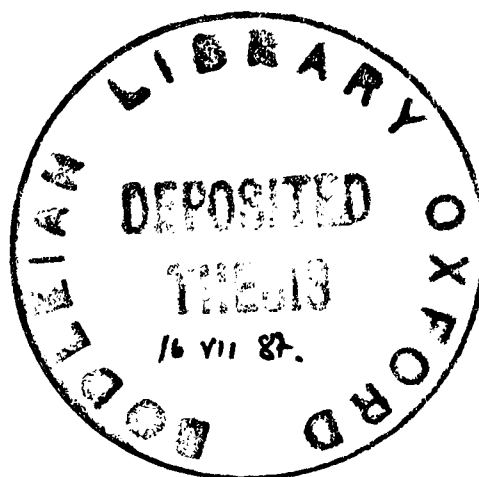


THE DEVELOPMENT OF THE FACTOR DISTRIBUTION OF INCOME AND
PROFITABILITY IN WEST GERMANY, 1945-1973

Wendy Carlin

Wadham College

Hilary Term, 1987 ✓



Presented in Partial Fulfilment of the Requirements
for the Degree of D.Phil.

University of Oxford

ABSTRACT

Title: The Development of the Factor Distribution of Income and Profitability in West Germany, 1945-1973

Name: Wendy Carlin

College: Wadham College

Degree and Term of Submission: D.Phil., Hilary 1987.

This study seeks to explain why the West German economy, one of the most successful industrialized economies in the post-war period, exhibited a trend decline in the share and rate of profit.

The contribution of three theories to the analysis of profitability is assessed. Neoclassical theory, especially the vintage production model, is used to analyse the adjustment of the structure of production to a slowdown in the growth rate of the labour force. Neo-Keynesian theory contributes by drawing attention to the authorities' aggregate demand management stance. The Kaleckian model focuses on the role of changes in oligopolistic price-setting behaviour and union bargaining power. This model is extended to an open economy and the effect on distribution of exchange rate changes is analyzed.

Series for profit shares and rates are constructed from the German national accounts. Conceptual problems in relating accounting data to economic concepts of factor shares and rates of return are investigated. New measures of the "warranted" real wage increase are developed.

An examination of the reconstruction of the German economy after 1945 shows how profitability was restored. Kornai's concept of "vegetative control" is used to throw new light on the functioning of the economy up to the Currency Reform.

The subsequent pattern of development of the German economy is traced. Interpretations of trends in profitability in the course of policy discussions by the Bundesbank, government, Council of Economic Experts, unions and business associations are analyzed.

A synthetic hypothesis is constructed to account for the pattern of manufacturing profitability. The explanatory role of labour shortage, growing openness, union bargaining power and exchange rate changes is confirmed. Set in the context of institutional and policy changes, these factors provide a more satisfying description of the determinants of profitability than previous, frequently monocausal, explanations.

TABLE OF CONTENTS

	<u>Page</u>
Acknowledgements	ii
Detailed Chapter Headings	iii
List of Tables and Figures	vi
List of Abbreviations	ix
Introduction	1
 <u>Part I: Theory and Measurement</u>	
Chapter One The Neoclassical Approach: Preferences, Choice of Technique and Profitability	10
Chapter Two The Neo-Keynesian Approach: Demand and Profitability	41
Chapter Three The Kaleckian Approach: Power Relations and Distribution	57
Chapter Four Measurement and Empirical Evidence	96
Data Appendix to Chapter Four	144
 <u>Part II: History, Performance and Policy</u>	
Chapter Five Economic Reconstruction and the Foundations of Postwar Profitability and Growth, 1945-55	151
Chapter Six Economic Development 1955-73: Performance and Policy	207
Chapter Seven Major Economic Actors: The Evolution of their Views about Distribution	253
 <u>Part III: Evidence and Interpretation</u>	
Chapter Eight The Course of Profitability in West Germany, 1950-73	300
Data Appendix to Chapter Eight	350
Chapter Nine Broad Hypotheses and Interpretations	352
Data Appendix to Chapter Nine	379
Conclusions	377
Bibliography	385

ACKNOWLEDGEMENTS

I wish to thank my supervisor, Andrea Boltho, for his guidance in the preparation of this thesis. His attention to detail in applied analysis and flair for establishing a coherent structure have been of immense value. David Soskice encouraged me to pursue this investigation and has provided constructive comments on parts of the draft.

A great number of others have provided advice at different stages of the research: Werner Abelshauser, Julian Alworth, Philip Armstrong, Michael Bacharach, Michael Funke, Bunt Ghosh, Christopher Gilbert, Dirk Ipsen, Alan Kramer, Michael Landesmann, Colin Mayer, Andrew Oswald, and Hans-Jürgen Schröder.

Production assistance from Gillian MacNamara, Lucy Glyn and Philip Armstrong is gratefully acknowledged, as is the help of the staff of the Library of the Oxford Institute of Economics and Statistics.

For his advice, support and assistance in a multitude of directions throughout the preparation of the thesis, I thank Andrew Glyn.

The George Webb Medley Fund, Wadham College and Christ Church provided generous assistance with travel expenses to West Germany. Finally, the financial support of the Rhodes Trust enabled the initial work to be done without the distraction of teaching commitments.

DETAILED CHAPTER HEADINGS

	<u>Page</u>
<u>Part I: Theory and Measurement</u>	
Chapter One The Neoclassical Approach: Preferences, Choice of Technique and Profitability	10
1. The Role of the Choice of Technique: The Solow Model	12
2. The Role of Scrapping and the Choice of Technique: Vintage Models	14
2.1 The clay-clay vintage model	17
2.2 The putty-clay vintage model	30
3. Conclusions on the Determinants of Distribution and the Rate of Profit in the Neoclassical Approach	38
Chapter Two The Neo-Keynesian Approach: Demand and Profitability	41
1. Aggregate Savings and Distribution: Kaldor and Robinson	42
2. Capacity Utilization and Profitability: The Underconsumptionist View	47
3. Conclusions on the Determinants of Distribution and the Rate of Profit in the Neo-Keynesian Approach	54
Chapter Three The Kaleckian Approach: Power Relations and Distribution	57
1. Micro-foundations of the Kaleckian Approach to Distribution	61
1.1 The determinants of wage-bargaining power	61
1.2 The degree of monopoly	71
2. Exchange Rate Changes and Distribution in a Kaleckian-type Model	87
3. Conclusions on the Determinants of Distribution and the Rate of Profit in the Kaleckian Approach	93
Chapter Four Measurement and Empirical Evidence	96
1. Introduction	96
2. Measuring the Factor Distribution of Income	99
3. Economic and Accounting Rates of Return	107
3.1 Theoretical Problems	107
3.2 Valuation problems in the estimation of rates of return	112
3.3 Disaggregated factor shares and rates of return	125
4. Post-Tax and Equity Rates of Return	128
4.1 Post-tax rates of return	128
4.2 Equity rates of return	132

5.	Measures of the "Warranted" Real Wage Growth	135
	Data Appendix to Chapter Four	144
1.	Sources of Data	144
2.	Data Series	146
3.	Illustrative Example of Divergence Between Accounting and Internal Rate of Return	150
 <u>Part II: History, Performance and Policy</u>		
Chapter Five	Economic Reconstruction and the Foundations of Postwar Profitability and Growth, 1945-55	151
1.	Introduction	151
2.	Physical Preconditions for Production	154
	2.1 Capital	154
	2.2 Labour	157
	2.3 Materials, food and transport	158
3.	Institutional Preconditions for Economic Growth	163
	3.1 The occupation authorities	165
	3.2 Political parties	167
	3.3 Organized labour	170
	3.4 Business	172
4.	The Nature of Economic Activity, 1945-48	175
	4.1 "Vegetative control" of economic activity	175
	4.2 The limits to the growth of production	182
5.	Monetary Reform and Deflation, 1948-49	183
6.	Exports and Investment: The Sources of Growth, 1949-55	192
	6.1 Exports	195
	6.2 Investment	199
Chapter Six	Economic Development 1955-73: Performance and Policy	207
1.	Trends	209
	1.1 Deceleration of growth, 1955-73	209
	1.2 The role of the external sector	218
	1.3 Price stability	224
2.	Cyclical Behaviour and Policy Intervention	230
	2.1 The export-led cyclical pattern	230
	2.2 The problem of "imported inflation" and the policy context	232
	2.3 Adoption of a package-deal approach to stabilization	241
	2.4 Reversion to the primary role for monetary policy	248
3.	Conclusions	250

Chapter Seven	Major Economic Actors: The Evolution of their Views about Distribution	253
1.	Introduction	253
2.	Distribution and Economic Policy: Bundesbank, Council of Economic Experts, Government	257
2.1	The Bundesbank	257
2.2	The Council of Economic Experts	262
2.3	The views of the Government	278
3.	The Role of Distribution: Union and Business Association Views	286
3.1	Unions	286
3.2	Employers' and Industry Associations	293
4.	The Distributional Projections of 1971-72: Summary and Conclusions	297

Part III: Evidence and Interpretation

Chapter Eight	The Course of Profitability in West Germany, 1950-73	300
1.	Explanation of Trends of Profitability: Previous Studies	302
2.	The Evolution of Profitability: A Cycle-by-cycle Analysis	307
2.1	Rising profits to 1955	310
2.2	Transition to labour shortage, 1955-61	318
2.3	Full employment and falling profits, 1961-65	326
2.4	Interruption to the decline in profitability in manufacturing, 1965-69	333
2.5	Falling profits, 1969-73	339
	Data Appendix to Chapter Eight	350
1.	Sources of data	350

Chapter Nine	Broad Hypotheses and Interpretations	352
1.	Broad Hypotheses	352
1.1	Introduction	352
1.2	The role of labour market	353
1.3	The role of the goods market and aggregate demand	358
1.4	A synthetic hypothesis	361
2.	Testing: The Regression Analysis	363
2.1	Explaining manufacturing profitability	363
2.2	Explaining the profit share and non-manufacturing profit rate	369
2.3	Applying the manufacturing regression coefficients to each cycle	372
3.	Conclusion	377
	Data Appendix to Chapter Nine	379
1.	Data series for regressions	379

LIST OF TABLES AND FIGURES

<u>Tables</u>	<u>Page</u>
I.1	Net rate and share of profit in manufacturing and business: International comparison. 4
1.1	Clay-clay simulation results. 25
1.2	Putty-clay simulation results. 34
1.3	Summary of comparative equilibrium results for neoclassical models. 40
4.1	Gross wage and profit shares, self-employment adjustments. 103
4.2	Levels and trends of wage and profit shares, net and gross, factor cost and market prices, manufacturing, 1955, 1973. 105
4.3	Gross and net profit shares, levels and trends, 1955-73, manufacturing and non-manufacturing. 106
4.4	Illustrative example comparing real, nominal and historic cost rates of return. 119
4.5	Discrepancies in the definitions of rates of return, non-agricultural business, 1961-73. 122
4.6	Discrepancies in data series: net rate of return, capital stock, manufacturing, 1961-73. 124
4.7	Net and gross rates of return, 1955, 1973, business, manufacturing, non-manufacturing 125
4.8	Disaggregated gross profit shares, DIW series 1955-73, manufacturing. 126
4.9	Disaggregated net profit rates, import and export shares, Eurostat series, 1965, 1973, manufacturing. 127
4.10	Estimates of the equity rate of return, business, 1961-73. 133
4.11	Decomposition of the "warranted" growth rate of real product wages, business and manufacturing, 1950-1973. 141
4.12	Decomposition of the "warranted" growth rate of real consumption wages, business, 1950-1973. 142
4.A1	Annual series for net and gross profit shares and rates, non-agricultural business, manufacturing, non-manufacturing, 1950-1973. 146

4.A2	Annual series for Eurostat disaggregated profit rates, 1960-1973, and import and export shares, 1965-1973.	147
4.A3	Illustrative example of divergence between accounting and internal rate of return.	150
5.1	Indices of production and gross investment, industry 1945-1949.	183
5.2	Real wages, product wages and productivity, industry, 1948-1952.	187
5.3	Indicators of competitiveness in manufacturing, international comparison, 1951, 1955.	199
6.1	Comparative growth rates of output and productivity, 1955-73.	210
6.2	Sources of growth of non-agricultural employment, 1955-1973.	211
6.3	Comparative growth rates of labour force and annual hours of work, 1950-73.	214
6.4	The industry composition of employment, 1955-1973.	220
6.5	The import content of supplies of manufactured goods: Germany, UK, France, 1950-70.	223
6.6	Growth rates of imports and exports, World, Germany 1951-73.	224
6.7	Comparative wage and price inflation, Germany, Italy, France, UK, 1955-1973.	228
6.8	Indices of relative export unit values, international comparison, 1962-73, manufacturing.	229
6.9	Cyclical behaviour of the components of aggregate demand, 1955-1973.	232
8.1	Summary indicators of factors influencing profitability, 1950-1955.	311
8.2	Summary indicators of factors influencing profitability, 1955-1961.	319
8.3	Summary indicators of factors influencing profitability, 1961-1965.	327
8.4	Summary indicators of factors influencing profitability, 1969-1973.	335

9.1	Regression results, net profit rate, manufacturing, 1950-1973.	366
9.A1	Data series for regressions, net profit rate, net profit share, capacity utilization import penetration, relative unit labour costs, unemployment rate.	379

Figures

Page

1.1	The relationship between the life of plant and the rate of profit.	24
1.2	Scrapping under monopoly.	28
1.3	Choice of technique and life of plant.	37
2.1	Robinson: a decline in "animal spirits".	47
2.2	Shifts in demand and costs: 2.2a: increase in autonomous investment 2.2b: fall in the price-cost margin.	52
3.1	Import competition and the price-cost margin.	83
6.1	Comparative growth rates of the manufacturing capital stock, Germany, France, Italy, UK.	215
9.1	Actual and predicted net rate of profit in manufacturing, 1950-1973.	368

ABBREVIATIONS

AER	American Economic Review
AERP&P	American Economic Review. Papers and Proceedings
BNLQR	Banca Nazionale del Lavoro Quarterly Review
BDA	Bundesvereinigung der Deutschen Arbeitgeberverbände (Confederation of German Employers' Associations)
BDI	Bundesverband der Deutschen Industrie (Association of German Industry)
BdL	Bank deutscher Länder
BMWi	Bundesministerium für Wirtschaft (Federal Ministry of Economics)
BOEQB	Bank of England Quarterly Bulletin
BOIS	Bulletin of the Oxford Institute of Statistics
BLS	Bureau of Labor Statistics
BJIR	British Journal of Industrial Relations
BPEA	Brookings Papers on Economic Activity
BRD	Bundesrepublik Deutschland
CDU	Christlicher demokratische Union (Christian Democratic Union)
CSU	Christlicher sozialistische Union (Christian Social Union)
DGB	Deutscher Gewerkschaftsbund (German Trade Union Federation)
DIW	Deutsches Institut für Wirtschaftsforschung
ECA	Economic Cooperation Act
EJ	Economic Journal
Eca	Economica
EEC	European Economic Community
EER	European Economic Review
ERP	European Recovery Program
FDP	Freie demokratische Partei (Free Democratic Party)

FRG	Federal Republic of Germany
GARIOA	Government Appropriations for Relief in Occupied Areas
GDGW	Gemeinschaftsausschuss der Deutschen Gewerblichen Wirtschaft (General Council of German Business)
IER	International Economic Review
IMF	International Monetary Fund
IMFSP	International Monetary Fund Staff Papers
IRJ	Industrial Relations Journal
JfNS	Jahrbuch für Nationalökonomie und Statistik
JPE	Journal of Political Economy
LBR	Lloyds Bank Review
LSE CLE	London School of Economics, Centre for Labour Economics
NBER	National Bureau of Economic Research
NIER	National Institute for Economic and Social Research
NS	New Series
OECD	Organization for Economic Cooperation and Development
OEEC	Organization for European Economic Cooperation
OEP	Oxford Economic Papers
OMGUS	Office of the U.S. Military Government in Germany
QJE	Quarterly Journal of Economics
REStud	Review of Economic Studies
RWI	Rheinisch-Westphalisches Institut für Wirtschaftsforschung
SNA	United Nations System of National Accounts
SPD	Sozialdemokratische Partei Deutschland (Social Democratic Party)
SVR	Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (Council of Economic Experts)

SVR JG Sachverständigenrat zur Begutachtung der
gesamtwirtschaftlichen Entwicklung. Jahresgutachten.
(Council of Economic Experts. Annual Report)

UN ECE United Nations Economic Commission for Europe

VfS Vierteljahresschrift für Sozial- und
Wirtschaftsgeschichte

VfZ Vierteljahrshefte für Zeitgeschichte

VzW Vierteljahrshefte zur Wirtschaftsforschung

VGR Volkswirtschaftliche Gesamtrechnungen (National
Accounts)

WiSta Wirtschaft und Statistik

WSI Wirtschafts- und Sozialwissenschaftliches Institut (DGB
Economic and Social Research Institute).

ZgS Zeitschrift für die gesamte Staatswissenschaft

Introduction

This study addresses the question of why West Germany, one of the most successful industrialized economies, should have exhibited a trend decline in the rate and share of profit in the post-war period, greater than that of most other comparable countries. There have been many attempts at an explanation of the U.K.'s experience of declining profitability and an adverse shift in the profit share. Often the focus in such British studies has been on the excessive bargaining strength of trade unions and on the poor competitiveness of industry as a result of low investment since the second world war: factors that would appear to transfer poorly to the West German case. The German economy is generally seen as having had an exceptionally good post-war growth record with a high degree of export success and a workable industrial relations structure unfettered by craft-based unions.

There would seem to be at least four reasons for investigating the development of profitability in the German economy. The first and more theoretical one is that profitability is likely to be an important determinant of investment through its effect on business expectations and the cost of finance. Hence an adverse trend in the profit share or rate could be reflected in a deterioration of the growth performance of the economy. The movement of profitability may also influence competitiveness both through its effect on investment in fixed capital and on expenditure on research, product development and overseas distribution. These concerns

are not merely theoretical - policy-makers in most countries have been preoccupied with the trend of profitability (particularly since 1973).

Symptomatic of this concern is, for instance, the following statement in the 1981 OECD Economic Outlook:

A number of OECD countries saw a trend decline in their profit shares in the 1960's and early 1970's. The first oil crisis then led to a dramatic rise in energy and unit labour costs, with profits initially absorbing much of the real income loss of worsened terms of trade, and investment falling sharply. An important aim of tight policies in the face of the second oil shock, in 1979-80, was to ensure that profit margins would be better protected by making it clear to employers and employees alike that inflationary settlements would not be financed.¹

Secondly, the analysis of trends in distribution should be of interest because it may illuminate the policy choices taken by the economic authorities in Germany over the period. As will be argued below, the pressures which underlay the decline in the profit share could have expressed themselves either in the form of rising inflation/falling competitiveness or in declining profits. The fact that the burden was taken by profits reflected in part deliberate policy choices on the part of German policy-makers as to the appropriate level and composition of aggregate demand.

Thirdly, the investigation of what happened to profitability and why is prompted by the fact that it was the subject of a lively debate from the early 1950's amongst the key economic actors in West Germany. The trade unions sought a shift in the factor distribution of income towards wages as

1 OECD, Economic Outlook, December 1981, pp. 6-7.

a means of improving the personal distribution of income and wealth. The employers associations opposed any such shift, highlighting its potentially unfavourable effects on investment and growth.

The Bundesbank entered the debate by pointing out that higher money wages would result either in higher prices (and therefore no shift in distribution), to which the authorities would be forced to respond with deflationary measures, or in a private sector-led recession if profitability was actually depressed. As for the federal government, for most of the period, it took the view that promoting investment and encouraging household savings was the appropriate response to the trade union argument for a higher wage share. The rationale was that shifts in distribution would be self-defeating (along the lines of the Bundesbank argument) and that continuing growth would provide growing living standards. Higher household savings would enable employees to secure a share of property income and at the same time help maintain the appropriate level of demand in the economy.

The final source of interest is more specifically German and arises from the fact that profitability (as already mentioned) fell more rapidly there than in most of the other major OECD countries. Internationally comparable figures¹ are

1 These are derived from P. Armstrong & A. Glyn, "Accumulation, profits, state spending: data for advanced capitalist countries, 1951-1983", Oxford Institute of Economics and Statistics, 1986. This data set is more comprehensive than that published in T.P. Hill, Profits and Rates of Return, (Paris, OECD, 1979).

Table I.1

Net Rate and Share of Profit in Manufacturing and
Business: International Comparison

A. Manufacturing

	<u>Rate of profit</u>		% p.a. g.r. 1951-73	<u>Share of Profit</u>		% p.a. 1951-73
	1951	1973		1951	1973	
W.G.	35.2	15.2	-3.7	30.7	19.4	-2.1
U.K.	23.4	10.6	-3.5	29.0	18.4	-2.0
Italy	20.3	10.4	-3.0	27.6	13.5	-3.2
France	14.5 ^a	14.3	-0.1 ^a	24.5 ^a	18.9	-1.2 ^a
U.S.	34.2	21.8	-2.0	24.5	17.4	-1.5
Japan	15.3 ^a	33.5	+3.8 ^a	22.1 ^a	32.9	+1.9 ^a

B. Non-Agricultural Business

	<u>Rate of profit</u>		% p.a. g.r. 1951-73	<u>Share of Profit</u>		% p.a. 1951-73
	1951	1973		1951	1973	
W.G.	21.7	12.2	-2.6	26.9	19.8	-1.4
U.K.	12.9	8.0	-2.1	22.2	18.8	-0.8
Italy	15.0	11.0	-1.4	27.3	14.8	-2.7
France	10.3	14.2	+1.5	27.5	21.1	-1.2
U.S.	20.2	13.1	-1.9	23.8	16.7	-1.6
Japan	15.2	19.6	+1.2	30.6	30.4	0.0

Note: ^a 1952

Source: Armstrong & Glyn, 1986, Tables 6,7,17,18.

presented in Table I.1. These show that for the period 1951 to 1973, the rate of profit in manufacturing and business fell more rapidly in Germany than in the other six major countries in the sample. For the share of profit, the relative decline was not as marked - Germany's fall was slower than Italy's in manufacturing and slower than those of both Italy and the U.S. in the business sector as a whole. Of the other countries, neither France nor Japan experienced a long-run decline

in profitability, while in the U.S., the rate of profit fell only from the mid 1960's onwards.

Germany, the U.K. and the U.S. show more rapid rates of decline of the rate than of the share of profit, indicating a rising capital/output ratio. By contrast, the capital/output ratio fell in France, Italy and Japan. Comparing data of actual rates of profit across countries is very dangerous given the differing assumptions made by national statistical offices about asset lives. But if the data shown in this table did, at least to some extent, reflect genuine, non-statistical, national differences, they would then suggest that the capital/output ratio was particularly low in Germany in 1951, leading to high profit rates at the outset, despite comparable profit shares.

Perhaps the most interesting conclusion that can be drawn from the data is that Germany, while not alone in experiencing a trend decline in both manufacturing and business profitability, and a shift over time in income distribution from profits to wages, exhibits a record that contrasts sharply with that of the other post-war economic success story, Japan, where both rates and shares rose.

This study therefore derives its motivation from the objective importance of profitability for economic performance, the fact that trends in distribution may provide a useful signal of economic policy objectives, that they were at the heart of important debates about economic affairs in West Germany, and from the contrast between the German experience and that of its major competitors.

The thesis divides into three parts. The first part deals with the issues of the theory and measurement of profitability. Three different theoretical approaches to the determinants of the factor distribution of income are examined for the insights they might provide for developments in Germany. The neoclassical theory emphasizes preferences and the choice of technique, the neo-Keynesian approach focuses on the role of aggregate demand, and the Kaleckian approach points to the importance of the market power of trade unions and oligopolists. The theoretical chapters have the character of a survey, rather than the construction of a new model, but some extensions to the basic theory are provided especially in relation to the problems posed by opening the economy to international trade (problems which none of the standard theories seem to tackle).

In the measurement chapter, the question addressed is the extent to which national accounting data can be used to provide meaningful estimates of economic rates of return and factor shares. Use is made of literature which has not previously been applied to aggregate time series analysis to clarify the relationship between accounting and economic rates of return. In addition, the extensive debate in the German economic research institutes over measurement questions is dealt with.

The second part of the thesis comprises three chapters dealing with history, policy and performance. Chapter five covers the years from 1945 to 1955. The aim of the chapter is to establish that the physical preconditions for rapid growth

existed shortly after 1945, but the institutional preconditions were only gradually restored. Use is made of Kornai's concept of "vegetative control" to describe the functioning of the economy before 1948 and as a means of drawing out the importance of the incentives facing producers and employees. The role of the Currency Reform and the associated measures to decontrol prices in 1948, along with the subsequent generalized deflation of 1949 in establishing a high rate of profit and the environment for a revival of investment are examined. Policy measures fostering openness of the economy are traced, and the chapter concludes with an appraisal of the importance of the Korean War boom and of government policy in launching the German economy on its rapid growth path.

