the French recovery very clearly. In 1937 industrial output was only 4% higher than in 1932 (28% lower than in 1929), the next slowest industrial growth performance of eighteen other European and North American economies being registered by Belgium, where industrial output increased by 36.2% in five years.

97. See for example Aldcroft (1969) for a discussion of new industries in the 1920s, and Richardson (1967, 1969d) for discussion of new industries of the 1930s. For surveys of individual "new" industries in the 1930s, see the discussions in Buxton and Aldcroft (1979) on the motor industry (Miller and Church 1979), on aircraft manufacture (Fearon 1979), on electrical engineering (Catterall 1979), and on rayon (Harrop 1979).

98. e.g. Dennison (1939), Richardon (1967). Richardson's treatment of regional patterns of economic change in the 1930s has already been criticised in section 4.1 above; this section attempts to provide a more comprehensive alternative evaluation.

99. Royal Commission (1940 pp.164-170).

100. Royal Commission (1940 p.167).

101. Royal Commission (1940 p.100).

102. See especially Keeble (1968). In emphasising the continuity between inter-war and post-war decentralisation of industry, it should not be forgotten that decentralisation was beginning to gather pace in the late 19th century (Hall 1973a pp.733-736).

103. e.g. Political and Economic Planning (1939), Dennison (1939), Royal Commission (1940), also, at a slightly later date, Fogarty (1945 pp.389-450).

104. The total population of the eight counties mentioned was about twice that of County Durham.

105. Miller and Church (1979). The fall in output in the vehicles industry during the slump matched the fall in output in manufacturing industry as a whole, despite the vehicles industry being a "new" expanding industry in the context of the 1930s as a whole.

106. Fogarty (1945 pp.339-353) with specific discussion of Coventry's boom on pp.345-346.

107. Allen (1929) provides a detailed account of the industrial history of the West Midlands. See also Fogarty (1945 p.340).

108. Vernon's formulation is based largely on international patterns of industrial location. It is also, however, relevant to core-periphery patterns of industrial development within a national economy.

109. In Glamorgan and Monmouth, the 1931 Census recorded employment in metal manufacture standing at 39,000, or about a quarter of the level of employment in coal mining. By 1951 this total had increased to 63,000, and by 1961 to 71,000 (Lee 1979). In 1971 there were more iron and steel jobs in South Wales than coal mining jobs; this it must be emphasised is a very recent phenomenon, and it would be more accurate to regard South Wales as a traditional specialised coal mining area, rather than as a specialised iron and steel area. Access to the coast, availability of coal, a supply of heavy industrial workers released by the decline of coal mining, and relative proximity to the West Midlands and South East, meant that South Wales was a highly favoured area for the expansion of steel-making when decisions were teken to concentrate production in fewer and larger sites. See Keeble (1976 pp.162-171) and the more detailed account by Warren (1970).

110. Clearly the question of the "war economy" is involved here, with heavy industrial areas being relatively favoured, at this historical stage, by an increased demand for weaponry and military equipment. As the experience of 1920-21 shows, however, a switch to peace-time production can, especially if combined with a severe national recession, lead to major problems for such areas.

Since the Second World War, the emphasis in weaponry and military equipment has shifted away from heavy engineering and towards the more technologically sophisticated parts of the electrical engineering sector.