This is followed by a chapter outlining the major developments in overall economic performance and policy in the years from 1955 to 1973. A number of themes are pursued: the slowdown in the growth rate of the German economy from well above to just below the average of the other large European economies over the period; the persistent balance of payments surplus; and the lower inflation rate experienced in Germany than elsewhere in Europe. An important theme in the thesis is the change in labour supply conditions. The growth rate of the labour force slowed down from 1.3% over the first decade (1950-1960) to just 0.2% p.a. from 1960 to 1973. This was reflected in record low unemployment rates of less than one per cent from 1961 onwards. The second part of the chapter turns to cyclical developments, charting the export-led cyclical pattern and the policy dilemma for the monetary

authorities created by so-called "imported-inflation". The watershed for economic policy was provided by the 1965-69 cycle, as a result of which fiscal policy was officially allocated a short-term demand management role. A third instrument - incomes policy - was introduced in the recovery from the 1966-67 recession, signalling the adoption of a package-deal approach to economic management. However, the experiment was short-lived and in 1973 the Bundesbank imposed a sharp deflation in an attempt to check what it felt was inflationary price and wage-setting behaviour, much as the authorities had done in 1949.

The aim of chapter seven which completes the second part, is to bring to light in a systematic fashion the views of the major economic actors in Germany about the course of the factor distribution of income and profitability. Although largely ignored in previous studies of distribution in Germany, there was, as noted above, a lively and interesting debate on the subject from the mid 1950's onwards.

In the third part, hypotheses accounting for the trends in profitability are formulated and tested. At the outset, a number of German studies of these trends are examined. The brief survey serves to illustrate the shortcomings of attempts at a monocausal explanation and suggests the need for a different approach. The methodology adopted was first, to examine the evidence provided by statistical indicators of the determinants of distribution suggested by the theories of chapters one to three. This examination is conducted cycle by cycle, as there can be no presumption that the same factors

lay behind the course of distribution in each sub-period.

From this descriptive exercise, it was possible to formulate a broad hypothesis as to the major determinants of the course of profitability. The second stage of the analysis is to test this hypothesis on the data for the period as a whole using a linear regression. The regression for the rate of profit in manufacturing conformed to the broad hypothesis, attributing significant explanatory power to variables which were picking up the influence of the neoclassical supply-side explanation (in terms of the availability of labour), and of the Kaleckian explanation (which stresses union bargaining power, the pressure of growing openness on the mark-up and the exchange rate). This suggests that a set of fairly complex factors lies behind the negative profit trends in post-war Germany - a conclusion that may not be startling but one that clashes with many of the more monocausal explanations that have been given in the past to explain profit trends both in Germany and elsewhere.

Chapter One

The Neoclassical Approach: Preferences, Choice of Technique and Profitability

The neoclassical approach to the determinants of the factor distribution of income is focused on the role of changes in preferences and in factor supplies. The routes through which the economy adjusts to such changes are via the intertemporal pattern of consumption, the choice of technique and the age structure of the capital stock. Within the neoclassical approach, there are two different strands, only one of which adopts a complete utility maximizing framework. The common context for the models is an atomistic, competitive economy in which there is a single type of economic agent whose objective is to maximize utility.

The most comprehensive neoclassical analysis of distribution sees it as the outcome of the intertemporal optimizing decisions of households. Household utility is assumed to be a function of present and future consumption and leisure and is maximized subject to a life-time budget constraint. Households borrow the means of production on which they will work and there is no requirement for a specific employer/employee relationship. Changes in the factor distribution of income occur in response to either a change in households' intertemporal consumption preferences or in factor supplies through the adjustment of the pattern of consumption over time, and if possible, in the choice of technique. However, the intertemporal choice model is not very useful for the analysis of profitability in an advanced industrial

economy. It rests on a life-cycle approach where investment is a deduction from wages for the purpose of providing for consumption in retirement.¹

A less fully fledged neoclassical model is provided by Solow who downplays the role of changes in intertemporal preferences in the analysis of distribution by assuming a constant propensity to save. The Solow aggregate production function and richer vintage capital models focus on the changes in factor intensity and therefore in distribution induced by changes in the growth rate of the labour supply, the rate of technical progress and in the savings share. In these models, the neoclassical tradition is represented by the role of factor price flexibility in ensuring the economy's adherence to the full employment steady-state equilibrium growth path, rather than by thorough-going utility maximization.

In spite of the force of the arguments made by Bliss against the practice in much of neoclassical growth theory of adopting a fixed propensity to save rather than modelling the full process of intertemporal choice, the Solow model retains its place as the textbook neoclassical approach. Bliss stated:

The consequence of falling in with this approach is that the sources of saving are treated in a mechanical or superficial manner. The habit of assuming "propensities to save", here meaning given fractions of income or profit, has badly infected the theory of economic growth, so that the assumption that ratios of saving to other

1 For an interesting discussion of such models, see S.A. Marglin, Growth, Distribution and Prices, (Cambridge Mass., Harvard University Press, 1984), chapters 2 and 15.

quantities are given constants is quite usual. Of course, there must be a propensity ex post, in that a certain proportion of income or profit will be saved in the solution to the model. But to assume such a ratio constant in advance is to take as given something that ought to be the subject of economic analysis.¹

Yet the attempt to integrate intertemporal preferences into a simple growth model as has been done by Marglin seems to provide little insight into the processes at work in a capitalist economy. We turn to the second strand of the neoclassical tradition where a constant propensity to save is assumed and attention is focused instead on the production side. The constant savings propensity dispenses with the explicit intertemporal choice aspect of the model and breaks the link between wages as the source of savings and growth.

1. The Role of the Choice of Technique: The Solow Model

The parameters of the Solow growth model are the savings propensity, s , the rate of growth of the labour force, n , the rate of Harrod-neutral technical progress, λ , their sum, the natural rate of growth, g , and the production function, f . Capital per efficiency unit of labour is k^* . In the aggregate production function model, technical progress is represented by an upward shift of the production function, since by assumption, all units of capital are able to make use of the innovation. Harrod-neutral technical progress is defined by an unchanged distribution of income at a constant capital/output ratio in the face of technical progress. It is labour-augmenting since the innovation has the net effect of

1 C.J. Bliss. Capital Theory and the Distribution of Income, (Amsterdam, North Holland, 1975), p.126.

raising the productivity of labour without altering that of capital.

We can interpret Harrod-neutral technical progress as the situation in which technical progress results in the cheapening of capital goods relative to labour and hence stimulates the substitution of capital for labour. This pressure for substitution exactly offsets the absolute capital saving tendencies of technical progress and leaves the productivity of capital and the rate of profit unchanged. As Salter points out Harrod's definition of neutrality is the one appropriate to an aggregate study since it concerns the net effects of technical change throughout the economy, i.e. both the direct effects within each industry and the indirect effect through the substitution induced by the cheapening of capital goods.¹

It is only Harrod-neutral technical progress which is consistent with steady state growth. Labour-augmenting technical progress means that employment can be measured in "efficiency" units so that the technical relationship between output and labour measured this way, for a given capital stock is unchanged. It is easy to see why only labour-augmenting technical progress is consistent with steady growth: the constant savings rate requires that output growth be at the same rate as that of natural units of capital. Secondly, capital and labour must grow at the same rate in efficiency units for steady growth, and with constant returns to scale,

1 W.E.G. Salter, Productivity and Technical Change, 2nd ed. (Cambridge, Cambridge University Press, 1966), pp.40-41.

output must also grow at this rate. Hence output grows at the rate at which capital grows in both natural and efficiency units, i.e. they are the same rate. This implies that technical progress is purely labour-augmenting.¹

If the economy is in a steady state growing at g , then gk^* represents the investment requirement per labour efficiency unit of a constant growth rate of output and sy represents the rate of savings per head. Thus, steady state growth is defined by the condition that $gk^* = sy$. We are now able to compare economies identical in all respects but differing in i) the rate of growth of the labour force, ii) the rate of technical progress, and iii) the savings share.

In this model, the effect of different rates of labour force growth and technical progress is identical: slower growth of either will result in a steady state in which k^* is higher and the rate of profit lower. The outcome for the factor distribution of income will depend on the elasticity of substitution of the production function: an elasticity of less than one implies that a proportionate increase in k^* is associated with a more than proportionate fall in the ratio of r to w , the wage, with the result that the profit share falls. A higher savings rate will also result in an increase in k^* , a lower profit rate and a lower profit share for a less than unit elastic production function.

2. The Role of Scrapping and the Choice of Technique: Vintage Models

1 R.M. Solow, Growth Theory: An Exposition, (Oxford, Clarendon Press, 1970), p.35.

Having briefly outlined the predictions of the Solow model, we will move to the vintage capital approach. Although, the results from the vintage models are not very different from those of the Solow model, the vintage approach provides a richer framework for the analysis of production and of the effects on distribution of the accumulation of capital in the face of different availabilities of labour and rates of technical progress. It avoids the capital aggregation problems which have plagued the Solow model and enables the effects of embodied technical progress to be depicted.

Using the vintage model, it is possible to examine the effects of changes in the growth rate of the labour force, of the rate of Harrod-neutral technical progress, and of the saving share on the steady state profit share and rate. Changes in the savings propensity can be interpreted as representing a change in preferences between current and future consumption, although the determinants of such changes are excluded from the model. The vintage production model draws attention to the dual role played by capital accumulation in the growth process: growth of the capital stock is required if new entrants to the labour force are to be equipped, and secondly, capital accumulation is required if the benefits of technical progress are to be appropriated. The vintage production model is ideally suited for the incorporation of embodied technical progress. Capital goods are assumed to be non-homogeneous and are labelled by their "birth date". Each vintage or tranche of capital goods will be characterized over its entire life by the level of

productivity associated with the technology available when it was installed. Technical progress is embodied in each successive vintage so that capital goods of a more recent vintage are more productive than older equipment.

Although in the steady state, the growth rate is determined by the growth rate of the labour force and the rate of technological progress, out of steady state the growth rate will depend on the pattern of capital accumulation as the balance between more recent and older vintages is altered. The vintage model provides a more plausible explanation of this than does a model with purely disembodied technical progress.

Before examining comparative steady state growth paths, it is necessary to make a further assumption about production. Although technical progress is embodied, there still remains the question as to whether a change in the labour requirements of each vintage is possible in the face of relative factor price changes. This is the distinction between so-called "putty-putty", "putty-clay" and "clay-clay" technology where the first term refers to the ex ante substitutability between capital and labour and the second, to the ex post substitutability. In a vintage model, the incorporation of new developments in technology is not possible once the equipment has been installed. Thus, a natural assumption is that in the face of factor price changes an ex post change in labour requirements is also not possible. In other words, technology is either putty-clay or clay-clay.

The simplest model is clay-clay where it is assumed that there is only one technique available to businesses when they are planning their investment, irrespective of relative factor prices. This means that the burden of the long-run adjustment of the economy to any shock must be on changes in the economic life of capital. Economic obsolescence takes the place in the clay-clay vintage model of changes in technique in the non-vintage Solow model.

The second vintage model, putty-clay, is based on the assumption that in the planning stage there is a range of techniques of production available, the choice of which depends on relative factor prices and, given that capital is clay following installation, on expected future factor prices. Thus in response to any shock, there are two margins of adjustment: the capital output ratio on new plant, and the length of life or scrapping date of the existing capital equipment.

2.1 The clay-clay vintage model

The steady state growth of a clay-clay economy¹ requires that technical progress be purely labour-augmenting (Harrod-neutral) and to simplify matters it is assumed that capital goods do not wear out physically. To begin, consider the employment on the new vintage, v . In steady growth, with

1 The model has been analyzed by Salter, Productivity and Technical Change, 1966 and the steady state growth results are proved by R.M. Solow, J. Tobin, C.C. von Weizsäcker, M. Yaari, "Neoclassical growth with fixed factor proportions", REStud. XXXIII (2), 94 (1966), pp. 79-116. Chapter 3 of Solow's, Growth Theory: An Exposition, 1970, provides an excellent introduction to the model.

labour force growth at rate n , the labour to work on the new plant will comprise (i) the new entrants to the labour force this year which can be denoted $l_0 e^{nt}$, where l_0 is the labour available at time zero, and (ii) the workers released through the scrapping of obsolete plant. In steady growth, the workers released each year will also be growing at a constant rate, n . Thus employment on vintage v at time t can be written as $L(v,t) = l_0 e^{nt}$. Similarly, employment on the newest vintage at time $t-b$ is $L(v,t-b) = l_0 e^{n(t-b)}$.

Total employment at time t is simply the sum of employment on each vintage: $L(t) = l_0 e^{nt} [(1 - e^{-nq})/n]$, where q is the age of the oldest economically viable vintage.

Since technical progress is Harrod-neutral, output per unit of labour on the newest vintage at time t is $\lambda(v,t) = \lambda_0 e^{\lambda t}$. Total output, Y , produced on the newest vintage at time t is $Y(v,t) = l_0 e^{nt} \cdot \lambda_0 e^{\lambda t}$. Hence total output at time t is $Y(t) = l_0 \lambda_0 e^{(\lambda+n)t} [(1 - e^{-(\lambda+n)q})/(\lambda+n)]$.

Investment, I , at t can be calculated quite simply: the capital/output ratio V is constant, so $I(t) = V \cdot Y(v,t)$. The gross investment or saving share,

$I(t)/Y(t) = [V(\lambda + n)] / [(1 - e^{-(\lambda+n)q})]$, i.e. a constant, s . Or, given the savings ratio, s , it is possible to calculate the economic life of plant, q , in the steady state¹:

$$q = -1/(\lambda + n) \cdot \log(1 - [V(\lambda + n)]/s). \quad \dots [1]$$

In the steady state, then, output and investment are growing at the constant rate $n + \lambda = g$. To calculate the gross profit share it is necessary to have a scrapping rule.

1 Solow, et. al., REStud. 1966, p.86. equation 14.

Under the assumption of perfect competition, each capital good will be used until its quasi-rent is reduced to zero. Once output per worker on an old plant is less than the wage, the plant will be shut down. In a competitive system, the labour force will be allocated first to the newest, most productive plant and the wage will be determined by the output per head on the least productive vintage which can be operated with the available labour force. The wage is, then, $w(t) = \lambda(t - q, t) = \lambda_0 e^{\lambda(t-q)}$. Should plant of an earlier vintage than $t-q$ remain in operation, profit maximization would dictate that the owners of a more recent capital good would bid away the labour operating the "obsolete" plant by offering the wage $w(t)$ at which the older vintage would be unable to cover its operating costs.

Through these mechanisms, it is clear that in the steady state, labour will be employed only on newer vintages and once a vintage is rendered unprofitable by the rising real wage, it will never come back into operation. At any instant of time, different vintages will be earning different quasi-rents since a uniform wage is paid to labour working on plants differing in productivity. Over its economic life-time, each vintage with its output per head constant, will see its quasi-rents falling as the wage rises.

With the wage, w , set by productivity on the marginal plant in use, the wage share is $W/Y = w(t).L(t)/Y(t)$, where W is the wage bill, and the share of gross quasi-rent in gross output i.e. the gross profit share is

$$\frac{\text{PROF}}{Y} = \frac{n(e^{\lambda\tau} - 1) - \lambda(1 - e^{-n\tau})}{n(e^{\lambda\tau} - e^{-n\tau})} \dots [2].$$

It is now possible to deduce how the factor distribution of income varies with changes in the rate of growth of the labour force, the rate of technical progress and in the gross savings ratio. First, it can be shown quite simply that the share of profits varies directly with the life of plant¹. The longer is the life of plant or in other words, the greater is the discrepancy between productivity on the oldest plant in use (and hence the wage) and the newest equipment, the greater is the difference between the wage and average productivity on the capital stock in use. With productivity growing at a constant rate, the larger the difference between the wage and the average productivity per worker over the capital stock in use, the greater is the share of quasi-rents or profits in national income. Therefore any change in parameters which results in a reduction in the life of plant implies a lower profit share.

(1) Higher saving share

A higher share of saving and therefore of investment in gross output will, for given n , λ , and V , imply that each year a larger proportion of the labour force is employed on newer vintages. The number of vintages in operation is smaller and hence, the life of plant is lower. This result highlights an important aspect (and limitation) of the steady state vintage model: namely, although investment is required if firms are

1 *ibid.*, pp. 88-9.

to benefit from technical progress, the amount of investment does not affect the rate of technical progress. For example, if economy A has a greater proportion of its capital stock of a more recent vintage, it will have productivity on this year's equipment exactly the same as in economy B where fewer resources have been devoted to investment. Of course, average productivity is higher in economy A. Or to put it another way, in the transition from a lower to a higher savings share, average productivity will rise more rapidly than the rate of technical progress as the proportion of more recent, more productive equipment rises.

(ii) Lower rate of growth of the labour force

Consider two economies which are alike in initial conditions, including the size of the labour force, and in savings ratio, capital/output ratio and rate of technical progress. The only difference between the two is that economy A has a lower labour force growth rate. There are two implications of the slower rate of labour force growth in economy A: first, in each period, output will be less than in economy B and with a constant investment share, investment will be less. This implies that each vintage of equipment requires less total labour in economy A than in B. Secondly, less labour is available from new entrants to the labour force to equip corresponding vintages in economy A as compared with economy B. At first sight it appears that the outcome of these factors for the life of plant could be ambiguous.

However, since the rate of technical progress is the same in both A and B, the relative rate of growth of output and

investment ($g_A/g_B = (\lambda + n_A)/(\lambda + n_B)$) will not be reduced by as much as the relative rate of growth of new entrants to the labour force (n_A/n_B). Hence, to provide labour for each new vintage of equipment in economy A it will be necessary to scrap a larger amount of old capital goods. The life of plant and the share of profit will therefore be lower in economy A than in B. Similarly, on the transition from a steady state with a higher labour force growth rate to one with a lower one, the average length of life of plant will fall i.e. the rate of scrapping will rise and the profit share will fall.

(iii) Lower rate of technical progress

There are two offsetting tendencies in operation in the economy with the lower rate of technical progress: on the one hand, output and investment are growing more slowly, with the result that more efficient plant which will render old vintages obsolete appears more slowly. This tends to lengthen the life of plant. On the other hand, the lower capital/labour ratio on each vintage tends to shorten the life of plant. In fact, Solow et. al. show that the second effect outweighs the first: in the economy with slower technical progress, the available labour can be spread over fewer vintages¹ and the share of profit is lower.

To summarize, the profit share varies inversely with the savings ratio, and directly with the rate of growth of the labour force and of technical progress. From the determinants of distribution in the clay-clay model, attention turns to the net rate of profit. A profit maximizing firm will invest such

1 Solow et. al., REStud. 1966, pp. 102-3.

that the initial cost of the investment is equal to the discounted present value of the expected flow of quasi-rents produced by the capital goods over their economic life-time. In a competitive economy in the absence of uncertainty, the discount rate is equal to the net rate of profit since investment will continue until every opportunity for a return greater than the market rate of interest has been taken up.

The initial cost of new plant to be worked by one worker is $V\lambda_0 e^{\lambda_0 t}$ where the price of the single good is unity. The quasi-rent, ρ , of a unit of capital of vintage t at time t is

$$\rho(t, t) = \lambda(t) - w(t) = \lambda_0 e^{\lambda_0 t} (1 - e^{-\lambda_0 t}) \text{ and}$$

$$\rho(t, t+b) = \lambda_0 e^{\lambda_0 t} (1 - e^{-\lambda_0 t} e^{\lambda_0 b}).$$

Hence, setting the initial cost equal to the discounted present value of the stream of quasi-rents gives¹

$$v = \frac{r(1 - e^{-\lambda_0 v})}{r(r - \lambda_0)} = \frac{\lambda_0(1 - e^{-r v})}{r(r - \lambda_0)} \dots [3].$$

This defines r , the net rate of profit (the discount rate).

The direct relationship between the life of plant and the rate of profit can be illustrated intuitively using figure 1.1²: over the life of any investment, v , the wage will rise from $w(t)$ to $w(q) = \lambda(v, q)$. The net rate of profit discounts the sum of the quasi-rents to equal the initial cost of the plant. Given the rate of technical progress, any lower q , say q' , requires a lower rate of discount to equate triangle ABC to the same initial cost of plant. The real wage w' exceeds

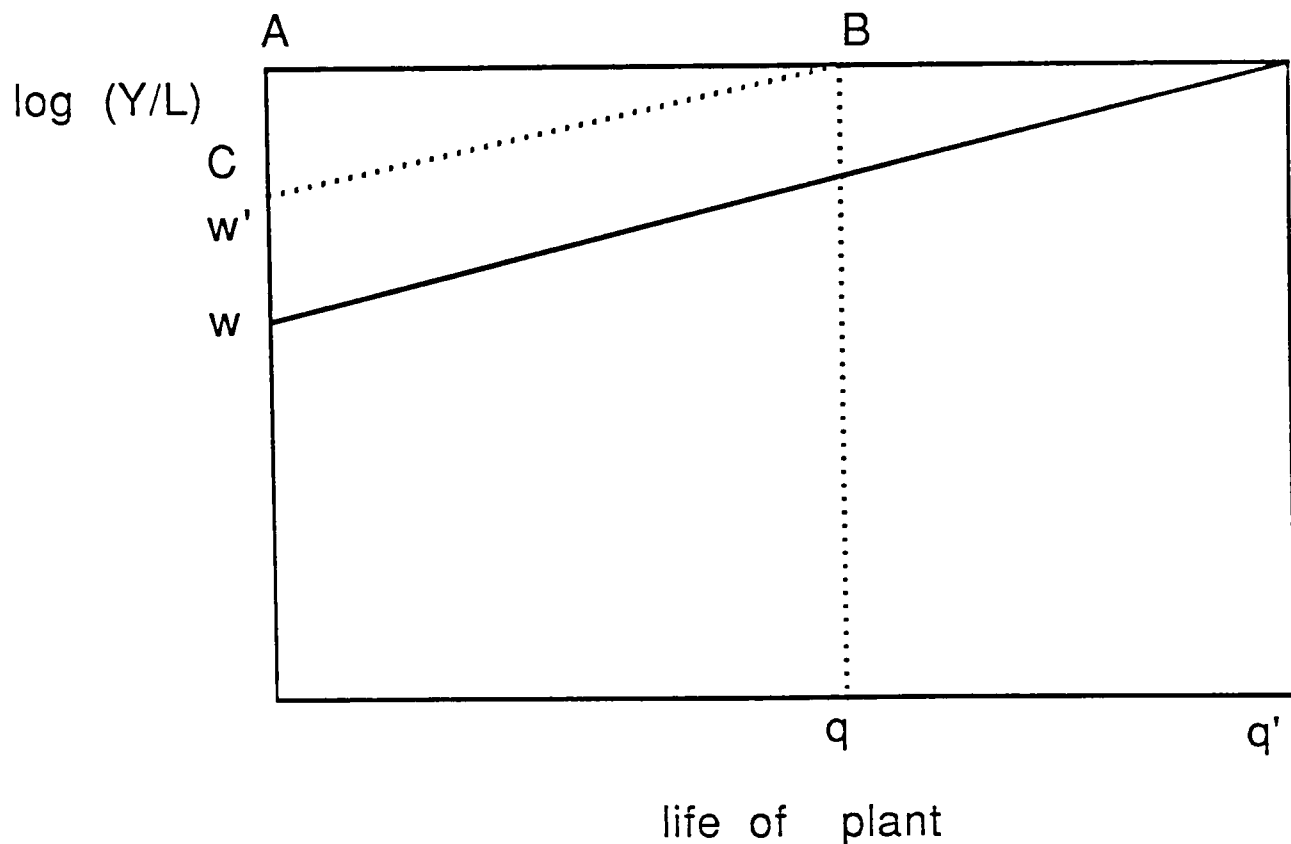
1 *ibid.*, equation 33, p. 100.

2 From W.A. Eltis, A Theory of Growth and Distribution, (London, Macmillan, 1973), figure 3.3, p. 48.

w. Hence, a higher savings share, a lower growth rate of the labour force or of technical progress will imply a lower net rate of profit as well as a lower gross profit share.

Figure 1.1

The Relationship between the Life of Plant and the Rate of Profit



Using equations [1] to [3] above and making assumptions about the probable range of parameter values, it is possible to calculate the new steady state values for the gross profit share and the net rate of return associated with a change in the growth rate of the labour force, a change in the rate of technical progress or a change in the savings share. Part A of Table 1.1 provides a summary of the results and although the relationships are non-linear, it is possible to give a rough indication of the responsiveness of the profit share in the new steady state to different parameter values. It must

Table 1.1

Clay-clay Simulation Results

<u>Savings sh</u>	<u>Rate of tp</u>	<u>LF g.r.</u>	<u>Prof sh.</u>	<u>Prof rte</u>	<u>Life</u>	
%	%	%	%	%	yrs	
PART A						
(a) Variations in the Savings Share (capital/output = 2)						
15	4	2	46.8	30.3	26.8	
17	4	2	37.0	23.4	20.4	
20	4	2	28.6	14.7	15.3	
(b) Variations in the Rate of Technical Progress (capital/output = 2)						
20	5	2	38.4	23.3	17.2	
20	4	2	28.6	14.7	15.3	
20	3	2	20.1	5.1	13.9	
(c) Variations in the Labour Force Growth Rate (capital/output = 2)						
20	5	3	44.8	27.8	20.1	
20	5	2	38.4	23.3	17.2	
20	5	1	34.0	19.6	15.3	
20	5	0.1	31.0	16.6	14.0	
PART B						
(d) Variations in the mark-up. m, (the % markup of price over direct costs on the marginal vintage in operation)						
m						
20	15	5	2	46.4	27.6	17.2
20	10	5	2	44.0	26.3	17.2
20	5	5	2	41.3	24.9	17.2

be stressed that nothing has been said about the path from one steady state to another - the results must be treated with caution and as strictly representing only comparisons between steady state paths. A fall in the rate of growth of the labour force by one percentage point is associated with a fall

of one tenth in the profit share. The profit share is more sensitive to a fall in the rate of technical progress: a fall of 1/2 percentage point is associated with a fall of about 13% in the profit share. And a rise in the savings ratio of one percentage point is associated with a fall of between 6 and 10% in the profit share.

A note on imperfect competition under clay-clay

Once the assumption of perfect competition is relaxed, it becomes necessary to draw the distinction between the scrapping decision and the replacement decision.¹ Under perfect competition, equipment will be scrapped when it fails to cover operating costs. Older vintages will be replaced by the newest vintage when the operating cost of producing a unit of output with the oldest machine exceeds the combined operating and capital cost of production on the newest vintage. It is clear that in perfect competition, the scrapping and replacement criteria are identical since a firm considering replacement finds that other firms are making use of the most modern technology. Production on new plant increases and drives the price down, both rendering the oldest vintages unprofitable and ensuring that new plant is built, until only a normal rate of return can be earned (over and above the recovery of the investment outlay). In other words, competition ensures that the quasi-rents of the oldest vintage are exhausted when replacement becomes profitable.

This identity between scrapping and replacement lapses

1 This section draws on Salter's discussion, Salter, Productivity and Technical Change, 1966, pp.90-93.

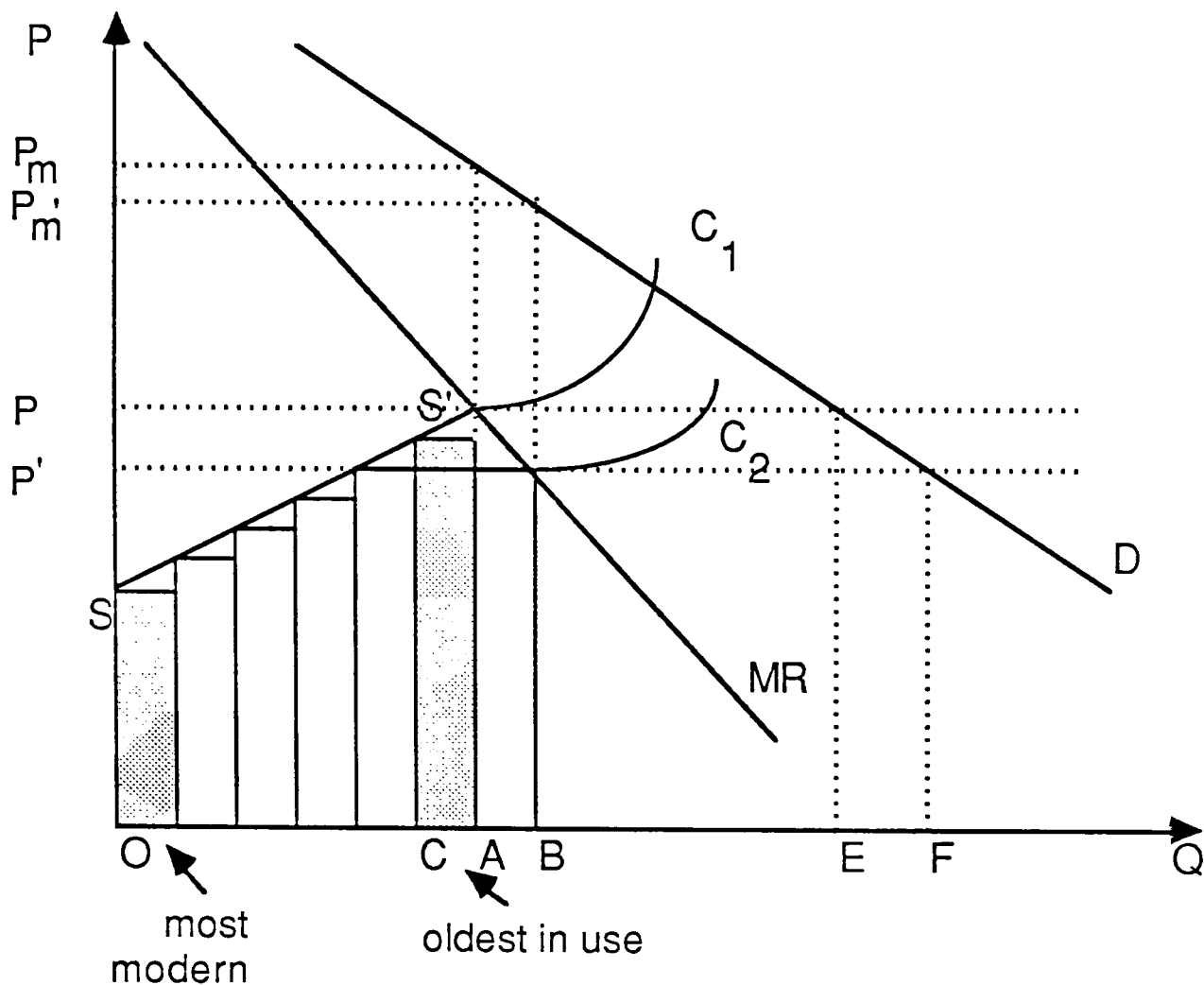
once imperfect competition is permitted. Unlike the firm in perfect competition, the monopolist or oligopolist may find it profitable to replace plant while it is still earning quasi-rents. The reason is that the imperfect competitor has to take account of the declining marginal revenue he faces. The monopolist's (or oligopolist's) cost curve below current output is the operating cost of each vintage. Above current output, the cost curve is made up of both operating and capital costs of expansion with new plant. In the simple monopoly case illustrated in figure 1.2¹, the marginal cost curve for output up to current output OA is SS' and the price is P_M . Any increase in output beyond OA would involve the capital costs of installing new capacity, shown by C_1 . Total costs would increase by more than revenue. Clearly replacement of the oldest plant in use (vintage CA) would be unprofitable because total costs of using new plant to produce the output which would be lost through scrapping the oldest plant are higher than operating costs on the old.

In the next period, techniques with total cost C_2 are available. New plant will be built to produce output equal to AB (the new vintage will of course appear at the origin) and the oldest plant CA will be scrapped since it is no longer profitable. This can be compared with the case under perfect competition, where new plant to produce EF would be built. New capacity is expanded by more in the competitive situation and more plant is scrapped (since more plant of each vintage is built under competitive conditions). Plant earning

1 *ibid.*, fig. 13, p.91.

Figure 1.2

Scrapping under Monopoly



quasi-rents is scrapped by the monopolist but not by the perfect competitor (i.e. gross quasi-rents on the least efficient plant in use are always positive under monopoly; but equal to zero under perfect competition).

However, it is important to note that there will be the same range of techniques in operation regardless of whether the product market is competitive or monopolistic: the difference between operating costs of obsolete plant and the newest plant in use in both cases is the unit capital cost of the newest plant.¹

It is possible to provide a simple extension of the

¹ *ibid.*, p.91.

clay-clay model discussed above to an imperfectly competitive situation if it is assumed that there is a single good in the economy. Solow et. al. indicate¹ that by assuming that prices are set by a constant mark-up over prime costs on no-rent capital, a straightforward adjustment of the results in perfect competition can be deduced. As will be discussed in chapter three, a constant mark-up may be the outcome of monopolistic pricing in the face of a constant elasticity of demand or, more realistically, of oligopolistic pricing rules. With a mark-up of $m\%$, the real wage will be

$$w = \lambda_0 e^{\lambda_0 (1-m)} / (1 + m);$$

the net rate of profit, r , is defined by

$$1 = \frac{1}{V} \frac{1}{r} (1 - e^{-r\tau}) - \frac{(e^{-\lambda\tau} - e^{-r\tau})}{V \left(\frac{1}{1+m} - \frac{1}{r-\lambda} \right)} \dots [3b]$$

and the share of profits is

$$\frac{\text{PROF}}{Y} = 1 - \frac{(n + \lambda) (e^{-\lambda\tau} - e^{-(\lambda+n)\tau})}{n \left(\frac{1}{1+m} - \frac{1}{e^{-(\lambda+n)\tau}} \right) - \frac{1}{1+m}} \dots [2b].$$

In this simple model, it is clear that the mark-up introduces an additional parameter, any change in which will affect the share and rate of profit. As shown in part B of table 1.1, the introduction of a mark-up raises profitability in the expected way. It does not affect the life of plant, i.e. as noted above, it does not affect the range of equipment in use.

However, with a capital good which is distinct from output, matters become more complex, with the life of plant a function of the output price in the competitive case and of

1 Solow et. al., REStud. 1966, pp.111-112.

the unit capital cost in the imperfectly case. The difference in formulation arises because of the use of the replacement rule in imperfect competition.

2.2 The putty-clay vintage model

The putty-clay vintage model¹ differs from the clay-clay model in that it permits an ex ante responsiveness of the choice of technique to actual or expected changes in relative factor prices. Adjustment in the model is possible not only through variations in the life of plant but also in the choice of technique on new plant. The additional choice variable increases the complexity of the model.

The equations for the life of plant and the net rate of profit are exactly as before but an additional relationship is required to determine the capital/output ratio on new plant. The choice of technique will be the outcome of trading off the savings due to employing one worker less over the expected life-time of the plant against the capital cost of choosing the more labour-saving technique.² Using the CES production function, the choice of technique on the new plant, V , will be determined by:

$$\frac{1}{Hd} V \frac{1}{\sigma} = \frac{1 - e^{-r\tau}}{r} \dots [4],$$

where the ex ante constant returns to scale, CES production

1 This model has been analyzed in Eltis, Growth and Distribution, 1973, ch 3; C.J. Bliss, "On putty clay", REStud. XXXV (2), 102 (1968), 105-132; R.C.O. Matthews, "The new view of investment: A comment", QJE LXVII,1 (1964), 164-172, P.K. Bardhan, "More on putty clay", IER 14, 1 (1973), 211-222.

2 Eltis, Growth and Distribution, 1973, pp.61-2.

function is:

$$Y^{-u} = d [H K^{-u} + (1 - H) L^{-u}]$$

with $u = 1/\sigma - 1$, where σ is the elasticity of substitution, H is the distributional parameter, and d , a scale factor.

Clearly, expectations about future factor prices play a crucial role in the choice of technique since, by assumption, once installed, the labour requirement of capital equipment is fixed.

In the clay-clay model, with a constant savings share, it is possible to calculate the optimal length of life of plant without solving simultaneously for the net rate of return. With putty-clay, any decomposition of the three relationships (i.e. including the third, specifying the capital/output ratio on new plant) is impossible. This complexity makes analytical results very difficult, and to date there is only a patchy selection available.

By restricting the value of the ex ante elasticity of substitution to less than or equal to one, Bardhan has proved that a competitive net value maximizing steady state equilibrium exists and is unique (for a given constant gross investment ratio).¹

Before noting the comparative equilibrium results which are available, a general feature of the putty-clay model must be outlined. The importance of expectations about factor

1 P. Bardhan, "Equilibrium growth in a model with economic obsolescence of machines", QJE, LXXXIII, 2 (1969), 312-323.

prices was alluded to above. In a steady state growth situation with a given rate of Harrod-neutral technical progress, wages will (and will be expected to) grow at the rate of technical progress. The expectation of continuously rising real wages will result in greater capital intensity for a given ex ante elasticity of substitution than would be the case were ex post substitution possible.¹

Because of the analytical intractability of the putty-clay vintage model, a simulation approach was adopted in an attempt (a) to confirm intuitive arguments as to the likely effect of changes in parameter values in the cases where there are no analytical results available and (b) to examine the sensitivity of distribution to changes in parameter values. The three equations [1], [3] and [4] were solved numerically for the length of life, q , the capital output ratio on new plant, V_N , and the rate of profit, r , using different initial values of the parameters σ (the elasticity of substitution), s (the savings share), λ (the rate of Harrod-neutral embodied technical progress) and n (the rate of growth of the labour force). For the simulation exercise, it was assumed that H (the distribution parameter in the CES production function) was equal to 0.5 and the scaling factor, d , was unity.

A summary of the simulation results is set out in table 1.2. Given the approximations involved in the simulation approach, the results differ for some cases from those proved analytically. However, the sets of results are broadly consistent.

1 Matthews, QJE 1964, 164-172.

(a) Savings Share

Bardhan proves that the steady state with a higher savings share has a shorter life of capital and lower profit share as long as the ex ante elasticity of substitution is not greater than two thirds.¹ The result is intuitively plausible given Matthews' insight that with putty-clay, a given ex ante elasticity of substitution will result in the choice of a higher capital output ratio on new plant than would occur in a putty-putty model with the same ex ante elasticity. In the simulation exercise, depending on the value of the rate of technical progress and of the growth rate of the labour force, the critical value for the elasticity of substitution below which a higher savings share is associated with a shorter life of plant and a lower profit share was found to lie between 0.7 and 0.9. With σ equal to 0.5, for example, and assuming that the rate of technical progress is 4% and the labour force is growing at 2%, a steady state with a savings share of 15% would have a profit share of 27.4% whereas a steady state with a savings share of 20% would have a profit share of 25.0%. The profit share is relatively insensitive to the savings share - the capital output ratio on new plant is one quarter higher in the steady state with the higher savings share whilst the age of plant is only reduced from 14.6 to 13.2 years. The profit rate is much more sensitive - it falls from 22.7% in the steady state with the lower savings share to 11.9% in the steady state with the higher savings share.

1 Bardhan, IER, 1973, pp.213,214.

Table 1.2
Putty-clay Simulation Results

<u>Savings sh.</u>	<u>Rate of tp</u>	<u>LF g.r.</u>	<u>K/Y new</u>	<u>Profsh</u>	<u>Profrte</u>	<u>Life</u>
%	%	%		%	%	yrs

(a) Variations in the Savings Share

$\rho = 0.5$

15	4	2	1.46	27.4	22.6	14.6
20	4	2	1.82	25.0	11.9	13.2

$\rho = 0.8$

15	4	2	1.67	33.8	26.1	18.4
20	4	2	2.23	33.9	17.6	18.5

(b) Variations in the Rate of Technical Progress

$\rho = 0.5$

20	5	2	1.60	27.4	16.7	11.8
20	4	2	1.82	25.0	11.9	13.2
20	3	2	2.15	22.2	7.3	15.4

$\rho = 1$

20	5	2	2.05	40.2	24.0	18.1
20	4	2	2.47	40.3	20.0	22.5

(c) Variations in the Labour Force Growth Rate

$\rho = 0.5$

20	5	3	1.54	28.3	18.8	12.0
20	5	2	1.60	27.4	16.7	11.8
20	5	1	1.67	26.6	14.6	11.6
20	5	0.1	1.73	25.9	12.8	11.4

$\rho = 0.8$

20	5	3	1.7	35.6	23.8	15.5
20	5	2	1.8	35.0	21.8	15.5
20	5	1	2.02	34.5	19.8	15.5
20	5	0.1	2.15	34.0	18.1	15.6

$\rho = 1.1$

20	5	3	1.96	42.8	27.0	19.1
20	5	2	2.13	42.8	25.0	19.5
20	5	1	2.34	42.9	22.9	20.1
20	5	0.1	2.56	43.0	21.0	20.7

(b) Rate of Technical Progress

Analytical results are only available for the case where the ex ante production function is Cobb Douglas, i.e. where σ is equal to 1. Bardhan has proved that if $\sigma = 1$ and the savings share is less than that associated with a growth rate equal to the rate of profit (the so-called golden age value of the savings share), then a lower rate of technical progress is associated with a lower profit share. In the special case where $\sigma = 1$ and the savings share is at its golden age value, a change in the rate of technical progress has no effect on the factor distribution. The simulation results show that for σ less than 1, a lower rate of technical progress is associated with a lower profit share. For a Cobb Douglas production function, the profit share responds very little to changes in the rate of technical progress even when the savings share is below the golden age value. For $\sigma > 1$, the profit share rises with a fall in the rate of technical progress.

For example, with $\sigma = 0.5$, a savings share of 20% and a growth rate of the labour force of 2%, a fall in the rate of technical progress from 5% to 4% is associated with a fall in the profit share from 27.4% to 25.0%. The profit rate fell from 16.7% to 11.9% i.e. a fall of nearly 30%. As Bardhan proves, a fall in the rate of technical progress is always associated with an increase in the life of each vintage.

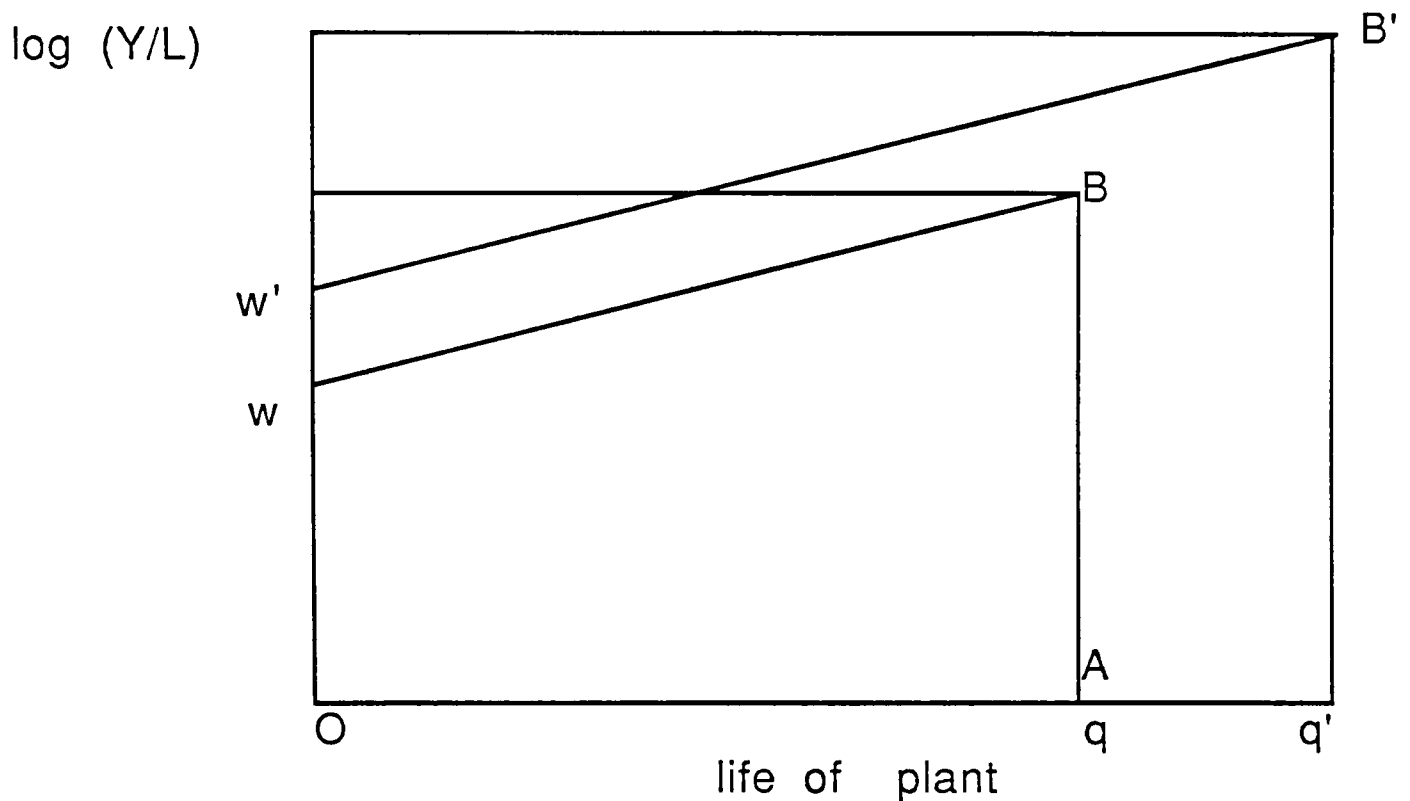
(c) Rate of Growth of Labour Force

No analytical results have been published for this case.

However, intuition can provide some guidance. In contrast to the clay-clay model, it seems possible that with putty-clay, the economic life of plant may be longer in the steady state with the lower growth rate of the labour force. It is therefore conceivable that a lower labour force growth rate is associated with a higher profit share. If the elasticity of substitution is large, then there may be a capital/labour ratio on new plant so high in response to a fall in n that the life of plant is longer than in the initial steady state if full employment is to be maintained.

This argument can be illustrated using a diagram introduced in figure 1.1 earlier. In the initial steady state, the wage rises along wB until it is equal to the output per head of the machine OA at which point it is scrapped, i.e. after q years (figure 1.3). Now, if n is lower and σ is such that the level of output per head on new plant is raised more than proportionately than the level of the wage which is set by the output per head on the oldest plant in use (i.e. a much more capital-intensive technique is chosen) as is the case in figure 1.3, then the new steady state life of plant, q' , is longer than in the initial steady state. For reasons given above, the ex ante elasticity of substitution associated with a more than proportionate increase in K/L and Y/L is less than one. Hence for some range of σ , $\sigma < \sigma_{critical} < 1$, the life of plant is longer in a steady state with a lower rate of growth of employment.

Figure 1.3
Choice of Technique and Life of Plant



It emerged from the simulation exercise that for $\phi < 0.775$, a fall in n is associated with a fall in the life of plant. In other words, the critical value of ϕ appears to be about three quarters. However, unlike the case of changes in the savings share, where a shorter life of plant implies a lower profit share, this is not the case with changes in the labour force growth rate. A lower growth rate of the labour force is associated with a lower profit share over a wider range of values of ϕ : viz. as long as ϕ is less than 1.075.

For $\phi = 0.5$, and with a savings share of 20% and a rate of technical progress of 5%, a fall in the growth rate of the labour force from 3% to 2% is associated with a fall in the profit share from 28.3% to 27.4%, i.e. by 3%. The profit rate falls by 11%. A further fall to $n = 0.1\%$ reduces the profit

share to 25.9%. The life of plant varies little - from 12 when $n = 3\%$ to 11.4 years when $n = 0.1\%$. With $\sigma = 1$, and with all other parameters unchanged, the profit share falls from 40.4% to 40.2% as the growth rate of the labour supply falls from 3 to 2%. The life of plant rises from 17.8 to 18.1 years.

The striking aspect of all these putty-clay results is the very limited sensitivity of the factor distribution of income to parameter changes. Of course, as the elasticity of substitution is reduced toward zero, the results converge to those reported above for the clay-clay model.

3. Conclusions on the Determinants of Distribution and the Rate of Profit in the Neoclassical Approach

The contribution of the more familiar strand of the neoclassical approach to the analysis of distribution and profitability is its focus on the adaptation of the economy to parameter changes through the structure of production (see Table 1.3 for a summary of the results). In particular, the vintage models provide a detailed examination of the effect of, for example, a fall in the growth rate of the labour supply or in the rate of technical progress on the scrapping of equipment and the choice of technique on new plant, both of which will affect the profit share and rate.

Using numerical simulations it has been possible to put orders of magnitude on these effects: in the clay-clay model, a fall in the labour force growth rate from 2% to 0.1% p.a. would result in a fall in the profit share of less than one tenth. But the net rate of profit would be nearly 30% lower.

In the putty-clay model, with $\sigma = 0.5$, the gross profit share would be 5% lower and the net rate of profit, nearly one quarter lower.

The relative insensitivity of distribution (and greater sensitivity of the rate of profit) to the growth rate of the labour supply suggests that other factors must lie behind the observed trends in Germany noted in the introduction. For example, changes in the mark-up under imperfect competition may be playing a role. In the clay-clay simulation, if the percentage mark-up of price over direct costs on the marginal (no-rent) plant was initially 15% and falls to 10% at the same time as the labour force growth rate falls from 2% to 0.1% p.a., then the profit share would fall by one fifth, and the rate by one quarter.