111. National Industrial Development Council of Wales and Monmouthshire (1937).

112. Fogarty (1945 p.103).

113. Termed "unemployment books" by Thomas (1937, 1938); see also Buxton and MacKay (1977 p.55).

114. Thus Hertfordshire (4.6%), Bedfordshire (3.0%), Buckinghamshire (4.9%), Sussex (4.4%), Middlesex (5.0%), Surrey

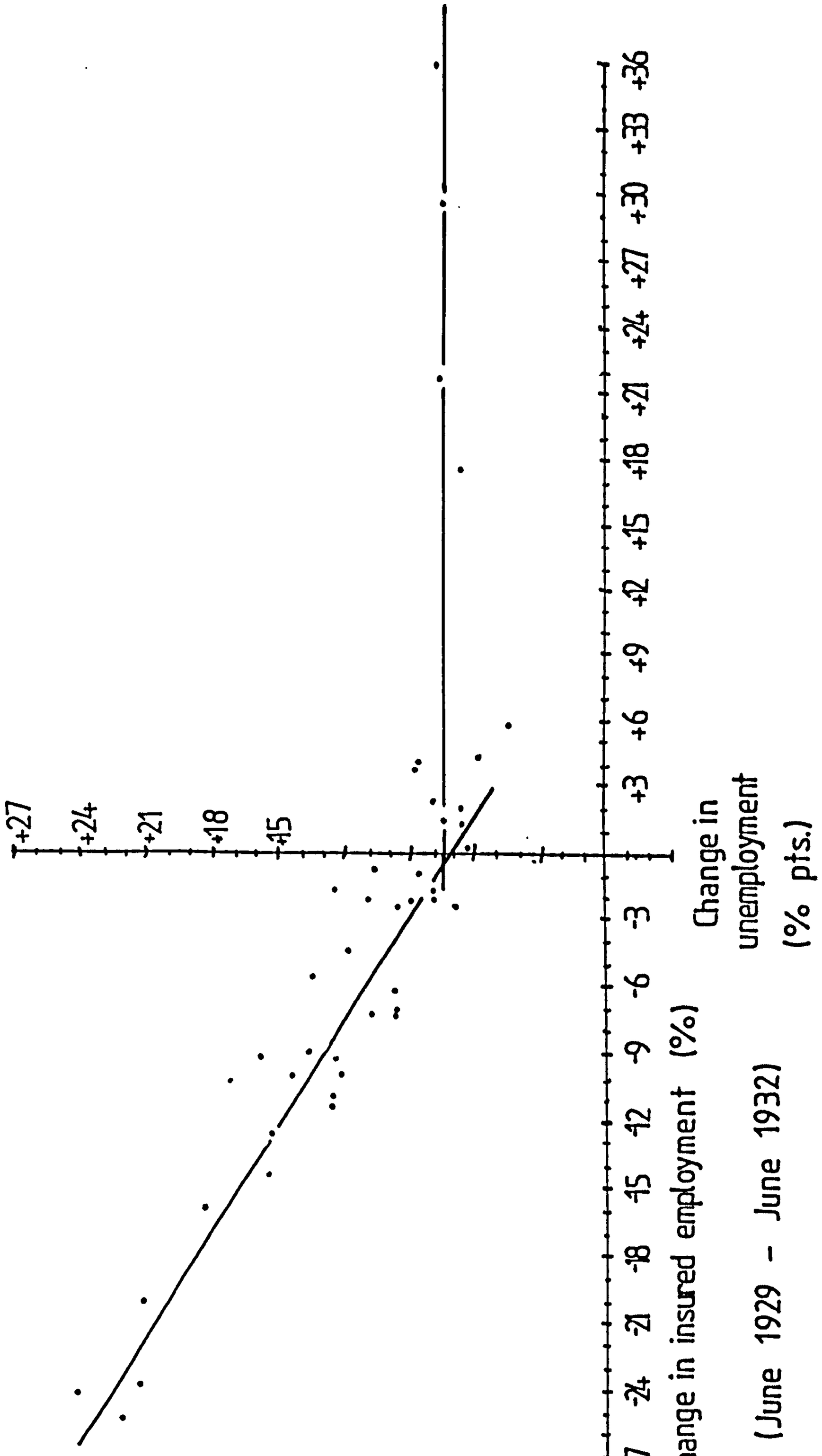
(5.3%) and Cambridgeshire (5.2%).

115. See for example Peach (1968), also the discussion in chapter 5.1 below.

116. See Singer (1938, 1939) for statistical discussions of this phenomenon. The accounts in Ministry of Labour (1934) also indicate an awareness that heavy reductions in employment during a slump result in a considerable problem of endemic long term unemployment in depressed areas. See also Beveridge (1937), and Crafts (1987), who notes that long-term unemployment in the 1920s was higher than had previously been appreciated.