It is important to note that whilst the neoclassical models draw attention to the necessary relationships between the age structure of the capital stock and the choice of technique in the new steady state following a parameter change, they do not provide a fully satisfactory explanation of the transition to the new steady state. In the clay-clay model, for example, a parameter change that implies an increased rate of scrapping is associated with a rise in the real wage which brings about the necessary scrapping. But by working entirely in real terms, the process by which the real wage is actually pulled up and the old equipment rendered unprofitable is obscured. The approaches discussed below in chapters two and three pay much less attention to the details of supply-side adjustments in production than do the vintage

models but do address the question of when and how a "necessary" change in distribution will occur at the aggregate level.

Table 1.3

Summary of Comparative Equilibrium Results for Neoclassical Models

In the following models, a lower profit share is associated with:

- I. Solow Model
a lower n , λ and higher s , iff σ is less than 1.
- II. Clay-clay Vintage Model
a lower n , λ and higher s , always.
- III. Putty-clay Vintage Model^a
a lower n , if $\sigma < \sigma_{gr} < 1$
a lower λ , if $\sigma = 1$ and $s < s_{gr}$
a higher s , if $\sigma < 2/3$.

Notes: n , rate of growth of labour force
 λ , rate of Harrod-neutral technical progress
 s , share of savings in income
 s_{gr} , the golden rule value of s (i.e. the s associated with $g = r$, where g is the rate of growth and r , the rate of profit)
^a The results for technical progress and saving reported for the putty-clay model are those proved by Bardhan, 1973.

Chapter Two

The Neo-Keynesian Approach: Demand and Profitability

Within a broadly neo-Keynesian tradition, there are two basic approaches which seek to provide an explanation for changes in the factor distribution of income as the result of changes in the level of effective demand, or as the result of reequilibration of the goods market in the wake of shifts in other parameters. The first approach hinges on the relationship between aggregate savings and the factor distribution of income, whilst the second focuses on the relationship between capacity utilization and the rate of profit.

The neo-Keynesian or Cambridge approach to distribution places special significance on profits as a source of savings. In the simple model, there are two types of economic agent: the entrepreneur who receives profits and makes investment decisions and the employee who receives wages and spends them on consumption or "non-profit-making" investment such as consumer durables and housing. Both the consumption of entrepreneurs and the saving of employees are of secondary importance. This is very different from the neoclassical models, in which there is only one type of economic agent and where either savings come out of the wages of the current working cohort or as in the Solow and vintage models, distribution plays no role in savings.

1. Aggregate Savings and Distribution: Kaldor and Robinson

It is assumed by the neo-Keynesians that the propensity to save out of profit income is greater than the propensity to save out of wage income. With an exogenously given rate of growth (the theorists differ in their analysis of what determines this growth rate), and a fixed technical relationship between output and the amount of capital required to produce it, the amount of savings needed is fixed. The essence of the neo-Keynesian theories is that the factor distribution of income will alter to produce the required savings for steady state growth at any rate.

It is assumed that the rate of growth and the savings propensities are determined independently. Thus in the simple case where the propensity to save out of wages is zero, the steady state form of the savings equals investment identity is $g = s_p \cdot r$, where g is the rate of growth, s_p , the propensity to save out of profit income and r , the rate of profit. In other words, with g and s_p fixed exogenously, the rate of profit is fixed by a goods market equilibrium condition. A higher propensity to save out of profits will, ceteris paribus, mean a lower rate of profit. Similarly, a lower growth rate will mean a lower rate of profit.

Once the incremental capital output ratio is specified, the factor distribution of income associated with the rate of profit is fixed. Since the capital output ratio is assumed constant, the profit rate and share always move in the same direction.

Two models representative of the neo-Keynesian tradition

are Kaldor's original theory¹ and Robinson's². The main difference between the two is that Kaldor appears to assume that the exogenously given growth rate is the rate set by the growth rate of the labour force, whilst Robinson assumes it is set by the level of "animal spirits" of the entrepreneurs. It may be possible to interpret Kaldor's assumption as the outcome of government policy securing growth at the rate consistent with full employment.

Kaldor's argument is that, in general, the profit share would adjust to ensure steady state growth and he provided a mechanism through which this adjustment would take place. For example, a fall in the exogenous growth rate would mean less investment and effective demand. This would lead to a fall in the price level which would raise the real wage and shift distribution toward wages. Thus the lower level of savings required for the new lower rate of growth of capacity would have been generated.

Similarly, an increase in the incremental capital output ratio as the result of some exogenous technical development raises the investment requirement for any rate of growth. This increase in investment would lead to a shift in distribution in favour of profits through a rise in the price level in an analogous manner to that described above. With an unchanged rate of growth and savings propensities, the rate of

1 N. Kaldor, "Alternative theories of distribution", REStud, XXIII (1955-56) 94-100.

2 J. Robinson, "A model of accumulation", in Essays in the Theory of Economic Growth, (London, Macmillan, 1962), pp.34-59 and J. Robinson, The Accumulation of Capital, (London, Macmillan, 1965).

profit would remain unchanged but because of the higher capital output ratio, the share of profits would have to increase.

Finally, any change in the savings propensities out of the two categories of income would see a corresponding shift in distribution to reestablish the required aggregate level of savings. Higher savings out of profits would result in a lower profit share, as would higher savings out of wages. Thus changes in the rate of growth or in the capital coefficient or in the savings coefficients would lead to changes in the factor distribution of income to reequilibrate planned savings and investment.

The mechanism suggested by Kaldor is only operative at full capacity utilization since it consists of the response of prices to any change in aggregate demand associated with a change in the above parameters. At less than full capacity, it is assumed that volume, not price responds to any change in aggregate demand. Any increase in aggregate demand (an increase in investment because of a rise in the capital output ratio or in the growth rate; or a fall in savings because of a fall in one or both savings propensities) leads to a rise in the price level and a consequent rise in the profit share to induce the required additional savings. Higher prices have no effect other than to bring about a reduction in the wage share - there are no repercussions of the cut in real wages in wage negotiations and the higher profitability has no effect on investment which is purely the outcome of an accelerator process driven by the exogenous rate of growth.

However, Kaldor stresses that there are limits to the extent to which distribution can play the required role of adjusting to shocks to return the economy to steady growth at the given rate. Three constraints are suggested. First, Kaldor points out that there will be an upper limit on the profit margin because it will be impossible to reduce the real wage below a "subsistence" level.¹ This constraint has been likened to Joan Robinson's "inflation barrier"² in the sense that any attempt to reduce real wages below this level will be met by offsetting money wage increases. Steady growth is not possible. The second constraint is analogous to the first: Kaldor suggests that there will be a minimum profit share which, combined with the given capital output ratio, will be necessary to induce businesses to invest their profits. Further, under conditions of imperfect competition, pricing behaviour may place a floor on the profit margin. Finally, changes in distribution can only ensure steady growth if the capital output ratio is independent of distribution. In other words, Kaldor assumes that the chosen technique is the outcome of technical innovations and that relative factor prices have no effect on that choice.³

The distributional aspect of Robinson's model is closely related to Kaldor's. However, Robinson provides the model

1 Kaldor, REStud 1955-56, p.97.

2 Robinson, "A model of accumulation", 1962, pp. 34-59.

3 Kaldor, REStud., 1955-56, p.98.

with a more Keynesian flavour with her emphasis on what determines investment, and in the steady state, the growth rate. The rate of growth is not tied to the growth rate of the labour force but depends rather on the animal spirits of the entrepreneurs and their preparedness to invest, i.e. on the "historical, political and psychological characteristics of an economy".¹ Given the level of animal spirits, the rate of growth of the capital stock planned by firms will be a function of expected profitability. The reason for the dependence of investment on expected profits is twofold: first, because higher profitability will offset the increased risks associated with greater investment and secondly, because higher profits will reduce the cost of finance for investment.

Underlying this "investment function" is the presumption that the aim of entrepreneurs is the accumulation of capital, not the maximization of lifetime consumption. Robinson argues:

For the entrepreneur, the purpose of earning profits is not to indulge in consumption but to preserve and expand his business.²

In our argument the entrepreneurial aspect of capital is dominant, and profit is desired mainly as a means of accumulating capital rather than capital being desired as a means of consuming profit.³

In the steady state where the expected rate of profit is equal

1 Robinson, "A model of accumulation", 1962, p.37.

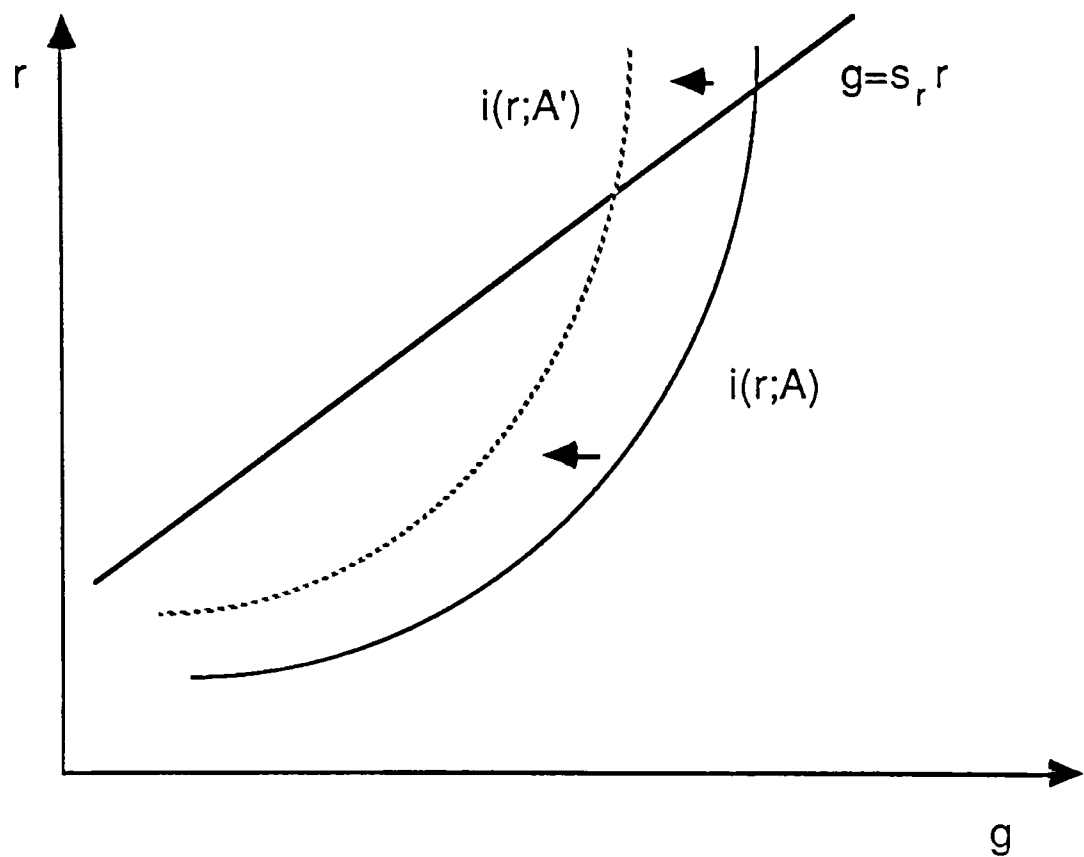
2 Robinson, The Accumulation of Capital, 1965, p.39.

3 *ibid.*, p.392.

to the actual rate of profit, there is a second relationship in the model between the rate of growth and the rate of profit. Figure 2.1 illustrates both relationships. A decline in animal spirits (A) will shift the $i(r,A)$ curve to the left. This will induce a shift in distribution from profits to wages to reduce planned savings to the new lower level of planned investment.

Figure 2.1

Robinson: A Decline in "Animal Spirits"



2. Capacity Utilization and Profitability: The Underconsumptionist View

A useful way of capturing underconsumptionist ideas about the role of demand and capacity utilization is to use

Rowthorn's model¹. The spirit of the model is neo-Keynesian and is similar to the approach of Joan Robinson. It enables one to examine the influence of demand on the rate of profit for a range of levels of capacity utilization. A simple way of presenting these ideas is in terms of two relationships between the rate of profit and capacity utilization. The first arises from the requirement for product market equilibrium and reflects both a classical or Kaldorian savings hypothesis so that aggregate savings is a function of distribution and a Robinsonian investment function where investment is a function of the rate of profit. A second relationship reflects the supply side showing how the profitability of production varies with the rate of capacity utilization.

For planned savings to equal planned investment, as above

$$r = s_r \cdot g,$$

where g is the ratio of investment (I) to the capital stock (K), i.e. the rate of capital accumulation which in steady state growth must be equal to the growth rate of output. It is assumed for simplicity that there is no saving out of wages. The growth rate is fixed purely by the investment function:

$$g = I/K = i(r, u),$$

which, for simplicity takes a linear form,

$$g = i_0 + i_r r + i_u u,$$

where u is the ratio of current to full capacity output (the

1 Rowthorn, B., "Demand, real wages and economic growth", Thames Papers in Political Economy, 1981.

rate of capacity utilization), i_0 is autonomous investment and the subscripts r and u denote partial derivatives.

Given this growth rate, product market equilibrium leads to

$$r = -\frac{\frac{i_u}{s_r - i_r}}{\frac{i_0}{s_r - i_r}} \cdot u + \frac{\frac{i_0}{s_r - i_r}}{\frac{i_0}{s_r - i_r}}.$$

This defines the demand-side relationship between the rate of profit and capacity utilization and is labelled the "realization curve" by Rowthorn.¹

The supply-side relationship stems from the variation of average cost with capacity utilization. Average labour productivity will rise with the degree of utilization, since

$$LP = y/(1 + f/u)$$

where y is the constant marginal product of labour, and f , the ratio of overhead to variable employment. Average "capital productivity" will rise with the degree of utilization as the actual capital/output ratio falls to its full capacity level, V .

With constant marginal costs, profit maximization dictates a constant price cost margin, m . However at full capacity, prices will rise to clear the market with the result that the mark-up, m , provides only a floor to the margin of price above cost. Noting that the real wage is equal to $(1-m)y$ below full capacity and not greater than this at full capacity (an elastic labour supply is assumed), the net rate

1 *ibid.* pp.11-13.

of profit (assuming for convenience that there is no depreciation) is:

$$r = \frac{\mu u}{V} - \frac{(1-m)f}{V} \quad \text{at less than full capacity}$$

$$r \geq \frac{\mu u}{V} - \frac{(1-m)f}{V} \quad \text{at full capacity.}$$

This defines the "profits curve". Profitability rises with the rate of capacity utilization at a rate dependent on the mark-up factor and the full capacity capital output ratio. A positive mark-up generates a positive relationship between capacity utilization and the rate of profit since as utilization rises, average labour productivity rises due to the falling burden of fixed labour costs so that a constant mark-up on (constant) marginal cost will generate a rising average profit margin. Thus total profits will rise as capacity utilization rises. The fall in the actual capital output ratio as capacity utilization rises provides an additional boost to the profit rate.

To deduce the implications for the rate and share of profit of shifts in aggregate demand (a shift of the "realization curve") or of costs (the "profits curve"), it is necessary to identify the stable steady-state equilibria. Stability hinges on the relative slopes of the two curves.¹ Stable equilibria require that savings are more sensitive to profits than is investment. However, two cases arise. First, if $s_r > (i_r + i_u V/m)$, then the realization curve is flatter

1 *ibid.*, pp. 13-15.

than the profits curve in both regions (i.e. at full capacity and below full capacity) and all equilibria are stable. If, however, the savings propensity out of profits is at an intermediate level ($i_r < s_r < i_r + i_u V/m$), then the demand curve will be positively sloped but steeper than the profits curve below full capacity. Therefore equilibria below full capacity will be unstable, whilst those at full capacity will be stable. This case would occur if there was a strong accelerator-type effect of higher capacity on investment. Hence it will only be when savings out of profits are high (and/or the responsiveness of investment to profits and the accelerator coefficient is relatively low) that stable equilibria below full capacity will exist.

Looking only at the stable equilibria, two sets of comparative dynamic results emerge when we examine respectively shifts in the realization and the profits curves. The results at full capacity are those of Kaldor and Robinson.

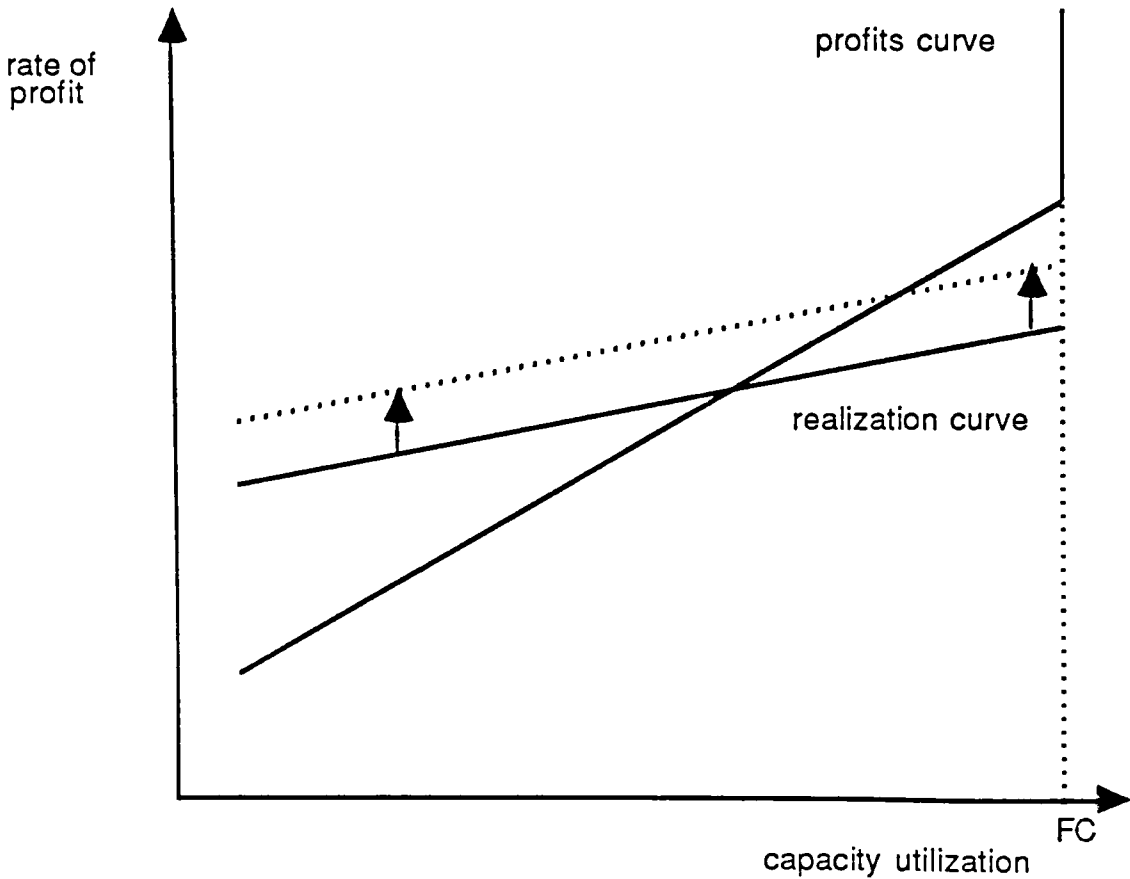
1) Shifts in aggregate demand

Any upward shift in the realization curve due either to an increase in autonomous investment (Robinson's animal spirits), or a fall in savings out of profits would lead to a rise in capacity utilization and the rate of profit up to full capacity; and to an increase in the rate of profit at full capacity. Below full capacity, profits and the profit share rise because of the increase in labour productivity - real wages are unchanged. The profit rate rises additionally because of the fall in the capital-output ratio. At full

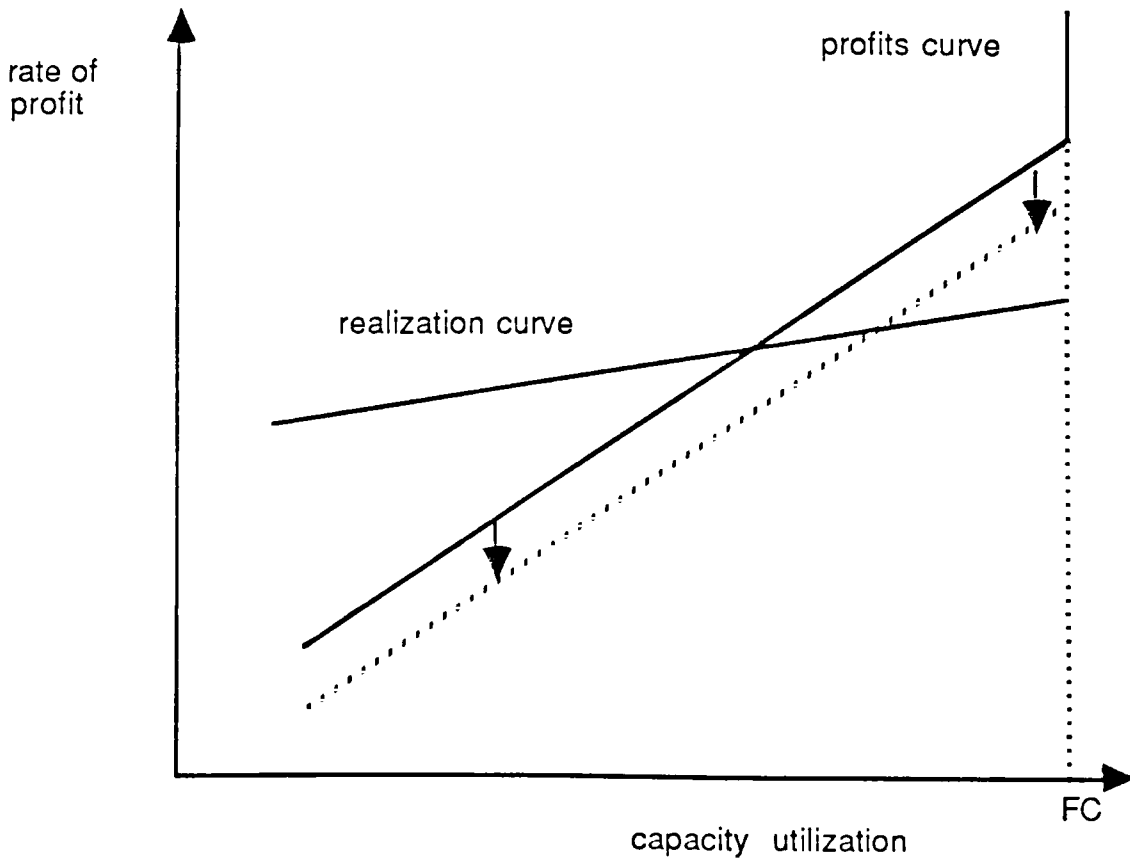
capacity, on the other hand, profitability rises because the price level rises pushing down the real wage and reducing the wage share (see figure 2.2a).

Figure 2.2
Shifts in Demand and Costs

2.2a increase in autonomous investment



2.2b fall in price-cost margin



ii) Shifts in costs

If there is a downward shift in the profits curve because of an increase in the proportion of fixed costs (labour or capital) or a fall in the mark-up then at less than full capacity utilization there is a short run rise in costs and fall in profits, but since savings react more strongly to this than does investment, there will be a net increase in demand which will stimulate output and result in a recovery of the rate of profit (figure 2.2b). The rate of profit will end up higher than it was to begin with because investment responds to the increase in capacity utilization (i.e. the realization curve is positively sloped). Thus, for example, lower monopoly power in the economy will have the effect predicted by the underconsumptionists of raising the level of activity and the rate of profit. However, the share of profit will be lower (as long as there is any autonomous investment) - as the lower mark-up offsets the effect of reduced overhead labour costs. Thus we would expect to see an inverse relationship between the share and rate of profit whenever the rate of profit has changed at less than full capacity in response to a shift of the profits curve (i.e. to a change in "costs").

At full capacity, a downward shift in the profits curve will have an immediate effect of reducing profits but prices will rise to restore the original rate of profit. In other words, no change in costs or in the mark-up will affect distribution.

3. Conclusions on the Determinants of Distribution and the Rate of Profit in the Neo-Keynesian Approach

The principal neo-Keynesian result is that at full capacity utilization, a shift in the factor distribution of income can only come about through a shift in aggregate demand. Only a shift in aggregate demand (through a change in savings or investment propensities) will evoke the change in the price level relative to money wages which is necessary to bring about a change in distribution. This in turn will restore the goods market to equilibrium. To illustrate the point, it is useful to look at the neo-Keynesian response to the possibility of the economy meeting a labour supply ceiling. Although this possibility is not stressed in neo-Keynesian writings, Robinson stated that should the rate of growth of the economy exceed the rate of growth of the labour force, "one way or another it is certain to be cut down".¹

The mechanism through which conformity between the growth rates of output and of the labour force would be achieved is as follows: entrepreneurs will find it difficult to get hold of labour and will therefore bid up money wages. If investment plans remain unchanged, then the increased consumption demand in nominal terms as the result of the higher wages would result in a higher price level than would have been the case in the absence of the labour shortage. The situation is at an impasse and prices and wages continue to rise until such time as investment plans are revised

1 Robinson, The Accumulation of Capital, 1965, p.81.

downwards. The downward shift in the investment function would allow the real wage to rise. The shift in the composition of demand from investment to consumption would bring down the rate of growth of output to that of the labour force. It is only when investment falls that distribution shifts from profits to wages.

In the extension of the discussion of the pattern of profitability over the cycle to longer-run analysis, the underconsumptionists highlight the fact that at less than full capacity, any increase in the pressure of demand will be reflected in a higher rate of capacity utilization in the economy. This will reduce the burden of fixed labour and capital costs and thereby boost the profit share and rate. By contrast, a fall in the mark-up will boost the level of activity in the economy leaving the profit rate higher, but the share of profits lower.

Thus, the neo-Keynesians' contribution to the analysis of profitability is threefold: first, they have identified changes in private sector components of demand as the primary source of distributional shifts. Second, they have drawn attention to the fact that for underlying changes on the supply side of an economy operating at full capacity to be reflected in changes in distribution, rather than in inflation, there must be an appropriate pressure of aggregate demand. Finally, changes in the rate of capacity utilization across cycles will be associated with changes in the share and rate of profit, with the share and rate moving in the same direction when the source of the shift in capacity utilization

was aggregate demand, and in the opposite direction when the source was a change in the price-cost margin.

The neo-Keynesian link between falling profitability and an inadequate pressure of demand due to changes in private sector behaviour does not appear very promising as an explanation for the West German case, where at least from 1961 capacity utilization was high and the rate of unemployment very low. We return in chapter nine to assess the neo-Keynesian contribution.

Chapter Three

The Kaleckian Approach: Power Relations and Distribution

The analysis of the factor distribution of income which is centred on the interaction between and limitations to the ability of businesses to use elements of monopoly power to establish and maintain a desired profit margin (mark-up of prices over wage costs) and the ability of labour to enforce a particular real wage (mark-up of money wages over prices) is identified most closely with the work of Kalecki. It is also possible to see elements of the approach in the factors which Marx identified as determining what he called the rate of exploitation or, equivalently, the rate of surplus value.

The rate of exploitation is the ratio in terms of labour values which corresponds to the ratio of profits to wages in terms of prices and is therefore closely related to the factor distribution. Marx highlighted the possibility that trade unions could reduce the rate of exploitation by raising the wage above the level which would be necessary to ensure the supply of the requisite quantity and quality of labour. Unions could have a second effect on distribution by influencing the length of the working day and the pace of work, for a given wage.

Kalecki analysed both the case of trade unions and of businesses being able to influence the factor distribution of income. He identified the sources of a change in the degree of monopoly in an industry with changes in concentration. He argued that the emergence of giant corporations would lead a

large firm with a substantial share of the industry's output to appreciate that its price would have a noticeable effect on the average industry price. By raising its price, it would push up the average price and lead the other firms to follow suit since they based their price on the average price. As Kalecki put it:

The same game is played by other big firms and thus the degree of monopoly increases substantially. This state of affairs can be reinforced by tacit agreement. (Such an agreement may take inter alia the form of price fixing by one large firm, the "leader", while other firms follow suit.) Tacit agreement, in turn, may develop into a more or less formal cartel agreement which is equivalent to full scale monopoly restrained merely by fear of new entrants.¹

He also stated that the degree of monopoly and therefore the share of profits would increase with the displacement of price competition by non-price competition.

In a much later article², Kalecki provided a substantial analysis of the conditions under which trade unions would be able to effect a shift in the distribution of income away from profits towards wages. In a competitive economy at full employment, the success of trade unions in raising money wages would not be reflected in a shift in distribution: all that would happen is that in the short run, profits would be redistributed away from firms producing capital goods to those producing consumer goods. The reason for this is that the

1 M. Kalecki, "Costs and prices", 1943, reprinted in Kalecki, Selected Essays on the Dynamics of the Capitalist Economy, 1933-1970, (Cambridge, Cambridge University Press, 1971), p.50.

2 M. Kalecki, "Class struggle and distribution of national income", 1971 in Selected Essays, 1971, pp.156-164.

increase in wages is assumed to be spent immediately. By raising prices, this increases profits in the consumer goods sector by exactly the same amount. In the longer run, prices also rise in the investment goods sector as the result of the increase in wages, so that eventually there will be neither a redistribution from profits to wages nor a redistribution of profits between the sectors. A general rise in the levels of prices and wages will be the outcome.

Under imperfect competition, with a given degree of monopoly, the same result will obtain, i.e., an increase in money wages will lead to a consequential rise in prices and the distribution of income will remain unchanged. However, Kalecki identified a route through which trade union power could affect distribution in an imperfectly competitive economy. The route involves the effect of wage bargaining power on the degree of monopoly itself. Kalecki argued as follows: the existence of high mark-ups will encourage strong trade unions to bargain higher money wage increases on the grounds that the firms can afford to pay them. With a given mark-up, the higher money wage increase would simply be passed on in higher prices. However, a limit to this wage-price pass-through is imposed by the cross-elasticity of demand between industries. He assumes that wage bargaining proceeds industry by industry and that "an industry will not like such a process making its products more and more expensive and thus less competitive with products of other industries".¹ Because of this, trade union power is able to reduce the size of the

1 Kalecki, 1971, p.161.

mark-up. As we will see below, this kind of effect will be particularly evident in the case where the industry is competing with overseas producers. Hence, he concludes that:

It follows ... that the class struggle as reflected in trade-union bargaining may affect the distribution of national income but in a much more sophisticated fashion than expressed by the crude doctrine: when wages are raised, profits fall pro tanto. This doctrine proves to be entirely wrong. Such shifts that occur are: (a) connected with widespread imperfect competition and oligopoly in [the] capitalist system; and (b) they are contained in fairly narrow limits. However, the day-by-day bargaining process is an important co-determinant of the distribution of national income.¹

Kalecki did not investigate the sources of trade union bargaining strength, concentrating instead on the implications of an increase in bargaining power for distribution. However, there is a large literature on the microeconomics of imperfect competition in the labour market and the determinants of bargaining power. We will distill from this literature the major factors which appear to influence the ability of trade unions to secure money wage increases relative to expected productivity growth and expected inflation.

This will be followed by an examination of the micro-foundations of monopoly power in the product market. Kalecki's argument as to the ability of firms simply to mark-up wage increases and therefore raise prices by more than had been anticipated in the wage bargain will be discussed, focusing in particular on the constraints provided by foreign competition. The penultimate section of the chapter is concerned with the implications of changes in the exchange rate for distribution in a Kaleckian-type model. Finally, the

1 *ibid.*, pp.163-164.

threads will be drawn together with a summary of the determinants of distribution in the Kaleckian approach.

1. Micro-foundations of the Kaleckian Approach to Distribution

1.1 The determinants of wage bargaining power

It will be assumed throughout this section that during wage bargaining negotiations workers and employers hold the same pre-determined expectation of the general price level both of consumer goods and of producer goods over the period of the wage bargain. Thus any change in the money wage will result in an expected change in the real wage, and, with the level of labour productivity predetermined as well, in the wage share. To avoid clumsiness in exposition, the qualification "expected" change in the real wage or wage share will be omitted.

The assumption that money wage increases amount to real wage increases is frequently made in the literature on wage bargaining, as the focus is typically on a single union - single employer where any pricing response of the firm is assumed not to affect the general price level. It is a convenient assumption since the preferences of union members are expressed in terms of real wages. Similarly, firms are concerned with the real cost of labour to them. Of course the issue of whether an increase in union bargaining power at an economy-wide level leads to accelerating inflation or to a shift in distribution, i.e. the higher money wage rise turns out to be a real wage rise, is central to our analysis and will be taken up in the conclusions (section 3 below).

In the microeconomic analysis of the determinants of the wage share in an industry or firm in a unionized economy, it is necessary to specify the form of the union's utility function. The two commonly used forms of utility function are first, where union utility is a function both of the wage and the level of employment, and second, where it is a function of the wage alone. We will consider both types.

Secondly, the structure of the labour market must be laid down - in particular, whether the union (the monopoly supplier of labour) faces a competitive or monopsonistic demand for labour. We will be concerned only with the latter case, since with a monopoly union facing a competitive demand for labour, the union can set the wage unilaterally and there is no bargaining involved.¹ This is not consistent with the "stylized facts" of collective bargaining, where there appears to be genuine negotiation over wages - i.e. collective bargaining is not simply a question of the exchange of information about the nature of the labour demand curve.

The bilateral monopoly case, where the monopoly union faces a monopsonistic labour demand, is a natural one for modelling the German labour market where wage negotiations take place at the industry level between the industry union and employers' association.

Bilateral monopoly

Many of the early models of wage bargaining were set up

1 See for example the survey in Andrew Oswald, "The economic theory of trade unions: an introductory survey", L.S.E. C.L.E. Discussion Paper No. 211, February 1985.

as models of bilateral monopoly.¹ Bilateral monopoly is often appropriate for the analysis of bargaining since both parties possess power. The classic analysis is De Menil's, where the union's utility function includes both the wage and the level of employment. The set-up is a two-person (one union, one firm) fixed threat cooperative game. The essential ingredients are as follows: there is a unique well-defined status quo point depicting the pay-offs the parties will receive in the event of failure to agree and there is a set of pay-offs which are attainable through cooperation and which represent a Pareto improvement vis a vis the status quo point. De Menil defines the status quo point as the literal outcome of no trade, i.e. there is no employment contract for the members of the union and no production by the firm. The firm leaves the industry and the union members are left to take their chance on the external labour market.

An improvement for both parties from the status quo point is possible as long as the enterprise can make positive profits (over and above "normal profits") and the union members can secure wages higher than the alternative wage. The alternative wage reflects the probability of reemployment, the competitive wage and the unemployment benefit. The bargaining game decomposes into two parts: first, the level of employment is set at the level that would be chosen by a combined employer-union entity purchasing labour on the

1 The classic examples are William Fellner, Competition Among the Few, (London, Frank Cass, 1965), ch 10, and George De Menil, Bargaining: Monopoly Power Versus Union Power, (Cambridge Mass., MIT Press, 1971).

external labour market and maximizing profits. Second, the wage is set by the application of the Nash bargaining solution.

Nash's solution to the division of the "joint profit maximizing" pie amounts to finding the payoff pair (the share of the surplus that goes to workers in the form of a wage supplement over and above the competitive wage and the share to employers, their profits) which maximizes the product of the utility gains available to the parties from cooperation.¹ The wage share will depend on the security levels of each party (i.e. the utility associated with the status quo point) and on the degree of risk aversion displayed by the utility functions of the two parties. In the case in which neither side is risk averse, the Nash solution will result in the equal division of the sum of the potential money gains from the bargain.

Any increase in the security level of the union (the utility obtained at the status quo point) as the result, for example, of a fall in the probability of its members being unemployed in the event of failure to agree, or a rise in the wage on the external labour market will increase the union's share of the gains from trade. Similarly, any fall in the security level of the firm through an increase in its sunk costs (i.e. costs not recoverable by the firm leaving the industry) would result in an increase in the wage share.

1 Bacharach provides a transparent intuitive explanation of the logic of the Nash solution. Michael Bacharach, Economics and the Theory of Games, (London, Macmillan, 1976), pp. 105-111.

Whichever party has a higher degree of risk aversion will take a smaller share of the gains, since that party will concede something in order to reduce the risk of stalemate. Since it seems empirically to be the case that risk aversion declines with wealth, any increase in the wealth of the union (in terms of its members social security entitlements, strike funds etc) or decrease in the wealth of the firm (e.g. lower wealth as the result of lower past profits) will shift the outcome toward a higher share for the union.

In spite of the plausibility of the predictions of De Menil's model as to the determinants of the bargaining outcome, it does not depict a wage setting process which fully accords with the "stylized facts". Whilst it captures a situation in which there is genuine negotiation over wages, wage negotiations in practice do not involve a joint union-employer decision over the level of employment. In other words, the first step in De Menil's model where union and employer agree on the joint surplus maximizing employment level (assuming the cost of labour is the outside wage) does not occur: employers have discretion over the level of employment. Fellner suggests that one reason why employment contracts are not common is that enterprises and unions are unlikely to agree on the likelihood of adverse shifts in the labour demand function during the period of the wage agreement. Thus businesses would be expected to require an uncertainty discount which would exceed the amount the unions would be willing to pay.¹ (This appears to be the opposite

1 Fellner, Competition Among the Few, 1965, p. 278.

result to that in the implicit contracts literature, where the risk aversion of employees results in the formation of an implicit contract with the employer so that a lower wage is paid but employment guaranteed across slump and boom.)

A wage bargaining model which does fit the stylized facts on both counts is proposed in Nickell and Nickell and Andrews.¹ It is a bilateral monopoly model in which the employer chooses the level of employment. Thus the bargaining game concerns the fixing of the wage along the labour demand curve. If the only argument of the union utility function is the wage, then flat union indifference curves in wage employment space are generated and a solution along the labour demand curve is Pareto-efficient.

Two plausible arguments for horizontal indifference curves based on expected utility maximization have been proposed² where the utility of both employed and unemployed members is included. For example, the level of employment in the economy may be growing in such a way that current employment exceeds the union membership. There are no unemployed union members, with the result that the union is only concerned about the wage. Another hypothesis which produces horizontal indifference curves and is consistent with a steady state, arises if lay-offs are not random but follow a senior-

1 S.J. Nickell, "A bargaining model of the Phillips' Curve", L.S.E. C.L.E. Discussion Paper, No. 130, June 1982. The same model forms the theoretical part of S.J. Nickell, and M. Andrews, "Unions, real wages and employment in Britain 1951-77", OEP, 35 Supplement (1983), 183-206.

2 Oswald, "The economic theory of trade unions", 1985, pp. 22-4.

ity convention such as "last-in-first-out". If the union then maximizes the utility of the median voter, indifference curves will flatten out above the level of employment which guarantees the employment of the median voter.

Using this framework, Nickell uses the fixed threat Nash bargaining solution to produce a determinate outcome to the bargaining game. He follows De Menil in defining the status quo point as the withdrawal of the firm from the industry. In specifying union and enterprise utility functions including the utility available at the status quo point, Nickell states that the utility to union members in the event of no trade depends only on the likely duration of unemployment, the level of the outside wage and on the level of benefits if unemployed. It does not depend on the financial strength of the union to sustain a strike. On his assumptions, the only way that the strength of the union in this sense affects the outcome is through its effect on the costs to the employer of leaving the industry. For example, a stronger union is supposed to be able to impose higher redundancy costs on the employer if the firm closes down. This reduces the firm's status quo utility and weakens its bargaining position.

However, recent work by Binmore et. al.¹ to establish a rigorous justification for the Nash bargaining solution has shown that the appropriate status quo points are the utility levels of the bargaining parties whilst they are in dispute

1 K. Binmore, A. Rubinstein, A. Wolinsky, "The Nash bargaining solution in economic modelling", Rand Journal of Economics, 17, 2 (1986), 176-188.

about the terms of the bargain. In other words, the status quo utility is that available to the union when its members are on strike and to the firm when production is disrupted or halted, rather than the utility available if the firm leaves the industry. Consideration of a range of threats (e.g. strikes of varying duration, work-to-rules, lock-outs by the employers) would then be possible.

For the moment, we shall remain with the Nickell model. Its sharpest contrast with De Menil's stems from the assumption that the firm has unilateral control over the level of employment. In De Menil's model, the level of employment is independent of the wage bargain, i.e. there are no detrimental employment consequences associated with enhanced union bargaining power. By contrast, in Nickell's model, the trade-off between wages and employment remains.

Despite this difference, the results for the effect on wages of parameter changes are virtually the same.¹ The broad results are therefore consistent with those of De Menil sketched above, although Nickell specifies the objective functions in more detail. The determinants of an increase in the wage divide into four groups:

a) there will be an increase in the wage as the result of a rise in the union's status quo utility due to an increase in the outside wage, the replacement ratio, and a reduction in the expected duration of the spell of unemployment.

b) a rise in the rate of income tax will also raise the

1 Nickell, "A bargaining model", 1982, pp. 11-13.

wage as the union's utility increment over the status quo is reduced. Nickell shows that this "compensation effect" is likely to outweigh the "substitution effect" of the rise in tax in shifting the union's preferences in favour of employment.

c) higher producer prices relative to the consumer price level, a higher productivity index and lower employment taxes levied on the firm will all tend to raise the wage as the discrepancy between the firm's profits under an agreement and the status quo profits widens. Again, it is shown this "ability to pay" factor is likely to outweigh the substitution effect which arises from the shift in the demand curve associated with these changes and makes a wage increase at the margin more expensive than an increase in employment.¹

d) a fall in status quo profits will lead directly to a shift in bargaining power toward the union and an increase in the wage.

To summarize, according to the Nash bargaining solution, in an economy in which the wage is set through wage bargaining negotiations, any change which alters the difference between the utility available under a bargain and that available if there is no agreement (i.e. at the status quo point) for either the union or the employer affects the solution to the bargaining game and therefore the wage share. Since the solution is described in terms of the relative bargaining

1 Nickell and Andrews, OEP, 1983, p.189.

power of each side, a different solution may be said to reflect a change in bargaining power. In other words, any change which enables the unions to secure a higher wage would be described as representing a change in bargaining power. Supply and demand conditions for labour operate on the wage via their effects on bargaining power. The direction of effect is the same as in the atomistic model of the labour market but the mechanism is different. In the bargaining situation, it operates through the effect of changing supply and demand conditions on the alternative wage and thus on the union's status quo point.

The specific role of the financial and organizational strength of the union (which of course does not figure at all in the atomistic competitive model) arises from its effect on the status quo utility of the parties. As noted above, in the De Menil and Nickell models this operates solely through the costs which the union can impose on the firm if it leaves the industry, but it may well operate more generally through the ability of the union to finance a strike or other industrial action. Thus, changes in union and employers' association financial and organizational strength can play a direct role in the determination of the (expected) wage share. But the game theoretic approach also highlights the other determinants of bargaining power, such as the extent to which the employer has sunk costs in the industry.

Using the microeconomic literature we have been able to identify the major determinants of the relative bargaining power of unions and employers in wage negotiations, and hence

of the expected wage share, given the level of productivity and the expected price level. We return in section 3 to the second stage of Kalecki's argument, viz. the conditions under which such a shift in bargaining power across the economy will be translated into an ex post shift in distribution.

1.2 The degree of monopoly.

There has been a long debate as to what Kalecki meant by the degree of monopoly and whether his theory of distribution based on it was a tautology. To avoid entanglement in this debate, it is best to follow Sawyer's advice and interpret the degree of monopoly as the factors which underlie the margin by which the price exceeds prime costs at a normal level of capacity utilization.¹ Kalecki defined normal capacity utilization as the range of output over which marginal costs are constant. If materials costs are ignored, then prime costs are labour costs and the price-cost margin is directly related to the share of profits (at normal capacity utilization). The purpose of this section is to examine the components of the degree of monopoly at the level of the industry. As noted above, Kalecki claimed that the price-cost margin would vary positively with the level of concentration in the industry, but that this would be modified by the extent of coordination between the firms (i.e. the extent to which there were implicit or explicit cartel agreements), by the entry conditions into the industry and by the scope for

1 Malcolm Sawyer, The Economics of Michal Kalecki, (Basingstoke, Macmillan, 1985), pp.29-30.

non-price competition.

These are the principle factors which have emerged from the more rigorous examination of the determination of the price-cost margin in the industrial economics literature. Particular attention will be given in this survey to the role of foreign competition in export and import markets.

A number of generalizations can be made from the simple equilibrium condition in monopoly (where entry is blockaded) in which the price-cost margin is equal to the inverse of the elasticity of demand. Under the simplifying assumption that marginal costs are constant, the price-cost margin is equal to the gross profit margin and if the elasticity of demand is considered exogenous to the firm, then any rise in the elasticity of demand will be reflected in a fall in the profit margin. The gross profit margin as defined here includes average fixed costs. For this reason, it is necessary to specify that capacity utilization is normal to be able to draw a direct link from the price cost margin to the profit share.

To examine the role of concentration and oligopolistic coordination in the determination of the price-cost margin, Cowling and Waterson¹ and Clarke and Davies² have generalized the monopoly model to the case of Cournot oligopolists with non-zero conjectural variations. In other words, they formulate the equilibrium condition for a market in which there are n oligopolists producing a homogeneous product who

1 K. Cowling, & M. Waterson, "Price-cost margins and market structure", Economica, 43, 171 (1976) 267-274.

2 R. Clarke, and Davies, S.W., "Market structure and price-cost margins", Economica, 49, 195 (1982), 277-287.

choose the quantity they will supply taking account of the expected quantity reaction of their rivals. (Analogous results can be derived from a model of differentiated products where oligopolists choose prices and formulate conjectural variations on the price response of their rivals). A straightforward equilibrium condition can be derived on the assumption that conjectural variations take the specific form where a firm, on changing its output level, expects a constant proportionate quantity response from each rival i.e. the proportionate output change of the rival $dx_2/dx_1 \cdot x_1/x_2$ is a constant, a . The price-cost or profit margin for the industry is equal to the price-cost margin for each firm weighted by its market share and is equal to $[H (1 - a) + a] / e$, where H is the Herfindahl concentration index and e is the price elasticity of demand. The Herfindahl index of industrial concentration is equal to the sum of the squared market shares of the firms in the industry and takes values from zero when there are an infinite number of firms to one, when there is a single firm.

This formulation is useful because it shows that a higher level of concentration in the industry will be ceteris paribus associated with a higher profit margin. However, as Kalecki suggested, this association is modified by the factor a , which is a measure of the degree of oligopolistic coordination between the firms, as well as by e , the elasticity of demand. Although the model assumes a homogeneous product, the term e can be viewed as susceptible to change through the firms' policies of advertizing and product differentiation.

We will examine first the factors which will determine the extent of oligopolistic coordination in an industry and then consider the role of entry. The first task is to establish what structural factors in an industry will determine whether the oligopoly will on the one hand achieve and maintain a "quasi-agreement" through which joint profits approximate the monopolistic outcome or, on the other, in which a non-cooperative outcome closer to the Nash-Cournot solution and inside the joint-profit maximizing frontier is the result. In particular, the aim will be to identify degree of monopoly factors which may change over time and influence the price-cost margin.

Extent of coordination (no entry)

In a single period one-off oligopoly game, the prisoners' dilemma provides an appropriate model: each firm has the choice between a low quantity (high price) and a high quantity (low price) strategy. Just as in the original prisoners' dilemma, non-cooperation is the dominant strategy for both parties, so the Nash-Cournot outcome of high quantity for each firm will occur. With two identical firms, the Cournot solution is at the quantity pair where each firm is producing its profit maximizing output given the output of its rival and where neither wishes to change their output level. Profits will be above the competitive level but below the joint profit maximizing level, which, in the one period setting, would require collusion.

In fact, as long as the game is of finite length, the

Nash/Cournot solution will remain the only viable one. The reason for this outcome is simply that a game of finite length rules out the possibility of retaliation beyond the last period. This means that the best move in the last period is the Cournot one; given this, the best move in the period last but one must also be Cournot since once we know what the outcome is in the following period we are back in a one period prisoner' dilemma, and as we move back toward the first move, we find that no move other than Cournot will ever be chosen.

However, once we relax the assumption that the game is only played once, the joint profit maximizing outcome is possible. When all parties know that the game will be repeated, it is not clear that the only rational strategy to play is the low price/high quantity Cournot one. Since retaliation is possible in a repeated game, each player may find it worthwhile to play the low quantity (or high price) "collusive" strategy in the knowledge that if his rivals do not follow suit, he can always retaliate by reverting to non-cooperation.

It is possible to generate an outcome on the profit frontier for the oligopoly either by making the game infinitely long or if one player thinks that a rival might play a cooperative strategy such as tit for tat i.e. to play the same move made by the opponent in his previous move.¹ Presumably, if the players do not know the length of the game, then the same result will hold. In the case of an infinite

1 Vickers discusses these results in Vickers, J., "Strategic competition amongst the few", Oxford Review of Economic Policy, 1, 3 (1985), 46-7.

period game, the likelihood of a joint profit maximizing outcome occurring will depend on the discount rate applied by each party: the lower the discount rate, i.e. the greater the weight placed on future profits (or the higher the probability that the game will be repeated), the more likely is quasi-agreement.