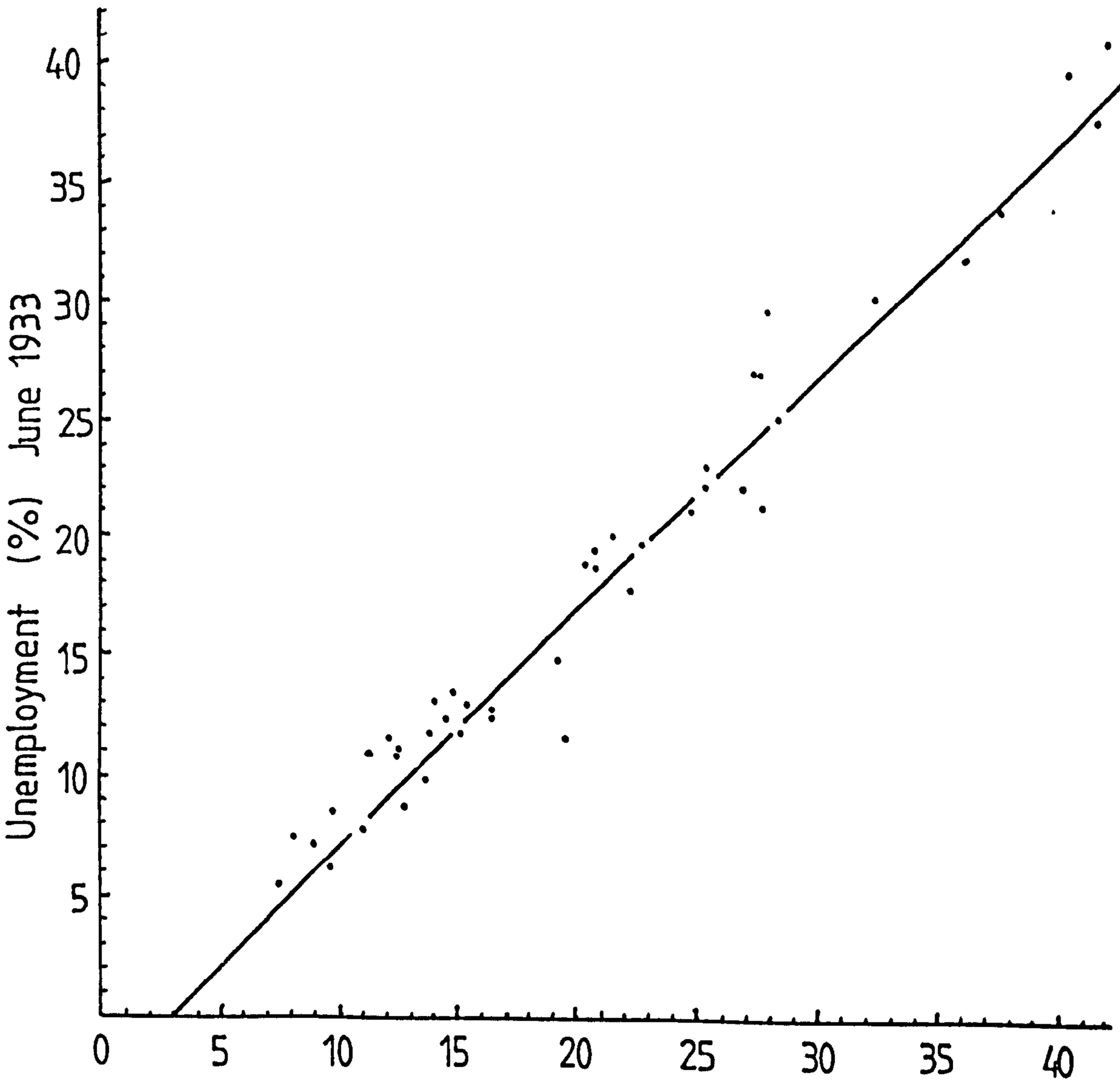
117. *Historical Abstract*, Table 161.