Thus when the players have identical cost curves, the intuitively plausible result that in a repeated game they will be able to arrive at a cooperative solution without any overt cooperation can be proved rigorously. However, once we drop the assumption of identical firms, we can identify a set of factors which may change over time and which will alter the likelihood of a cooperative outcome. Here the literature on the stability of cartels intersects with that on self-enforcing agreements. Two factors frequently cited in studies of the problems of cartel formation¹ are related to the location of the joint profit maximizing frontier and to the problem of sharing out the profits - namely, differences in the discount rates of the firms and in their costs.

Hicks' distinction between firms who were "snatchers" and those who were "stickers" highlights the fact that businesses may place different weights on profits received in future periods and this will make it difficult for an explicit cartel agreement or a non-cooperative quasi-agreement to be reached. This is especially likely when businesses from different economies are competing in the same market since different

¹ See for example D.K. Osborne, "Cartel problems", AER, 66 (1976), 835-44.

national institutional structures relating to takeovers and the provision of finance, for example, may foster time horizons of varying lengths.

If we now assume that the problem of agreeing on the joint profit maximizing point has been solved, we must consider the sharing of the maximized joint profits. In the typical oligopoly in an economy where there are anti-trust laws which prohibit formal cartel agreements, the case of the perfect cartel where revenue sharing is possible is ruled out. In the absence of such side-payments, and in the general case where businesses have different cost structures, the method of sharing becomes problematic. Thus we would expect that the greater the discrepancy in costs between the oligopolists in the market, the less the likelihood that a quasi-agreement will be reached. Once again this may play a greater role in the open economy as new low cost suppliers enter the market.

To summarize, the literature on the determinants of the degree of coordination which an oligopoly can sustain suggests that the key factors limiting coordination are different rates at which future profits are discounted, and the variation in cost structures amongst the firms. Increasing openness of an industry will tend to reduce the extent of coordination on both counts. We turn now to the external constraints on the achievement of joint profit maximization.

Extent of coordination (entry)

The limitations on the price-cost margin provided by the possibility of entry will also be of particular importance in a period when the economy is becoming more open to foreign

competition. Whereas the floor to the profit margin in a blockaded entry oligopoly with a given degree of concentration is the Cournot solution, i.e. the outcome in the case where there is no coordination between the "members", once the possibility of entry is permitted, the floor falls to the competitive level. Recent discussion of the importance of taking proper account of the rational course of action of the incumbent firm (or oligopoly group) should entry occur, has resulted in a more general and satisfactory theory of entry barriers than the traditional approach of Bain¹. Nevertheless, the factors identified by Bain remain central to the analysis. The contribution of the literature on strategic entry deterrence has been to highlight the fact that Bain's factors may operate as barriers to entry through their role in making unprofitable the exit of the incumbent firm from the industry.

Bain's argument was that the maximum profit margin the incumbent could realize was determined by the ability of rivals outside the industry to enter profitably. To make such a calculation, it was necessary for the incumbent to make an estimate of the demand available to the entrant should he decide to enter. A simple, but arbitrary assumption to make is the Sylos-Labini postulate that in the post-entry situation, the incumbent would continue to produce an unchanged output level. In other words, the entrant would only be able to achieve any sales by cutting the price.

1 J.S. Bain, Barriers to New Competition: Their Character and Consequences in Manufacturing Industries, (Cambridge Mass., Harvard University Press, 1956).

However, a range of alternative assumptions could also be made - for example, the incumbent might reckon that in view of his goodwill in the market, he would capture a proportion of any new sales generated by a lower price. Alternatively, the new entrant might be expected to secure a share in the existing sales of the incumbent as well as any extra sales generated by a fall in the price.

On the basis of the chosen post-entry demand assumption and with a knowledge of the entrant's cost function, the incumbent can calculate the price and therefore the profit margin which will deter entry. The profit margin will be higher, the more inelastic the demand curve expected to face the entrant, the greater the absolute cost advantage of the incumbent and the greater are the economies of scale. The incumbent may alter the entry conditions by engaging in advertizing or product differentiation to reduce the elasticity of demand facing the entrant, and in research and development to achieve an absolute cost advantage.

Such barriers to entry will only be effective if they are credible - i.e. if in the event of entry occurring, the most profitable strategy of the original firm or oligopolistic group would not be to simply share out the market but rather to engage in a price-cutting war, for example. If sharing were to be the most profitable post entry response by the incumbent, the entrant will call the incumbent's bluff, enter and a sharing of the market will occur, reducing the degree of

monopoly.¹ Of course, if agreement on sharing cannot be reached for the reasons discussed above, the non-cooperative outcome will occur (or if this involves losses, one or other firm will be forced to leave the industry).

The strategic entry deterrence approach emphasizes the role of exit barriers in bolstering the position of the incumbent by making it very unprofitable for him to leave the industry. The focus on exit barriers places the weight on sunk costs rather than the fixed cost or scale economies of Bain's approach. Sunk costs are those that cannot be recovered on leaving the industry and include not only the industry-specific components of the fixed capital stock but perhaps more importantly, the intangible assets of customer goodwill and the firm-specific skills built up in the workforce. As Mayer² emphasizes, it is the time-dependent character of such capital assets which makes them of particular significance in determining the commitment of the incumbent to the market. The existence of such barriers may be the outcome of a deliberate policy on the part of the incumbent (as, for example, would be the case in the installation of excess capacity³) or it may simply be the outcome of a historical process during which there is an

1 See A. Dixit, "Recent developments in oligopoly theory", AER(P&P), 72 (1982), 12-17.

2 C.P. Mayer, "Recent developments in industrial economics and their implications for policy", Oxford Review of Economic Policy, 1, 3 (1985), 69.

3 For example A. Dixit, "The role of investment in entry deterrence", Economic Journal, 9 (1980), 95-106.

accretion of firm-specific customer and employee relationships.

One point of particular interest in relation to the effect of sunk costs in raising the degree of coordination achieved by an oligopoly and thus the profit margin, is that these factors are also likely, as was pointed out in the previous section, to shift the balance of bargaining power in wage negotiations toward the unions. The reason is that the greater are sunk costs, the lower is the enterprise's utility at its status quo point. The shift in bargaining power would to some extent offset the tendency for the profit margin to rise as the position of incumbent oligopolists was bolstered by an increasing importance of sunk costs.

The broad conclusions from this survey are that structural changes in the concentration of industry, in the elasticity of demand (which can be altered through advertising and product differentiation policies) and in the factors which influence the degree to which oligopolistic firms can sustain a joint-profit maximizing strategy would be associated with a change in the price-cost margin. The emphasis has been placed on the constraints on the ability of oligopolistic groups to attain an outcome which approximates joint-profit maximization, rather than on concentration per se.

Macro-economic studies of trends in the factor distribution of income sometimes use changes in concentration indices as a measure of changes in "market power". The above discussion has identified a number of important qualifications to this approach. Both in terms of immediate seller concentration in

the market and of potential entry, the role of import competition and of export markets would be expected to play an important part in the determination of the profit margin.

Import competition

There is a broad measure of agreement both theoretically and empirically as to the influence of import competition on pricing behaviour and on the profit margin. It is easy to show that in a simple model where a domestic monopolist faces competition from a differentiated import and where a constant fraction of domestic income is spent on the two products, the domestic profit-maximizing price cost margin is negatively related to the import share, if the elasticities of demand for the import, for the home product and of supply of the import are held constant.¹ With a domestic oligopoly rather than monopoly, the result goes through as long as the structure of the domestic industry is held constant.

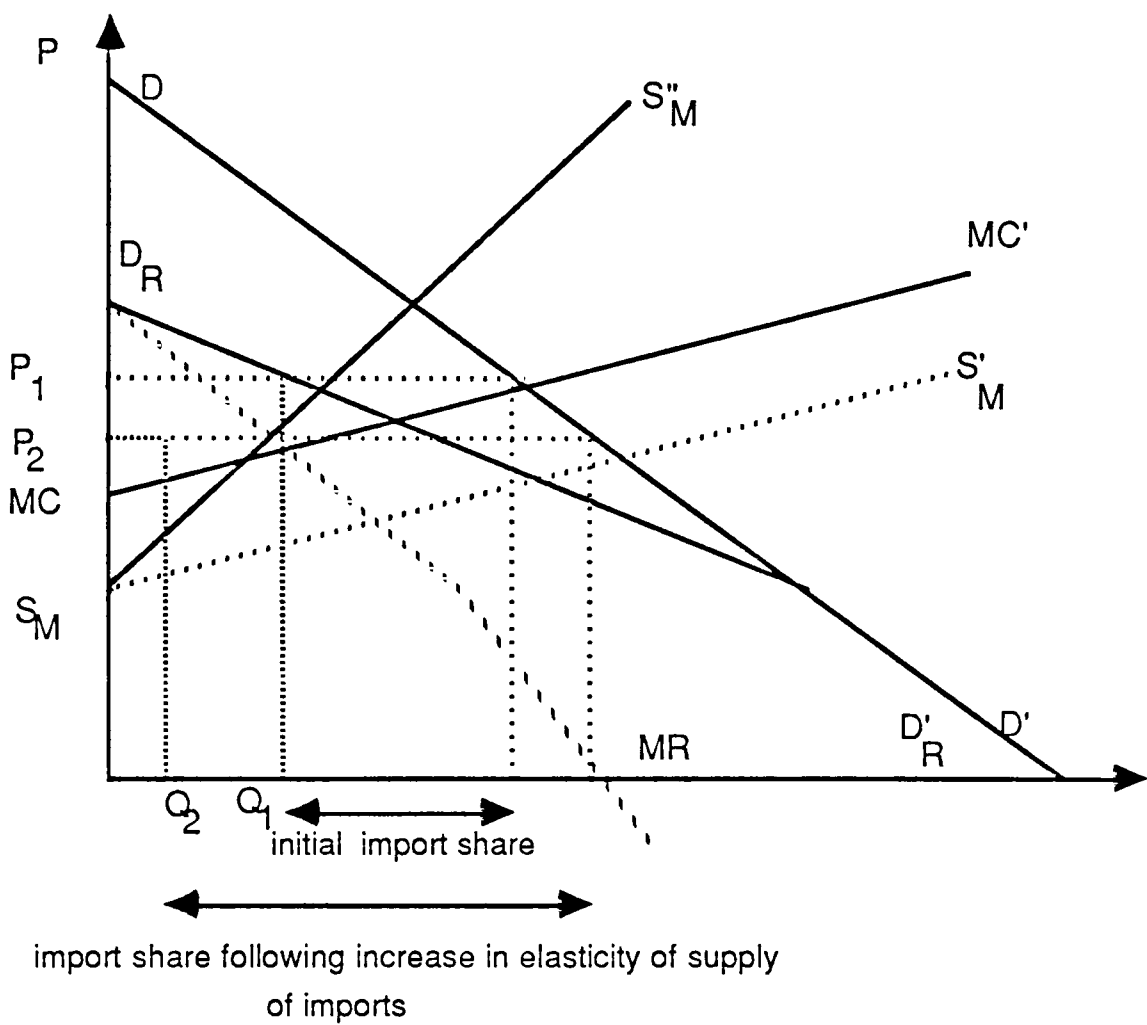
Figure 3.1² illustrates this relationship in the case of an undifferentiated product. The demand curve of home consumers for the product is given by DD' . The elasticity of supply of imports is finite and represented by the upward sloping supply curve, $S_M S_M'$. Thus the residual demand facing the home producers is $D_R D_R'$. The domestic producer(s)' marginal cost curve is $MCMC'$. Assuming for simplicity that the domestic producer is a monopoly or tight oligopoly maximizing joint profits, the price will be set at P_1 and

1 T.A. Pugel, "Foreign trade and US market performance", JIE, XXIX, 2 (1980), 120-122.

2 From H. Marvel, "Foreign trade and domestic competition", Economic Inquiry, XVIII, 1 (1980) 105.

domestic output at Q_1 . An increase in the elasticity of supply of imports, shown by the dotted $S_M S_M''$, results in a leftward shift in the residual domestic demand curve. The price falls reducing the price-cost margin; the share of imports rises.

Figure 3.1
Import Competition and the Price-Cost Margin



It also follows that any increase in market power in the domestic economy will lead to an increase in the import share, just as rising imports or potential import competition will impair market power. Empirical research has found that a significant inverse relationship between a measure of import

competition¹ and the domestic profit margin exists.² The existence of import competition will generally operate more effectively in reducing domestic profit margins where entry barriers are related to costs (scale economies or absolute cost advantages) rather than to goodwill, distributional networks, etc.

Export markets

Rather less attention has been paid to the role of exports in affecting average profitability and there is no general presumption as to the likely effects. The most interesting questions arise in relation to the ability of domestic firms to discriminate in pricing between their domestic and their export markets. There is considerable evidence of the ability of businesses to engage in lasting price discrimination as between home sales and sales to different export destinations.³ Legal and institutional

1 Turner (p. 156) discusses the possibility that changes in the import share might be a better indicator than the level of the import share because the threat of imports may provide an effective constraint on domestic policy despite that fact that the actual share is low. P. Turner, "Import competition and the profitability of UK manufacturing industry", JIE, XXIX, 2 (1980), 155-166.

2 Caves summarizes the literature in R.E. Caves, "International trade and industrial organization", European Economic Review, 28 (1985), 378-380.

3 I.B. Kravis, & R.E. Lipsey, "Price behaviour in the light of balance of payments theories", Journal of International Economics, 8 (1978), 193-246, esp. pp. 234-242. Evidence of widespread price discrimination was also found in a detailed pricing study in West Germany, S. Wied-Nebbeling, Industrielle Preissetzung, Schriftenreihe des Instituts für angewandte Wirtschaftsforschung, Bd. 127, (Tübingen, Mohr, 1975), p.167.

barriers limit arbitrage even in commodities tailor-made for consumer arbitrage such as cars.¹

The simple theory of the discriminating monopolist states that profit maximization will dictate that where markets can be isolated, prices are higher and therefore the profit margin higher on sales in the market with the lower elasticity of demand. Ashworth et. al. develop a model with product differentiation and price discrimination and find that the price-cost margin will reflect both the elasticity of substitution between the two goods in the same market and the overall price elasticity of demand in the market. For the producer with the higher market share, market demand elasticity is relatively more important than is the substitution elasticity. If the elasticity of substitution (i.e. between the competing products) is greater than the market elasticity of demand as would be expected, then the larger firm has the higher price cost margin. If costs are higher in the home market, then the domestic firm will be able to pass them on to a greater extent than is possible in export markets. Also if the elasticity of substitution is lower in the home market than in others, then all prices will be higher in the home market than in others.²

What can we make of these results? Export profit margins

1 See for example M.E. Ashworth, J.A. Kay, & T.A.E. Sharpe, "Differentials between car prices in the UK and Belgium", Institute for Fiscal Studies Report Series, No. 2, 1982, and Y. Mertens, & V.Ginsburgh, "Product differentiation and price discrimination in the European Community: the case of automobiles", JIE, XXXIV,2 (1985), 151-166.

2 Ashworth et. al. "Differentials", 1982, pp.20-23.

are likely to vary widely as firms sell in markets characterized by different substitution elasticities, demand elasticities, distributions of market shares between the home country and exports, and cost structures. The interaction of all these factors with the firm's own costs will determine the export profit margin. The myriad of factors involved is illustrated by Ashworth et. al.'s example of the car market. They show that the fact that the domestic producers in the UK with large market shares (British Leyland/Austin Rover and Ford have about 50% of the market) are high cost producers combines with the particularly low substitution elasticity in the market (mainly because of the tendency of UK companies to purchase British made fleet cars) to produce car prices for all cars which are substantially higher than on the Continent. In the UK, the premium on UK cars is even higher than it is on imported cars. For UK exporters, this means lower profit margins on exports than on domestic sales, whereas for German exporters of cars, it means that the profit margins on sales in the UK market are substantially higher than they are in Germany. Generalizations are difficult to make.

Whilst the theory of barriers to entry predicts that growing import competition puts downward pressure on profit margins, theory does not provide an unambiguous prediction as to the relationship between the share of output which is exported and profit margins. The possibility of taking advantage of greater economies of scale through expanding sales beyond the domestic market and of using price

discrimination between the domestic and export markets will be favourable to the profit margin. However, competitive conditions in the foreign market may have the opposite effect.

2. Exchange Rate Changes and Distribution in a Kaleckian-type Model

The question to be addressed here is whether and under what conditions changes in the exchange rate will affect distribution. This involves an examination of business pricing behaviour in the face of a change in the exchange rate and the integration of the price effect with the effect of the revaluation on wage and materials costs. Both of the standard theories of the balance of payments - the elasticities approach and the monetary approach (the law of one price) ignore the possibility of businesses setting different domestic currency prices as between the home and their export markets. Given the feasibility of price discrimination, changes in the exchange rate provide businesses with the opportunity to reassess their pricing policies in export markets.

We can examine the relative profitability of the two extreme possibilities open to exporters¹:

Pricing policy I: the DM price is kept unchanged, the foreign price therefore reflects the exchange rate change.

Pricing policy II: the foreign price is kept unchanged, the domestic (DM) price and therefore profits reflect the exchange rate change.

¹ Holmes uses this approach to examine the pricing responses to the devaluations in the UK in 1967 and 1973. P.A. Holmes, Industrial Pricing Behaviour and Devaluation, (London, Macmillan, 1978), pp.127-132.

With all values measured in domestic prices and assuming for simplicity that costs are constant, the change in profits on export sales under policy I will be:

$$\Delta \text{ PROF}_I = p.\Delta q - c.\Delta q = (p - c) \Delta q.$$

Under policy II, the change in profits from exports will be:

$$\Delta \text{ PROF}_{II} = q.\Delta p.$$

In the face of a depreciation, policy I will only be the more profitable when the elasticity of demand for exports (i.e. the responsiveness of foreign demand to a reduction in the foreign price) exceeds the inverse of the price-cost margin. The elasticity of demand in response to a reduction in the foreign price is unlikely to be great enough to make policy I the most profitable option in response to a devaluation. This result will be reinforced to the extent that competitors in the export market would tend to follow down any price cut made. The exporters in the devaluing country will generally do better by using the opportunity for price discrimination to keep their foreign prices unchanged and allow their domestic currency receipts and profit margins to increase.

In response to an appreciation, policy I will be more profitable when the elasticity of demand for exports (i.e. the responsiveness of foreign demand to a rise in the foreign price) is less than the inverse of the price-cost margin. Hence for a profit margin of less than or equal to 20%, the price elasticity of demand for exports would have to be at least 5 for policy II to be the most profitable. As long as the elasticity was actually less than this then policy I would be the most profitable to pursue. The usual estimates of

export demand elasticities for manufactures are of the order of 1 1/2 to 2. Hence it would be expected that exporters should raise the foreign currency price of their exports and suffer the associated reduction in volume rather than take a cut in their profit margin across the whole of their export sales.

However, this course of action may not be optimal if the elasticity of demand in response to a price increase out of line with competitors is actually very high (because competitors would not follow the price increase). The estimated elasticities are averages - in some markets, elasticities may be much higher. Hence, behaviour is likely to vary depending on the particular characteristics of the market and product in question. A revaluation may, however, provide the occasion for exporters to increase their foreign prices especially if they face capacity constraints. Thus we would expect the behaviour of exporters to a revaluation, and hence the outcome in terms of the weighted profit margin also to depend on the rate of capacity utilization at the time of the revaluation.

To this point only a partial equilibrium analysis of the effects of revaluation has been carried out. The overall effect of the revaluation on the profit share will depend not only on how firms set their export prices but also on the effects of the revaluation on their costs.¹ To focus on the

1 This model is developed in Wendy Carlin & David Soskice, "Real wages, unemployment, international competitiveness and inflation: a framework for analysing closed and open economies", Unpublished paper, Oxford Institute for Economics and Statistics, 1985 (mimeo).

essentials of the argument, we will assume that the rate of capacity utilization and the rate of unemployment are not affected by the revaluation. Together with the rate of activity in the economy and the associated demand for labour, the labour supply will fix the rate of unemployment. As argued above, the expected real wage which unions are able to negotiate through collective bargaining is inter alia a function of the rate of unemployment. We can express the expected real wage which unions can negotiate through money wage negotiations, w^N as:

$$w^N = W/P^E = n(U, BP) \quad \dots [1]$$

where W , is the money wage, P^E , the expected price level, U , the rate of unemployment, and BP , exogenous determinants of union bargaining power. The partial derivative n_U is negative and n_{BP} , positive.

To highlight the argument, we will take the extreme case where a revaluation would, according to the pricing response of businesses, lead to an immediate reduction in their export profit margins. We will assume that firms leave the dollar price of their exports unchanged, i.e. they follow policy II above. It will be shown that even on this pricing assumption, the effect on profit margins is eroded over time.

A revaluation of the exchange rate will reduce the cost of imported materials (the prices of which are set on world markets) and, depending on how the prices of imported manufactures are set, it may also reduce their prices. We will take the simplest case, where the DM price of manufactured imports is not affected. The domestic price

level is determined as follows:

$$P = mP + W/LP + (\Theta.P^*)/(e.MP), \quad \dots [2]$$

where m is the percentage real mark-up over prime costs, LP , the level of labour productivity (assumed constant), Θ , the inverse of the terms of trade in dollars between manufactures and raw materials, P^* , the world price level for manufactures in dollars, e , the exchange rate (dollars/DM), and MP , materials productivity (assumed constant).

Dividing through by the price level and rearranging gives the real wage in terms of domestic prices which will result from businesses setting prices in this way, w^P :

$$w^P = W/P = LP(1 - m - (\Theta/MP).c_p), \quad \dots [3]$$

where c_p is defined as P^*/eP and often referred to as "price competitiveness".

The domestic price level will rise according to:

$$\dot{P} = a \dot{W} + (1 - a)[\dot{P}^* - \dot{e}], \quad \dots [4]$$

where a is the share of labour costs in total costs and Θ and MP are assumed constant. An exogenously given rate of growth of P^* and hence of the price in dollars of imported raw materials is assumed.

Wages will rise according to

$$\dot{W} = \dot{P}^E + 100 \cdot [(w^N(U_t) - w^{P_{t-1}})]/w^{P_{t-1}}, \quad \dots [5]$$

where a simple assumption is that $\dot{P}^E = \dot{P}^*$, and the subscripts t and $t-1$ refer to the timing of wage and price-setting, assuming that wage rounds are annual and prices are set immediately after the wage negotiations.

According to this model, an appreciation of the exchange rate will lead to a reduction of domestic inflation because of

its effect in cheapening imported materials (through equation 4). The reduction in domestic price inflation will boost real wages in equation 3, i.e. w^r . But from equation 1, the real wage which unions are able to negotiate has not changed, since by assumption there has been no change in the rate of unemployment and hence in their bargaining power. Thus, in the next round, money wage increases will fall because of the discrepancy between w^u and w^r (equation 5). However, in the subsequent price-setting, domestic price inflation will not fall by as much as wage inflation since materials costs continue to rise at the exogenously given rate according to equation 4.

The boost to the real wage as a consequence of the revaluation is only temporary and is eroded through the subsequent rounds of wage bargaining. This means that the immediate drop in export profit margins as a consequence of the revaluation does not persist. Of course, the length of time over which this erosion takes is an important empirical question. Domestic profit margins were protected throughout by mark-up pricing (equation 2). On the pricing assumptions which have been made, there would be no change in the terms of trade associated with the revaluation and hence the short-run effect is simply a transfer from export profit margins to wages.

This simple model highlights the fact that a revaluation will only be the occasion for a lasting decline in profit margins, and ceteris paribus, in the profit share if at the same time, there is an increase in the expected real wage

which unions are able to negotiate. In other words, there must be an increase in union bargaining power (a rise in BP in equation [1]).

3. Conclusions on the Determinants of Distribution in the Kaleckian Approach

As noted earlier, it was Kalecki's view that subject to the degree of monopoly constraints discussed in section 1.2, firms have the ability to fix the price-cost margin through their setting of prices. In an economy operating at normal capacity utilization, an economy-wide increase in union bargaining power which raised the expected real wage would be followed by an increase in prices sufficient to restore the factor distribution to its original level. The one exception which he identified to this general rule was where the rise in union bargaining power which was expressed in higher money wage increases in one industry was itself associated with a fall in the degree of monopoly because of the fears within that industry of the loss of demand to other industries.

A stronger constraint on firms' pricing behaviour arises in an open economy, where it can no longer be assumed that cost increases will simply be marked up to preserve the profit margin. Kalecki's point that industry by industry wage settlements may create a brake on mark-up pricing becomes much more plausible when applied to the question of the passing on of domestic wage increases, given the prices set by foreign competitors.

Thus, foreign competition in import and export markets

plays a dual role in the Kaleckian model. First, growing import penetration and under some circumstances (see above pp. 84-86) growing export dependence will directly affect the degree of monopoly of domestic producers. Secondly, the existence of foreign producers in the product market means that changes in union bargaining power can be reflected in shifts in distribution rather than solely in rising domestic inflation.

A further implication of openness lies with the effect of exchange rate changes on distribution. Taking the case most favourable to an exchange rate change affecting distribution, i.e. where domestic firms maintain the foreign currency price of their products, a revaluation will be reflected in an immediate drop in profitability on export sales. However, as shown above, this drop will be eroded over time unless there has been a simultaneous increase in union bargaining power.

Thus, for an open economy, distribution will be a function of union bargaining power, as well as of the degree of monopoly characterizing the product market. The key determinants of union bargaining power identified above are: the "alternative wage" which in turn reflects the probability of reemployment (a function of the rate of unemployment), unemployment benefits, the "outside wage" (in the non-unionized sector); and the organizational and financial strength of the union. The employers' bargaining power will be affected by its sunk costs in the industry including redundancy costs payable if it leaves the industry, its wealth and its financial and organizational strength.

The key determinants of the price-cost margin are the level of concentration, the extent of coordination between firms and the elasticity of demand. All three are a function of the degree of openness of the economy.

Thus the Kaleckian contribution to the analysis of the factor distribution of income lies in its stress on the role of labour and product market imperfections. By building a framework in which both organized labour and businesses have a degree of power over the prices they receive and ceteris paribus their share of national income, Kalecki drew attention to the underlying factors determining that power. Secondly, he noted that the transition from industry level analysis to the economy as a whole circumscribed the conditions under which a shift in union bargaining power would be translated into a shift in distribution. By extending the Kaleckian model to the open economy, it has been possible to provide a more general case for shifts in bargaining power being reflected in shifts in distribution.

In chapters eight and nine, Kalecki's insights will be brought to bear on the development of the profit share in West Germany, with particular attention given to the open economy extensions of the model. The identification of tension in the labour market as a key determinant of union bargaining power and the role of growing openness in constraining price setting suggest that the Kaleckian approach may provide useful guidance for the German case.

Chapter Four

Measurement and Empirical Evidence

1. Introduction

This chapter addresses the question of whether it is possible to construct economically meaningful measures of profit shares and rates from national accounts data. Before examining in detail the measurement issues involved in constructing such series, the major problems will be outlined. Looking first at factor shares, the intention is to use data from the national accounts to measure the allocation of net output (value added) between profit income and wage income. More precisely, the factor distribution of income generally refers to the distribution of value added at factor cost between the operating surplus and the wage and salary bill. Profits are defined as the operating surplus, i.e. the surplus accruing in respect of productive activities. Income received by virtue of the ownership of other assets and transfers from the government are excluded. The principal conceptual issue that arises when using aggregate national accounts data to measure factor shares is the treatment of the income of the self-employed and methods for dealing with this are discussed below.

The estimation of rates of return¹ raises deeper theoretical issues since the economic concept is a more complex one. The first step is to consider whether accounting

1 The terms rate of return and rate of profit are used synonymously.

data can provide reliable information on the economic rate of return. In other words, it is necessary to examine the relationship between the economic and accounting rates of return on physical capital. This is done by first considering a single pure investment project, where the economic rate of profit is defined as the internal rate of return. The accounting rate of profit will diverge from the internal rate of return and thus from the economic rate of return to an extent which depends on the pattern of quasi-rents over the life of the project, the length of its life and the depreciation pattern assumed by the accountant.

The analysis is then broadened to an aggregate level where there is a balanced set of identical projects each of a different age. The effect of steady growth on the divergence between the average accounting rate of return and the internal rate of return is examined under different assumptions about the pattern of gross quasi-rents. Kay's analysis¹ is used to systematize the deviations of the accounting from the internal rate of return and to show that under plausible assumptions, the net accounting rate of return will approximate the economic rate of return.

The internal rate of return is a real rate: it is also meaningful to talk of a nominal rate of return, where profits are measured so as to include the nominal capital gains on holding both the capital stock and inventories. The nominal rate of return would be compared with the nominal rate of

1 J.A. Kay, "Accountants, too, could be happy in a golden age: The accountant's rate of profit and the internal rate of return", OEP N.S. 28, 3 (1976) 447-460.

interest (or cost of capital) if the objective was to compare the incentive to invest in physical as compared with financial assets. The focus of attention here, however, is on the real rate of return. When calculating the real rate of return, it is necessary to value the capital stock at replacement prices rather than at historic cost. The rate of profit based on an historic cost measure of the capital stock is preferred by a major German research institute in their widely used estimates of profitability¹. As is shown below, such a historic cost based measure of the rate of return is a compromise between a real and a nominal rate and is of limited economic interest.

Although not central to the present study of trends in the profit share and rate, the effect of taxation on the rate of return and the difference between the rate of return on total capital and on equity are also considered in this chapter.

Finally, account is taken of the usefulness of decomposing the trend in profitability into a number of economically interesting parts. In the tradition of the German Council of Economic Experts' calculation of the "cost level neutral wage increase", a method of decomposition is proposed. This makes it possible to calculate the increase in the real product wage that would be available if the net rate of profit was to remain unchanged in the face of changes in productivity, the terms of trade, the indirect tax burden and capital costs. It is also possible to calculate the

1 Bernd Görzig, "Entwicklung von Gewinnen und Renditen im Unternehmensbereich", Vierteljahrshefte zur Wirtschaftsforschung, 1981, 321-334.

corresponding rise in the real consumption wage that would be available, taking account of changes in the relative price of output and consumer goods, and of changes in the income tax burden.

Calculations of rates of return and of factor shares are made for manufacturing and non-agricultural business. Agriculture is excluded from the business aggregate both because of the weight of the self-employed in the sector (which as discussed below creates problems in calculating the profit share) and because price and wage setting behaviour are very different in agriculture than elsewhere in the business sector. For analogous reasons, the house rental sector is excluded from business throughout. The national accounts data does not enable a more disaggregated analysis. However, two further data sets are available which enable series to be calculated at the industry level for factor shares, and for rates of return over the latter part of the period.

These measures of factor shares, rates of return and of the profitability-neutral or "warranted" wage increase provide the basis for the analysis of the trends in factor shares and rates of return in chapters eight and nine.

2. Measuring the Factor Distribution of Income

The most contentious issue that arises when using national accounts data to measure the factor distribution of income is the treatment of the income of the self-employed. In the national accounts, all self-employment income is treated as part of the operating surplus. Over the period

from 1950 to 1973, the ratio of self-employed to total employment in non-agricultural business fell from 19.8% to 11.2%. If, as in the national accounts, the income of the self-employed is all attributed to profits, the structural change in employment away from self-employment imparts a downward trend to the share of profits in value added. This is unsatisfactory since the statistical reflection of the change in status from self-employed to employee is highly unlikely to accord with the actual change in the proportion of operating surplus to value added.

Once the option of following the national accounts convention is rejected, two alternatives remain. The first is to exclude the self-employed from the data altogether, i.e. to use corporate sector data. However, this is infeasible for Germany both because a significant sector of business is unincorporated and because the data available for the corporate sector is incomplete¹. The second option is to impute a wage to the self-employed. The rationale for imputing a wage to the self-employed is that the whole of the income of the self-employed cannot comprise operating surplus. Therefore from the point of view of examining trends in the factor distribution of income, it would seem convenient to split self-employment income into two through the imputation of a wage element to the self-employed.

The appropriate wage to impute is not clear. Two methods

1 Hill, adopts a rather crude method by excluding from consideration those sectors of business with a high self-employment content viz. agriculture, distributive and miscellaneous services, Profits and Rates of Return, 1979, p. 21.

which have been proposed are to impute (i) an opportunity wage or (ii) the average wage in the sector. An opportunity wage could be imputed to the self-employed by using information on the likely destination of status changers. This procedure appears particularly relevant in circumstances where there is a great variation in the wage across a sector - e.g. as between large and small enterprises and where there are firm reasons to believe that the economic situation of the self-employed bears a resemblance to that in a specific part of the sector (e.g. in small enterprises). Boltho uses the wage in small enterprises to impute the wage component of self-employment incomes in Japan¹. He shows² however, that there is less justification for such a procedure in Germany since the differential between the average wage in large and small enterprises is relatively low as compared to the other countries in the sample.

On marginal productivity grounds, the average wage in the sector would be appropriate to impute, with any profit above the average wage constituting a return on the capital employed.

On balance it seems that in dealing with manufacturing and non-agricultural business, imputing the average wage in the sector to the self-employed is the best way of eliminating the bias introduced by the trend decline in self-employment. It will be adopted in this study. This is the method used by

1 Andrea, Boltho, Japan, An Economic Survey. (Oxford, Oxford University Press, 1975), pp.175,183.

2 *ibid.*, Table 2.3, p.28.

the German research institute, the Deutsches Institut für Wirtschaftsforschung (DIW), and in a slightly different form by the Council of Economic Experts (SVR). Instead of imputing a wage to the self-employed, the SVR hold the employment structure constant as a way of eliminating the effect of changes in structure on the trend in factor shares. This assumption, as will be shown below, leads to a series of adjusted wage shares which differs from the average-wage adjusted series by a multiplicative constant. The SVR method results in lower absolute levels of the wage share but a very similar trend. The trend in the profit share will be slightly different as a result of the discrepancy in the levels of the two series.

The wage share uncorrected for self-employment, WSH, is defined as follows:

$$\text{WSH} = \text{W.EES} / [\text{VA/EMT} \cdot \text{EMT}]$$

$$= \text{W/Y} \cdot k$$

where W is the average wage rate
 EES dependent employees
 VA value added
 EMT total employment
 Y value added per employed person
 k EES/EMT.

The wage share corrected by imputing the average wage to the self-employed, WSHa, is defined:

$$\text{WSHa(DIW)} = \text{W.EMT} / \text{VA}$$

$$= \text{W/Y}.$$

The Council of Experts measure of the constant employment structure wage share, WSHa(SVR) is:

$$\text{WSHa(SVR)} = \text{W}_0.\text{EES}_0 / [\text{VA}_0/\text{EMT}_0 \cdot \text{EMT}_0]$$

$$= \text{W}_0/\text{Y}_0 \cdot k_0$$

$$= \text{WSHa} \cdot k_0,$$

where t denotes the current year and zero. the base year.

Table 4.1 shows the uncorrected wage share and the DIW and SVR adjustments to take account of the change in the employment structure. The DIW's is the preferred measure and will be used throughout the study. All the series show an upward trend in the wage share, although the uncorrected wage share exaggerates the rise.

Table 4.1

Gross Wage and Profit Shares, self-employment adjustments

manufacturing, 1955 - 1973

Levels (%)	1955	1973	%pa gr 73/55
Gross Wage shares			
WSH	58.0	68.8	+ 1.0
WSHa(DIW)	64.3	72.8	+ 0.7
WSHa(SVR)	58.0	65.7	+ 0.7
Gross Profit shares			
PRSHA(DIW) = 1 - WSHA(DIW)	35.7	27.2	- 1.2
PRSHA(SVR) = 1 - WSHA(SVR)	42.0	34.3	- 0.9

Sources: Own calculations from National Accounts data, Statistisches Bundesamt, Volkswirtschaftliche Gesamtrechnungen (VGR) Revidierte Ergebnisse 1960 bis 1981 linked to VGR Revidierte Reihen ab 1950.

In the bulk of the literature, factor shares are measured as a proportion of value added at factor cost, rather than at market prices. This is the appropriate definition of value added for the purpose of examining developments in the profit share when questions of the availability of an operating surplus for investment are raised. For the same reason, it is the gross profit share rather than the net which should be used (line 1 in Table 4.2). If, however, attention is focused

on changes in distribution as they are perceived by unions in formulating wage bargaining strategies, then the net wage share at market prices is relevant (line 8 in Table 4.2). In so far as workers are concerned with the factor distribution of income, they are concerned with their ability to negotiate a share of value added measured at the prices they must pay. Since it is the share of available value added that is at issue, value added net of depreciation is the correct measure. We return to explicit calculations of real wage growth in terms both of product and consumer prices and after taking account of income taxes in section 4.4 below.

As the figures in table 4.2 indicate, the greatest difference in the trends is between the measures net and gross of depreciation. Secondly, the profit shares at factor cost fall about 40% faster than do those at market prices. However, whilst the levels of the wage shares at factor cost and market prices differ considerably, the difference in trend is negligible because the ratio of the two value added series remains constant.

Before the summary data are presented, there are a number of more technical points to note. As described above, the profit share is the share of the operating surplus in value added and therefore includes interest and rent. The distinction between productive and redistributive transactions is maintained. This principle also implies that profits should exclude stock appreciation, i.e. that changes in stocks should be valued at current prices.

Table 4.2

Levels and Trends of Wage and Profit Shares,
net and gross, factor cost and market prices, 1955, 1973

manufacturing

Levels (%)	1955	1973	% pa gr 73/55
Profit shares ^a			
gross FC	35.7	27.6	- 1.1
gross MP	43.0	35.0	- 1.0
net FC	31.5	19.3	- 1.8
net MP	39.8	28.4	- 1.4
Wage shares ^a			
gross FC	64.3	72.4	+ 0.7
gross MP	57.0	65.0	+ 0.7
net FC	68.5	80.7	+ 0.9
net MP	60.2	71.6	+ 1.0

Note:

- a In all subsequent calculations of factor shares, the measures at factor cost defined as follows will be used following the DIW treatment of self-employed income:
- Gross profit share = $(GVA_F - WSA)/GVA_F$
 Net profit share = $(NVA_F - WSA)/NVA_F$
 Gross wage share = $1 - \text{gross profit share}$
 Net wage share = $1 - \text{net profit share}$
 GVA_F: gross value added at factor cost, i.e. gross output at producers' values less intermediate consumption at purchasers' values. Gross output includes goods and services sold as well as changes in stocks of finished goods. Stock appreciation is excluded.
 NVA_F = GVA_F - DEP_F, where DEP_F is depreciation at replacement prices.

Sources:

Own calculations from VGR Revidierte Ergebnisse 1960 bis 1981, Revidierte Reihen ab 1950, see data appendix to this chapter for details.

In 1977, the German national accounts were revised to bring their treatment of interest payments into line with the United Nations System of National Accounts (SNA). Before 1977, interest payments were counted twice in the production accounts, that is, both in the sector where they were generated and in the sector in which they were received, creating an inconsistency in aggregate calculations for the

business sector. The rationale for counting interest payments twice was to ensure positive profits for the financial institutions sector, since if their profits are evaluated before the payment of interest, profits will be negative.¹

The correction of the value added series to eliminate the double counting made a significant difference to the level of the profit share and also to the trend: a lower level for the profit share is now recorded and a steeper downward trend. Under the previous system, the increase in the rate of inflation over time inflated the interest payments entered as imputed bank charges in the value added of financial institutions and hence falsely inflated the profit figures.

Table 4.3

Gross and Net Profit Shares, levels and trends, 1955-1973
business, manufacturing, non-manufacturing

Levels (%)	1955	1973	% pa gr 73/55
<u>Business</u>			
gross	34.7	28.1	-1.0
net	29.6	19.8	-1.6
<u>Manufacturing</u>			
gross	35.7	27.6	-1.1
net	31.5	19.3	-1.8
<u>Non-manufacturing</u>			
gross	33.4	28.7	-0.7
net	27.4	20.4	-1.3

Sources: For detailed explanation of sources and methods of calculation of basic series, see data appendix to this chapter.

Table 4.3 presents the levels and rates of decline of net

1 Aike Blechschmidt, Rentabilität und Krise: Diskussion und Berechnung der Rendite von 1960 - 1975 für die gewerbliche Wirtschaft in der BRD, (Frankfurt, Campus Verlag, 1981).

and gross profit shares for the years 1955 and 1973 for non-agricultural business, manufacturing and non-manufacturing business.

3. Economic and Accounting Rates of Return

3.1 Theoretical problems

The economist interested in what has happened to the return to investment in fixed capital at the aggregate (industry or sectoral) level has available national accounts estimates of gross profits, depreciation (capital consumption), and of the capital stock. The capital stock estimates at replacement prices are the appropriate ones to use when the aim is to obtain an indication of the development of the performance of the private sector in producing a surplus in relation to the real outlays of capital required for production. Depreciation must also be measured at current prices so as to ensure that holding gains due to the rise in the price of the capital good do not distort the true cost of capital consumption over the period. Similarly, since it is a measure of the real rate of return which is desired, profits must be calculated net of stock appreciation. When the objective is to measure the return earned on the whole of the real physical capital stock, rather than that part financed by equity, it is appropriate to calculate profits before the payment of interest.

Using this accounting data, the question arises as to how the real net rate of return so calculated relates to the true economic rate of return, where the real net economic rate of

return is defined as the internal rate of return. The valuation issues involved in estimating the real rate of return from accounting data will also be discussed below.

To clarify the relationship between economic and accounting rates of return, it is helpful to begin by looking at a single pure investment project.¹ The unique internal rate of return is the discount rate which will equate the present value of the flow of gross profits to the initial cost of the project. In each successive period, it is possible to calculate the present value of the remaining years of the project: this measures the net present value of the capital stock, i.e. the net capital stock valued using economic depreciation at each point in time. In other words, the annual decline in the value of the project is equal to the economic depreciation. In the simple case where gross profits are constant over the life of the project, the annual decline in the net capital stock increases each year as a less and less discounted quasi-rent (gross profit) is 'discarded' from the stream. This means that depreciation rises as the project proceeds and thus, that net profits fall each period (constant gross profits less increasing depreciation).

Given the way in which economic depreciation is defined, net profits divided by the net capital stock each period yield a constant rate of return equal to the internal rate of return regardless of the pattern of gross profits. However, suppose

1 Unless it is a pure investment project, there may not be a unique internal rate of return. Issues of uniqueness are discussed in J.S. Flemming, and J.F. Wright, "Uniqueness of the internal rate of return: a generalization", Economic Journal, 81 (1971), pp.256-263.

that a conventional depreciation rule is applied such as is the case in the compilation of the national accounts, where in Germany straight-line depreciation is used. Straight-line depreciation allocates the initial cost of the project (the gross capital stock) evenly across the expected life of the project, i.e. depreciation per annum is constant. In general, this procedure will produce a systematic bias in the average net accounting rate of return. The source of the bias can be illustrated using our simple example of a constant stream of quasi-rents.

The denominator (the net capital stock) is underestimated when straight line depreciation is used because straight line depreciation writes off the capital stock too fast. Depreciation is too high in the early years of the project. Since the method used to calculate the net capital stock is to subtract the accumulated depreciation fund from the gross capital stock and the accumulated depreciation fund is too large, the net capital stock is reduced below its economic value.

Hence, in the case of a project with a constant stream of quasi-rents, the use of straight-line depreciation will produce an average net accounting rate of return over the life of the project above the internal rate of return.¹ The second

1 A simple example illustrates this bias:
 A project has an initial cost of 100 and the following structure:

	<u>period 1</u>	<u>period 2</u>
cash flow	100	100
net profits	50	50
net capital stock	100	50

The net accounting rate of return is calculated in either of two ways:

point to note is that each year whereas the net rate of return calculated using economic depreciation is constant, it rises over the life of the project when straight-line depreciation is used. However, once we move from the case of a single project to the aggregate level then in the case of a steady state where each period a project identical to the one above is begun whilst another is concluded, the aggregate average rate of return measured each period will be equal to the average rate of return for a single project over its life. In such a no growth situation with a balanced set of projects, it is only the relationship of the average accounting rate of return over the life of the project to the internal rate of return which is germane. As we have seen, in the case of a constant series of gross quasi-rents, the average net accounting rate of return is an overestimate of the internal rate of return.

Once the assumption of zero growth is relaxed however, the time profile of the discrepancies between the net accounting rate of return and the (constant) internal rate of return becomes important as the aggregate average accounting rate of return is now a weighted average of the accounting rates of return. Since the net accounting rate of return is closer to the internal rate of return at the outset of the project, growth will tend to reduce the discrepancy between the measures.

(i) the average of each of the two periods rates of return: $50\%, 100\% = 75\%$

(ii) total profits divided by total net capital stock: 66.7%. The internal rate of return of this project is 62%.

Whilst in the case of a single investment project or set of investment projects, the economist has all the data that are required to calculate the internal rate of return, this is of course not in general true. In particular, in the compilation of the national accounts, neither the pattern of gross profits over the life of an item of capital equipment nor the length of life is known. It is precisely this lack of information which forces the adoption of conventional depreciation rules and their application to conventional lengths of asset lives. Given this lack of information, the best that can be done is to identify the direction of the bias of the measured net accounting rate of return from the internal rate of return under different assumptions about the time profile of the quasi-rents, the growth rate, the level of the rate of return and the length of life of the asset.

Kay¹ provides a convenient method for discussing these biases. He proves that whatever the pattern of gross profits and for any arbitrary depreciation scheme for a single pure investment project there will be a unique A such that

$$A = \frac{\int_0^z a(t) v(t) e^{-At} dt}{\int_0^z v(t) e^{-At} dt} \quad (1)$$

and A is the internal rate of return, where

$a(t) = (f(t) - d(t)) / v(t)$, and is the net accounting profit rate in each period t ,
 $f(t)$ gross quasi-rent in each period t

1 Kay, OEP, 1976.

$d(t)$ depreciation in each period, using any depreciation scheme

$v(t)$ net accounting capital stock (using any depreciation scheme) and

$$v(0) = v(z) = 0.$$

Thus from the accounting data for net profits and the net capital stock over the life of the project, it is possible to calculate the internal rate of return. It is not surprising that in principle the internal rate of return could be calculated from this data, since the series of net cash flows including the initial outlay on the project is all that is required to compute the internal rate of return. However, the merit of Kay's proof is the simple form of the relationship between the accounting data and the internal rate of return. His formula makes it possible to deduce the divergences under different circumstances between A and B. the accounting rate of return, where

$$B = \frac{\int_0^z a(t) v(t) dt}{\int_0^z v(t) dt} \quad (2).$$

From Kay's formula, it appears that the source of the deviation between the internal rate of return and the average accounting rate of return over the life of a project (or equivalently, the aggregate average accounting rate of return in a steady state) is the failure to discount the net profit and net capital stock series. This result illuminates the special case noted by Hill¹, where the net accounting rate of

1 Hill, Profits and Rates of Return, 1979, columns 6-10 of Table 2.3, p.52.

return using straight-line depreciation is identical to the internal rate of return viz. when net profits fall arithmetically to zero over the life of the project. Here, the accounting rate of return is constant and equal to the internal rate of return each period, with the result that failure to discount net profits and the net capital stock makes no difference to the result. It follows that if there is no trend in the accounting series of rates of return, the value of the net accounting rate of return will be the internal rate of return. However, there is no a priori reason to expect that net profits fall arithmetically to zero.

The extreme case discussed above, where gross profits are constant over the life of a project would seem to be an unlikely one. An example would be where the physical productivity of the equipment remained unchanged over its life, there was no trend in variable costs and where it was expected that after n years there would be a technical innovation or a total mechanical failure which would reduce the flow of gross profits to zero at a single blow. In the presence of embodied technical progress, it is much more likely that the stream of gross quasi-rents will have a declining trend. The extreme end of the spectrum would be the competitive case where a piece of equipment is scrapped when its gross quasi-rents fall to zero.

In this case, net accounting profits fall faster than would yield equality between the accounting rate of profit and the internal rate of return: indeed, at the end of the project, net profits are negative. Since the sum of the

annual depreciation is the same whatever the method used, the fact that depreciation is too high at the end means that it must be too low in the early years. Hence relative to the true net capital stock, the accounting capital stock is too high in the early years. The accounting rate of return is above the internal rate of return at the beginning of the project and below at the end, but is on average too low. Discounting would reduce the weight on the later values of net profits (including the negative ones) and on the net capital stock when the (negative) divergence from their economic values was greatest. This leaves the discounted average equal to the internal rate of return. In part 3 of the data appendix to this chapter, an example illustrating such a case is provided (see Table 4A.3).

Kay's result also shows how the introduction of steady state growth affects the relationship between the average accounting rate of return and the internal rate of return. If y_T machines with life n are installed at time T and the economy grows at rate γ , then the average accounting rate of return, B is given by

$$B = \frac{\int_0^n y_T e^{-\gamma t} a(t) v(t) dt}{\int_0^n y_T e^{-\gamma t} v(t) dt} \quad (3)$$

It is straightforward to see that if the growth rate is equal to the internal rate of return, i.e. $\gamma = A$, then this would ensure that $B = A = \gamma$. In other words, growth at the rate equal to the internal rate of return exactly offsets the failure to discount in the accounting calculation. Hence growth will offset the understatement of the internal rate of

return by the accounting rate in the case where there is a declining trend in the net accounting rate of return over the life of the project, and offset the overstatement in the opposite case. However, to the extent that the internal rate of return is greater than the rate of growth, the correction provided by the effect of growth will be incomplete.