Fig 4.1 Changes in Employment and Unemployment by County, 1929-1932



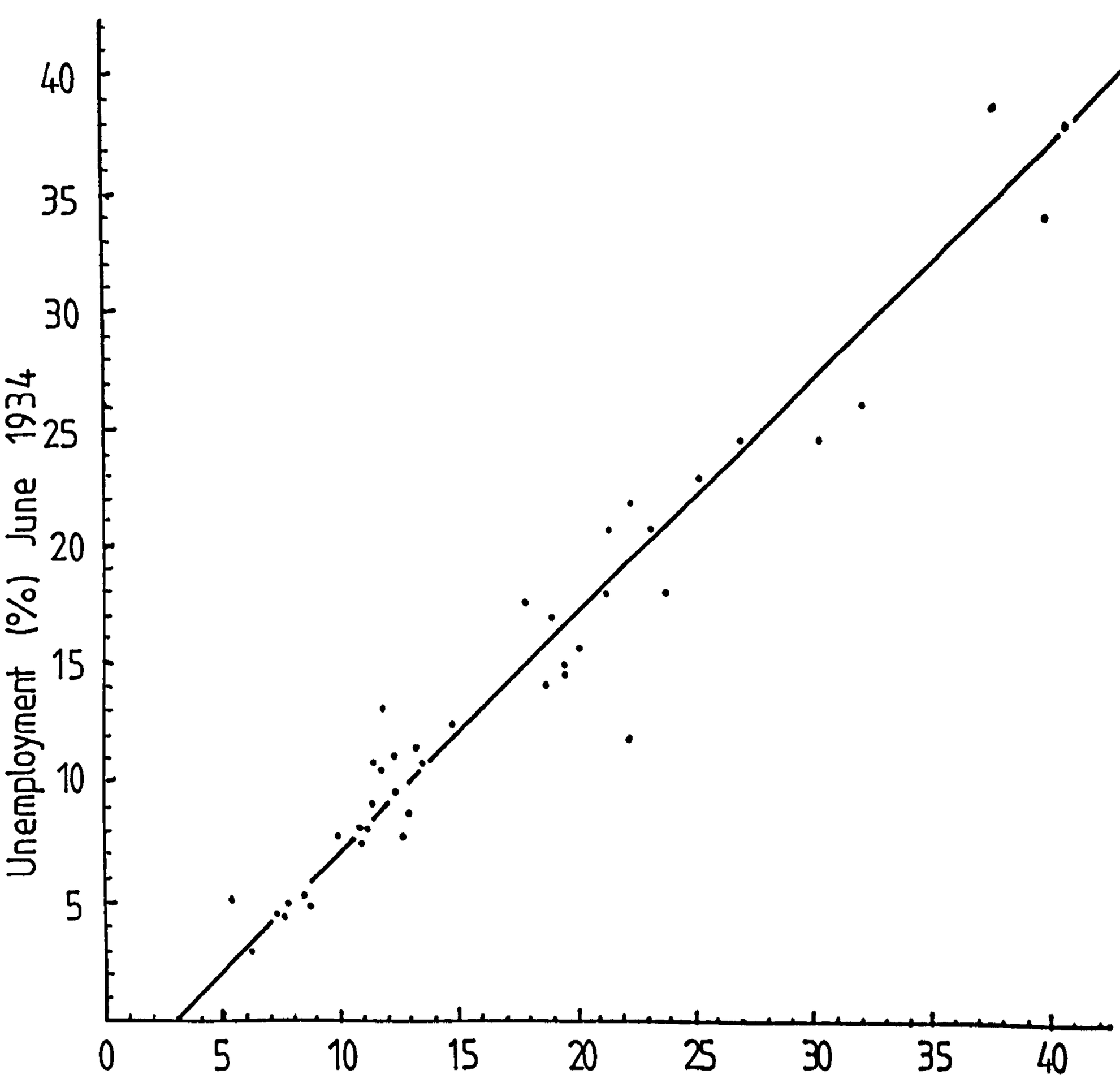
Source: Table 4.19

Fig 4.2 Unemployment Rates by County, June 1932 and June 1933



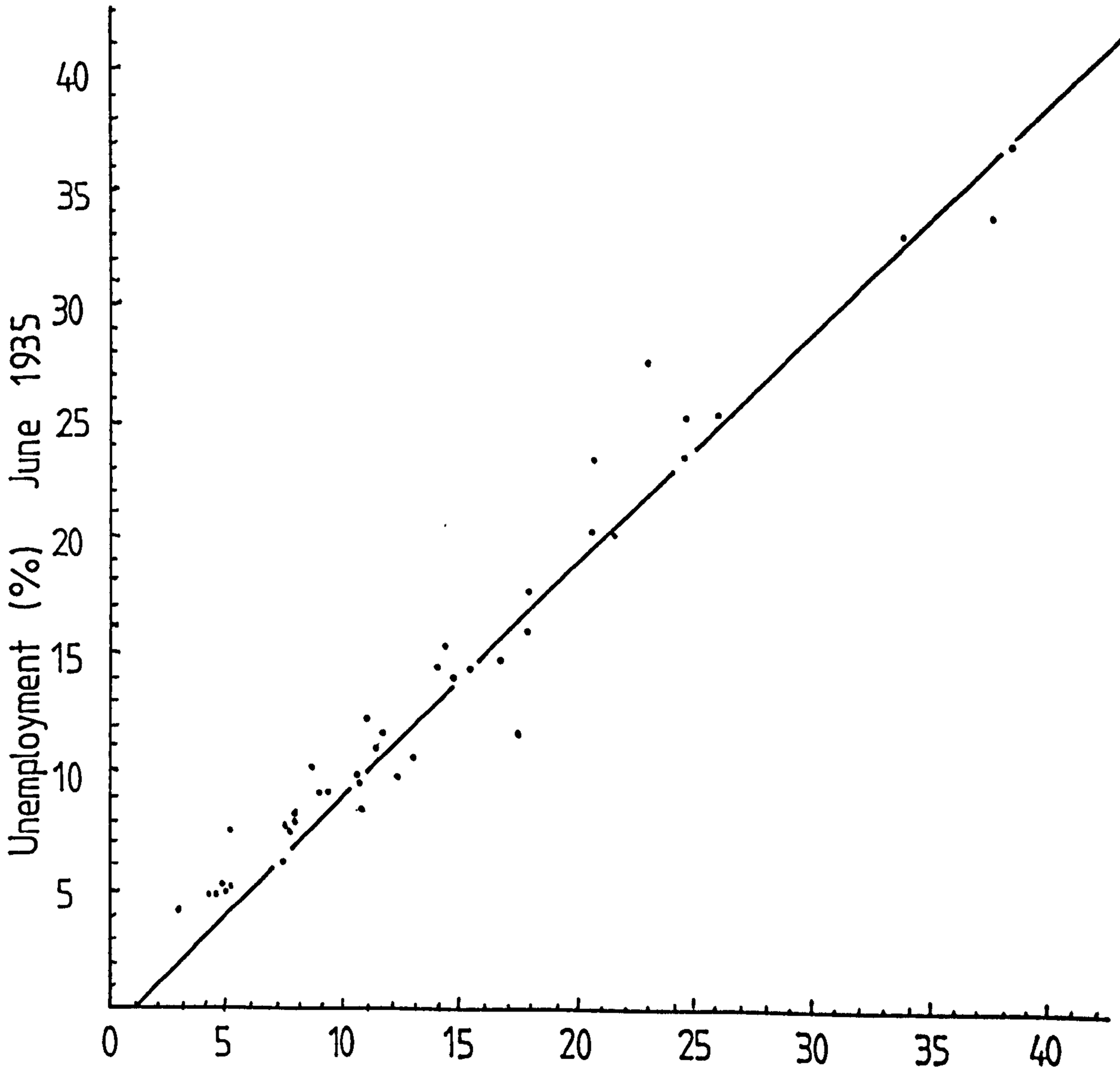
Source: Beck 1951 Table 18

Fig 4.3 Unemployment Rates by County, June 1933 and June 1934



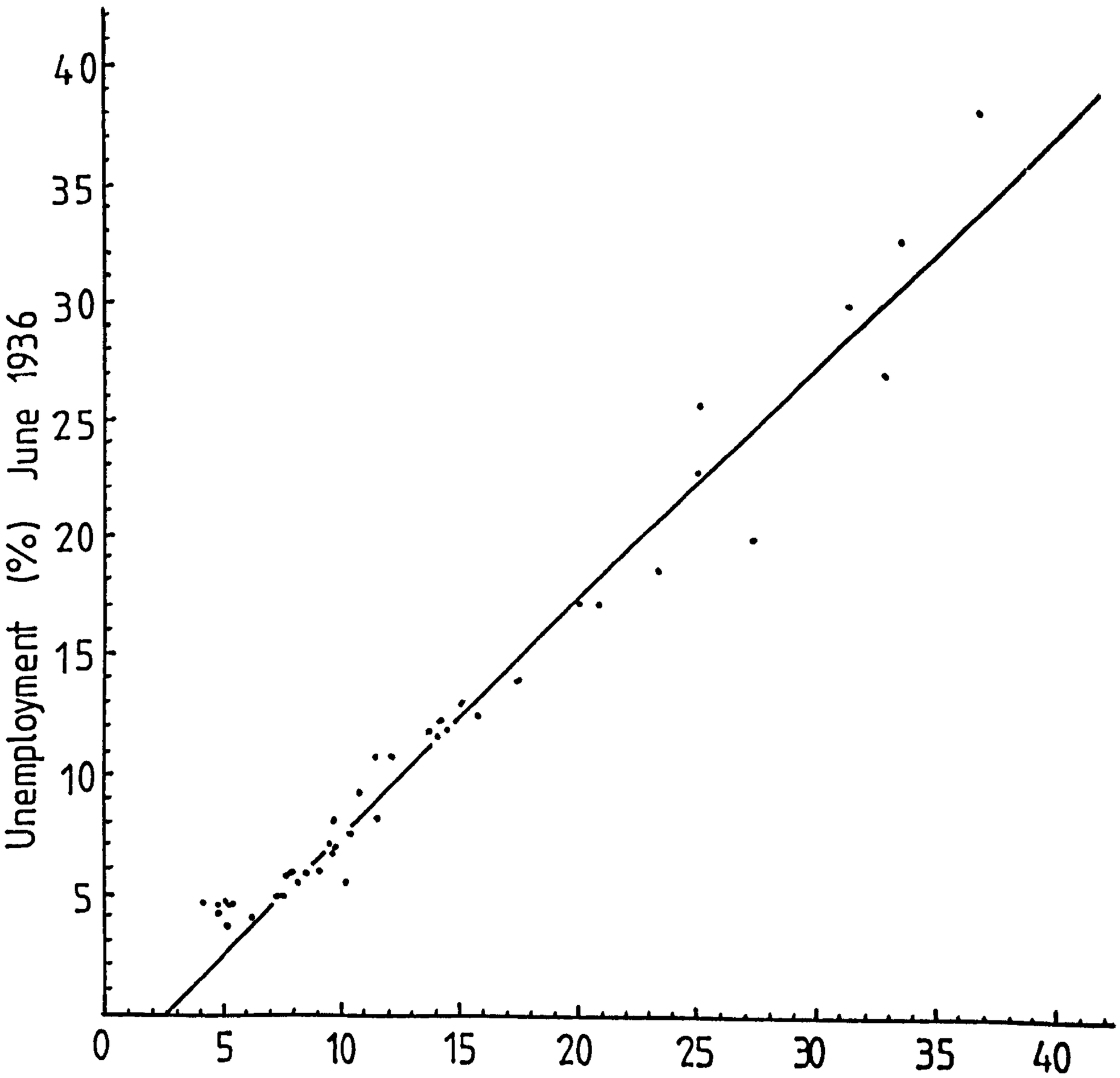
Source: Beck 1951 Table 18

Fig 4.4 Unemployment Rates by County, June 1934 and June 1935



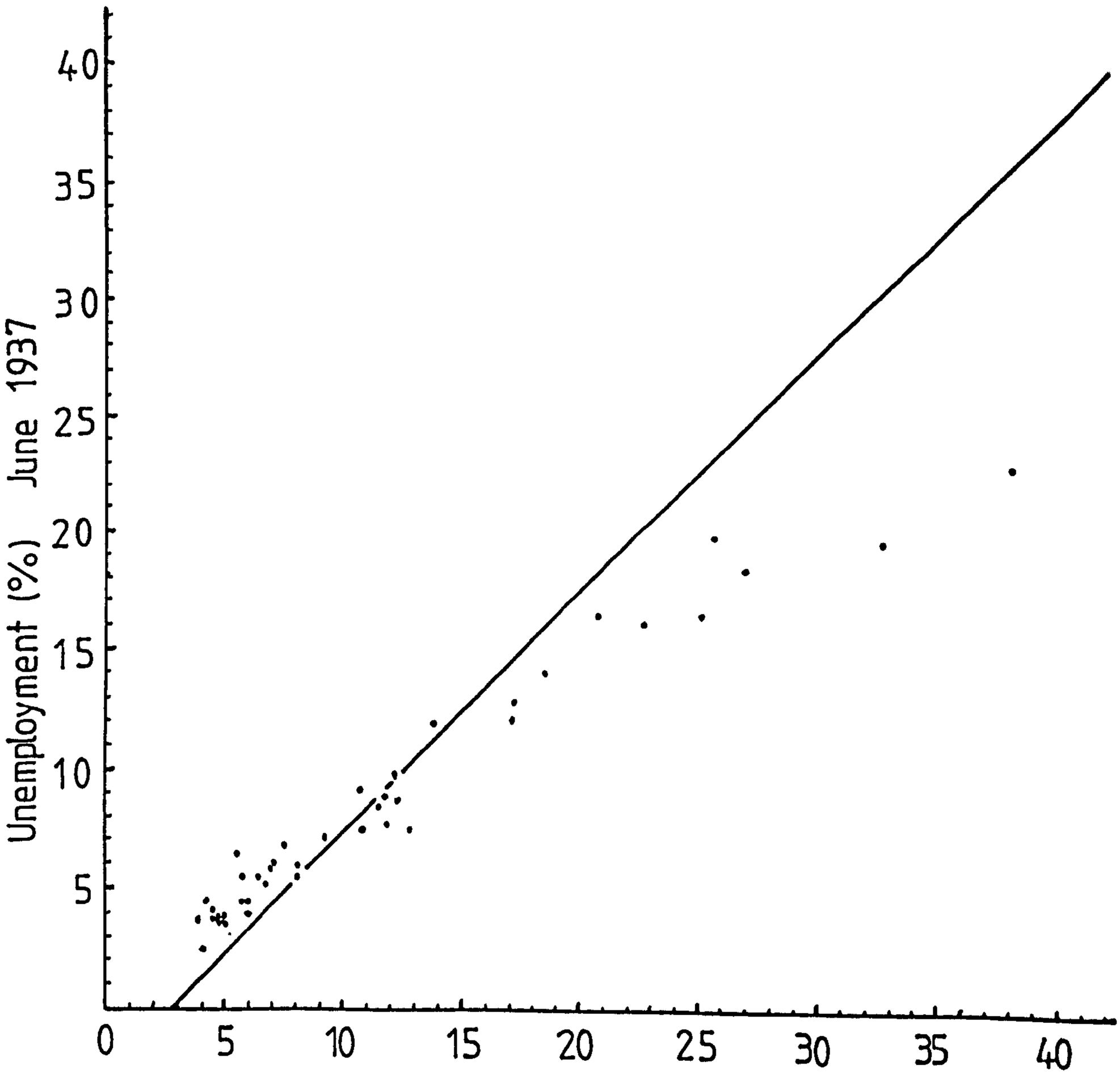
Source: Beck 1951 Table 18

Fig 4.5 Unemployment Rates by County, June 1935 and June 1936



Source: Beck 1951 Table 18

Fig 4.6 Unemployment Rates by County, June 1936 and June 1937



Source: Beck 1951 Table 18

UNIV DUNDEE