Consider a comparison of two economies in steady state growth each with the same rate of growth, but one with a higher internal rate of return. (For both, the internal rate of return exceeds the rate of growth and we assume that gross quasi-rents fall to zero over the life of projects of the same length in each case.) From the above results, it is clear that the accounting rate of return will understate the internal rate of return in both cases but by less in the case of the economy with the lower internal rate. Hence a comparison of the accounting rates of return between the two economies would tend to understate the difference in their internal rates of return. This result will continue to hold if the growth rates of the two economies differ, as long as the difference between the internal rates of return exceeds that between the growth rates. A further straightforward deduction from equation (1) is that the deviation of the average accounting rate of return from the internal rate will be greater, the longer the lives of the assets concerned. Failure to discount the series of net accounting profits and capital stocks will make a greater difference, the longer the life of the asset.

These results are useful when assessing the accuracy of

net accounting rates of return as an indicator of the internal rate of return. In an oligopolistic economy, the appropriate scrapping rule is to scrap when the quasi-rents fail to provide some margin over direct costs, rather than when they are zero. The accounting rate of return will tend to understate the internal rate of return but not by as much as in the competitive case. Furthermore, in as much as steady state growth results can provide guidance outside the steady state, any decline in the internal rate of return will tend to be understated by the measured accounting rates.

This discussion provides support for using with reasonable confidence the net accounting rate of return as a indicator of the internal rate of return. This measure is frequently used¹ although a major study of rates of return for the OECD² proposed the use of the lower of the net and gross accounting rates of return. However, Hill's result that the internal is less than the minimum of the net and gross accounting rates of return only holds for the case where gross quasi-rents are constant over the life of the asset. As we have seen, for the case where gross quasi-rents decline to zero, the internal rate of return lies above the net rate. Choosing the lower of the net and gross rates in this case, will reduce the accuracy of the measure. The likelihood of a declining series of quasi-rents combined with the effects of

1 For example, Martin Feldstein, & Lawrence Summers, "Is the rate of profit falling?" Brookings Papers on Economic Activity 1 (1977), 211-228, J.S. Flemming, et. al., "Trends in company profitability" Bank of England Quarterly Bulletin, 16, 1 (1976), 36-52.

2 Hill, Profits and Rates of Return, 1979.

growth increases the accuracy of the net rate and weakens the case for Hill's advocacy of the gross rate.

The real net accounting rate of return is defined as follows:

$$NPR = [(GVA_F - DEP_R) - WSA] / NK_R$$

where the subscript F denotes factor cost and R, replacement prices. NK_R is the net capital stock, calculated by the subtraction of replacement cost depreciation from each age cohort of the gross capital stock. The gross capital stock is calculated by the perpetual inventory method to show the total value at current replacement prices of all past expenditures on the stock of capital goods.

3.2 Valuation problems in the estimation of rates of return

Two of the German research institutes, the DIW and the RWI have constructed series for profitability at both a sectoral level and a disaggregated level.¹ There has been a debate between these institutes as to the appropriate way to measure rates of return, hingeing largely on the question of valuation of the capital stock, depreciation, and the treatment of stock appreciation.

The RWI follows the internationally standard procedure²

1 Bernd Görzig, "Die Komponenten der Gewinn- und Renditeentwicklung in den Wirtschaftszweigen", VzW, (1982), 167-193.

Joachim Schmidt, "Das Anlagevermögen in der Bundesrepublik Deutschland, 1960 bis 1978", RWI-Papiere Nr. 17, 1982.

2 For example, Hill, Profits and Rates of Return, 1979, Flemming et. al., BOEQB, (1976), 36-52, Feldstein and Summers, BPEA, (1977), 211-228, Kay, OEP, (1976), 447-460.

of using replacement prices to value both the capital stock and depreciation and of omitting stock appreciation from gross profits. The DIW dissents from the standard procedure, arguing that the conventional accounting valuation practice incorporated in the "least value principle" should be applied to the national accounts data. Thus they argue that capital stock and depreciation should be valued at historic cost. Stock appreciation is added back to profits on the grounds that it constitutes part of distributable profits.

A number of considerations are involved in the choice of valuation method and in the treatment of stock appreciation. There is one straightforward reason for calculating the historic cost rate of return: it is what businesses do, in the sense that it accords with conventional accounting practice. However, it is an unsatisfactory measure from an economic viewpoint. As noted in the introduction to this chapter, there are two different meaningful economic rates of return, the real and the nominal rate of return: the historic cost measure falls uneasily between the two. The nominal rate of return is equal to the real rate of return plus the rate of nominal capital gains and would be the appropriate measure to compare with the nominal rate of interest / cost of capital. The difference between the nominal, real and historic cost rates of return is illustrated in the simple example in table 4.4.

Historic cost rates of return are an unsatisfactory measure of the real or nominal return on capital, since whereas profits are boosted by the higher sales prices, the

additional cost of the fixed capital in use by the firm is ignored. The nominal rate of return is a consistent measure of the nominal gains arising from inflation.

Table 4.4

Illustrative Example comparing Real, Nominal and Historic Cost Rates of Return

Assume that all prices and wages double after the beginning of period t+1

Capital Stock

		fixed	Volume stocks	total	fixed	Value stocks	total
	t	100	50	150	100	50	150
RC:	t+1	100	50	150	200	100	300
HC:	t+1	100	50	150	100	50	150

Revenue, Costs and Profits

		Sales	Labour	Dep.	Net profits
	t	100	50	10	40
RC:	t+1	200	100	20	80
HC:	t+1	200	100	10	90

Rates of Return

real: profits at RC / capital stock at RC = $80/300 = 27\%$
nominal: nominal cap. gains + real rate = $80/300 + 150/150 = 127\%$
historic cost: profits at HC / cap stock at HC = $90/150 = 60\%$

A number of qualifications to the interpretation of the real rate of return measure defined above remain. In the simple example above, the change in the price index of output and of capital goods was assumed to be the same. The question arises however, as to how to treat any real capital gains or losses associated with a change in the relative price of the firm's assets and of output. In the replacement cost calculation, real capital gains in terms of the consumer price

index are not included in the rate of return. In other words, it is a rate of return in terms of the assets of the firm. From the shareholder's point of view, it could be argued that any gain in the value of the firm's assets relative to the CPI should be included in the numerator. The resolution of the question as to how real capital gains should be treated depends on the purpose for which the calculation is being made. If the focus is on the likely rate of return on newly acquired similar capital, i.e. on investment prospects of the firm as a going concern as it is in the present study, then the capital goods price index is the appropriate one to use and real capital gains should be excluded. A welfare analysis concerned with the consumption possibilities afforded through the returns on investment would suggest the use of the consumer price index.¹

Since the differences between the historic and replacement cost methods of valuation and between a measure of gross profits with and without the inclusion of stock appreciation arise only when there is inflation, the divergence between the measures will be greatest toward the end of the period here examined. To quantify and systematize the discrepancies arising from differences in definition, calculations of gross and net profit rates have been made using the different definitions on a consistent data set, derived from the official national accounts. The required

1 For a discussion of these matters see pp.373-374 of Colin Mayer and Shirley Meadowcroft, "Equity Rates of Return in the UK - Evidence from Panel Data", Recherches Economiques de Louvain, 50, 3-4 (1984), 363-398.

data was available for the non-agricultural business sector (excluding house rentals).

Since the conceptual difference was sharpest between the definition proposed and that of the DIW, a comparison using the same data set was made between the two. Rates of profit were calculated for three years: 1961, 1969 and 1973 according to the DIW definition and the one proposed above:

DIW: net profit rate = $(GVA_F - DEP_H + SA - WSA) / NK_H$

WJC: net profit rate = $(GVA_F - DEP_R - WSA) / NK_R$.

Notation: GVA gross value added
DEP depreciation
SA stock appreciation
WS wage and salary bill
WSA adjusted wage and salary bill, average wage in sector attributed to self employed
GK gross capital stock
NK net capital stock
Subscripts: F factor cost; H historic cost; R replacement prices.

A stepwise comparison of the two measures highlights the sources of the deviations. As table 4.5 shows, there is a marked difference in the trends in profitability portrayed. In particular, whereas the proposed measure shows a doubling in the annual rate of decline of the profit rate in the years 1969-73 as compared with the period 1961-69, the DIW shows it almost halving. The distortion, as the table indicates, arises both from the failure to measure the capital stock at replacement prices and to a lesser extent from the inclusion of stock appreciation.

Table 4.5

Discrepancies in the Definitions of Rates of Return

Non-agricultural business (excluding house rental), 1961-1973

<u>Levels (%)</u>	1961	1969	1973
DIW net	25.6	20.3	19.2
WJC net	20.2	15.6	12.2
<u>Ave rates of decline (% pa)</u>	69/61	73/69	73/61
Effect of HC accounts and inclusion of stock appreciation			
DIW net	2.4	1.3	1.9
if RC cap stock is used	2.4	3.4	2.4
if RC dep is used	2.5	4.3	2.6
if SA is excluded (WJC)	2.6	5.1	2.8

Sources: All calculations from data from VGR, Revidierte Ergebnisse 1960 bis 1981, Tables 3.21, 3.51, 3.2, 3.48.

The second source of divergence between the series for rates of return calculated by the DIW, RWI and the ones presented here is in the underlying data series used. All three series use national accounts data for value added and employee compensation but different capital stock and associated depreciation series. The relevant comparison here is between the RWI and the national accounts capital stock data, since the DIW do not publish any replacement price capital stock data.¹ There is quite a disturbing difference between the RWI and the National Accounts official capital stock series which is reflected in rates of return calculations (see table 4.6). Using the preferred definition of the net rate of return, the rate of profit in manufacturing

1 The DIW constant price capital stock series is very similar to the national accounts series, see table 2, p.12 of Bernd Görzig, "Das Sachvermögen in den Wirtschaftsbereichen der Bundesrepublik Deutschland", DIW Beiträge zur Strukturforschung Heft 71, 1982.

using the national accounts data declines by 1.8% p.a. between 1961 and 1969 and by 6.5% p.a. between 1969 and 1973. Using the RWI data, the net rate of return rises slightly from 1961 to 1969 and then declines by 7.5% p.a. from 1969 to 1973. This discrepancy is accounted for by the fact that the RWI capital stock grows much more slowly in the 1960's at both current and constant prices - for example, the growth rate of the RWI net capital stock at current prices rises from 6.9% p.a. in 1961-69 to 12.1% in 1969-73. Using national accounts figures, the growth rate rises by much less: from 9.0% to 11.1%.

Differences in the capital stock series arise from different assumptions about the length of life of equipment. The RWI uses lower average asset lives and assumes that from the mid 1960's to the mid 1970's asset lives fell by 20%.¹ Using the same sources of information on service lives as the RWI, the Statistisches Bundesamt has also reduced asset lives.² In a comparison between the three series, Görzig notes that the different trend growth rate shown by the RWI data cannot easily be explained by the differing assumptions about asset lives.³ In view of the difficulties in accounting for the RWI data, the national accounts estimates only will be used.

1 Schmidt, RWI-Papiere Nr. 17, 1982, p.8.

2 Heinrich Lützel, "Estimates of capital stock by industry in the Federal Republic of Germany", Review of Income and Wealth, 23 (1977), p.69.

3 Görzig, "Das Sachvermögen ...", DIW Beiträge zur Strukturforschung, 1982, p.13.

Table 4.6

Discrepancies in Data Series: net rate of return, capital stock.

manufacturing, 1961 - 1973

		% p.a. compound growth rates	
		1969/61	1973/69
Capital stock			
Gross	(nat. accounts)	9.7	11.5
Gross	(RWI)	8.3	11.8
Net	(nat. accounts)	9.0	11.1
Net	(RWI)	6.9	12.1
Net rate of profit			
WJC	(nat.a/c net prof, cap. stock)	-1.8	-6.5
RWI	(" " gr prof; RWI cap., dep)	+0.5	-7.5

Memorandum Items

Constant price gross capital stock:

Nat. accounts	6.9	6.3
DIW	7.2	6.4
RWI	5.2	5.7

Sources: National Accounts data from VGR, Revidierte Ergebnisse 1960 bis 981, RWI data from Schmidt, RWI-Papiere Nr. 17, DIW data from DIW, Daten zur Entwicklung, 1977.

Table 4.7 shows the levels and rates of change in the net and gross real rates of return on total capital for non-agricultural business. manufacturing and non-manufacturing business using the preferred measure defined above. The annual series are presented in the data appendix to this chapter.

Table 4.7

Net and Gross Rates of Return, 1955, 1973
business, manufacturing, non-manufacturing

Levels (%)	1955	1973	% pa gr 73/55
<u>Business</u>			
net	25.8	12.2	-2.4
gross	19.0	12.5	-1.6
<u>Manufacturing</u>			
net	35.6	15.2	-2.5
gross	25.6	14.6	-1.6
<u>Non-manufacturing</u>			
net	19.5	10.4	-2.1
gross	14.9	11.2	-1.2

Sources: For detailed explanation of sources and methods of calculation of basic series, see data appendix to this chapter.

3.3 Disaggregated factor shares and rates of return

National accounts data is not available in sufficient detail to calculate profit shares or rates at a disaggregated level. However, some data is available from the DIW and from the EEC statistical office, Eurostat. The DIW data permits the calculation of gross profit shares for nine branches of manufacturing over the whole of the period but does not allow the corresponding rate of profit to be calculated because there is no capital stock data or depreciation at replacement prices. The Eurostat data allows consistent profit shares and rates to be calculated for twelve manufacturing branches for the second part of the period (from 1961 to 1973), although some estimation is required to derive value added at factor cost, and the wage and salary bill. The manufacturing aggregates in both sets of data differ somewhat from the national accounts but show similar trends.

Looking first at the DIW data, the disaggregation allows one to check whether the trend decline in the profit share from 1955 can be accounted for by the changing sizes of industries within manufacturing, i.e. groups with a lower than average profit share accounting for a growing proportion of manufacturing value added. However, this is not the case - a weighting of the 1973 profit shares by 1955 weights makes less than 2% difference to the aggregate manufacturing profit share (1955 weights gives a profit share in 1973 of 30.8% as compared with the actual share of 30.2%).

Table 4.8 shows the levels and rates of change of the gross profit for the DIW's nine branches of manufacturing for 1955 and 1973.

Table 4.8

Disaggregated Gross Profit Shares, DIW series, 1955-1973
manufacturing

Levels (%)	1955	1973	%pa gr 73/55	VA Sh 55	VA Sh 73
Chemicals	56.4	29.7	- 2.2	11.8	12.0
Iron & Steel	50.5	31.2	- 1.8	15.2	10.1
Food & Drink	53.7	36.6	- 1.5	12.9	9.2
Engineer (+veh)	29.5	29.6	+ 0.0	18.8	27.3
Elect & Prec eng	30.1	25.1	- 0.9	13.6	17.2
Building mats	35.7	40.7	+ 0.7	5.8	5.7
Wood & Paper	36.0	34.1	- 0.3	9.8	11.0
Textiles	24.5	31.8	+ 1.5	6.6	3.8
Leather	28.2	18.2	- 1.7	5.4	3.7
Manufacturing	38.9	30.2	- 1.1	100.0	100.0

Sources: Own calculations from DIW. Daten zur Entwicklung ... 1950-1975, 1977, Tables A61, B13, B19, B25.

The Eurostat data, although available only for a limited period, has the advantage both of a consistent capital stock series at current replacement prices and of exports and

imports defined for the same branches of manufacturing. Exports and imports are available from 1965. This is useful for the examination in chapters eight and nine of the relationship between the openness of the branch and profitability. Table 4.9 presents the net profit rates, and the share of imports and exports in value added for each of the twelve sectors for 1965 and 1973. The annual series for profit shares and rates from 1961 and for export and import shares from 1965 are provided in the data appendix.

Table 4.9

Disaggregated Net Profit Rates, Import and Export Shares,
Eurostat series, 1965, 1973
 manufacturing

Levels (%)	1965				1973		
	pr rt	im sh ^a	ex sh ^b		pr rt	im sh	ex sh
metal.min	1.8	18.8	14.7	:	1.4	19.2	18.2
non metal.min	24.4	10.5	8.4	:	19.5	10.7	10.8
chemicals	13.2	14.9	27.8	:	6.5	19.4	32.6
metal fabric.	24.0	3.2	10.1	:	22.5	7.4	15.2
machinery	14.5	23.4	37.8	:	13.5	14.4	43.9
office eq.	19.3	38.2	56.7	:	24.3	29.0	40.3
electr. eq.	24.9	7.9	20.5	:	18.8	26.9	26.9
transpt eq.	8.0	13.5	39.5	:	7.5	20.3	42.3
food & drink	25.6	8.0	2.4	:	15.1	10.1	5.1
textiles	23.6	16.7	10.0	:	7.6	28.9	19.6
paper	46.3	9.2	4.4	:	24.0	9.7	7.9
rubber	41.9	9.3	13.6	:	27.7	13.7	21.0
manufacturing	19.0	13.0	16.9	:	13.6	15.6	22.0

Note: a import share = imports / (imports + value of production - exports)

b export share = exports / value of production

Source: Eurostat, see data appendix to this chapter.

4. Post-Tax and Equity Rates of Return

4.1 Post-tax rates of return

For the purpose of examining the relationship between investment and profitability, it could be argued that the investment decision of companies is responsive to movements in post-tax rather than pre-tax profitability. Although the present study is not primarily concerned with the dependence of investment on profitability, it is interesting to know whether there is a difference between the trend of pre-tax and post-tax profitability. In German manufacturing, corporate enterprises account for just over one half of the capital stock, but for less than 20% of the capital stock in the business sector as a whole.¹ The definition of the relevant rate of taxation to apply to calculate a post-tax rate of return for corporations is unclear since the extent to which businesses take account of the tax position of the ultimate owners of the firm's debt and equity is open to question.

Once this issue has been resolved, the option arises of whether to calculate an ex post average rate of taxation from actual taxes paid² (i.e. actual payments of corporation tax as a percentage of net profits) or to do a more sophisticated

1 Julian Alworth, draft for chapter five of M.A. King and Don Fullerton, (eds), The Taxation of Income from Capital, (Chicago, University of Chicago Press, 1984) mimeo p.2 - the data are from Bundesbank Jahresabschlüsse der Unternehmen, used to construct table 5.12 in King and Fullerton, p.177 but actual percentages are not given there.

2 As for example is done in Horst Albach, "The rate of return in German manufacturing industry: Measurement and policy implications", in Daniel M. Holland (ed), Measuring Profitability and Capital Costs: An International Study, (Lexington Mass., Lexington Books, 1984).

calculation¹ of the marginal rate of taxation on the return from an extra unit of fixed capital identical to the capital stock already in place. The latter involves discounted present value calculations of the value of investment grants and of depreciation provisions for new investment.

After several changes in the corporation tax rate and depreciation allowances in the immediate post-war years², the rate remained at 51% until 1977. If a corporation distributed one half of its earnings, the partial split-rate system meant that the effective rate of taxation was 37%.³ The simplest method of gauging the discrepancy between pre-tax and post-tax profits for the corporate sector is to calculate corporation tax paid as a percentage of total corporate sector profits (before the payment of interest, dividends or tax). Cycle averages for the three cycles since 1960 indicate a gradual reduction in the corporate tax burden: 46.9% (1961-65), 40.7% (1965-69), 38.8% (1969-73).⁴

Measuring the rate of effective taxation in the same way but using a sample of balance sheets of corporate businesses, Albach found that for manufacturing, the rate of decline between 1961-65 and 1969-73 was much less than the aggregate data suggest: he found a decline of only two and a half per

1 As is done by for example Flemming, BOEQB, 1976, or King, & Fullerton, The Taxation of Income from Capital, 1984.

2 Discussed in chapter five.

3 Albach, "The rate of return in German manufacturing industry", 1984, p.280.

4 Calculated from VGR, Revidierte Ergebnisse, 1982, Table 3.26 pp.218-219.

cent. For the corporate sector as a whole, his data suggest a rate of decline of 11% - still somewhat less steep than that recorded above.¹

The most sophisticated attempt to estimate for Germany the marginal tax rate on capital income (i.e. the tax on the return to a small increase in the level of real investment in the domestic non-financial corporate sector) is presented in King and Fullerton's international study² and shows a modest decline from 1960 to 1970. They calculate the marginal rate of capital taxation from the perspective of the ultimate saver, taking full account therefore both of tax incentives for investment and of the interaction of the corporate and personal tax structures. They find that the effective marginal tax rate has been rather stable in Germany, falling only by 6.5% between 1960 and 1970, i.e. from 52.5% in 1960 to 49.1% in 1970 (it was 48.1% in 1980).³ The decline in the tax rate for the 1960 to 1970 period varies in extent between 5 and 10% across asset types (machinery and buildings⁴) and industries (manufacturing, other industry and commercial).

In the King and Fullerton study, calculations are only made for the three years and they do not construct a series for the post-tax rate of return along the lines of Flemming's

1 Albach, "The rate of return in German manufacturing industry", 1984, Table 7.3, p.282.

2 King & Fullerton, The Taxation of Income from Capital, 1984, ch 5.

3 *ibid.*, Tables 5.24, 5.25, 7.14, pages 190-1, 301.

4 Taxation on stocks remained constant.

calculations for the Bank of England¹. Nevertheless, these results suggest that in terms of post-tax profits, the downward trend in the pre-tax rate of return in the corporate sector has, at least since the beginning of the 1960's, been offset to a small extent by a fall in the burden of corporate taxation.

Using the King and Fullerton methodology, an indicator of the appropriate tax rate on profits for non-corporate business is the weighted personal income tax rate, where the weights are the distribution of capital income across income tax categories. This marginal tax rate was stable: 45% in 1961 and 46% in 1974.²

The evidence from these different approaches suggests that there was some variation over the period in the ex post average rate of corporate taxation, with a slight reduction in the burden in the early 1970's. In terms of the ex ante marginal rate for the corporate sector, a small decline was estimated for the decade 1960 to 1970. These results along with the stability of the weighted marginal income tax rate indicate that for manufacturing and for the total business sector, some small offset to the trend decline in pre-tax profitability may have taken place through the corporate tax system.

1 Flemming, BOEQB, 1976. pp.41-2, 46-50.

2 King & Fullerton, The Taxation of Income from Capital, 1984, Table 5.11, p.173.

4.2 Equity rates of return

Attention in this study is focused on the real rate of return on total capital irrespective of how it is financed. Nevertheless, it is interesting to find out whether there was a systematic trend divergence between the rates of return on equity and on total capital. A divergence between the real return to total capital and to equity could occur (a) because of a change in real gearing brought about either by a change in the balance between debt and equity finance or through the effect of an increase in the rate of inflation which reduces the real value of debt, or (b) because of a change in the real rate of interest. A calculation of the real return to equity is only possible through an analysis of balance sheets.

To see how the ratio of the rate of return on total capital to that on equity has changed, use can be made of the Bundesbank's survey of corporate balance sheets, which they adjust to depict the financial situation of the business sector as a whole. To calculate the return to equity, it is necessary to know the interest component of total profits. This was computed in an approximate fashion by applying an estimate of the effective interest rate on debt (which will differ from the current interest rate to an extent depending on the age of the debt) to the debt component of the capital stock. It is necessary to use a real rate of interest so that the equity rate of return includes the capital gains to the equity holders as a result of the erosion of the real value of the debt. The appropriate rate of inflation to use is that of the capital goods price index since it is the erosion of the

value of the debt in relation to the replacement cost of the capital stock which is at issue.

Table 4.10

Estimates of the Equity Rate of Return

business, 1961 - 1973

Levels (%)	1961	1965	1969	1973
Debt/RC equity ^a	28.2	33.5	37.3	39.9
Effective interest rate on debt				
nominal	4.8	5.6	5.6	6.8
real ^b	0.2	2.4	1.0	0.6
Rate of return on total cap ^c	11.8	10.1	9.8	7.7
Rate of return on equity	15.0	12.7	13.0	10.5
<u>Using real interest rate:</u>				
Return on equity / retn on total	1.3	1.3	1.3	1.4
<u>Using nominal interest rate:</u>				
Return on equity / retn on total	1.2	1.2	1.2	1.0

- Notes:
- a RC equity is calculated as the residual by subtracting financial assets less liabilities from the replacement cost capital stock plus stocks.
 - b Nominal effective interest rate (i.e. taking account of the term structure of the debt) less % rate of change in capital stock price index.
 - c Total capital is the replacement cost capital stock plus stocks.

Sources: Capital stock, capital stock price index, stocks, net profits excluding stock appreciation from VGR Revidierte Ergebnisse 1960 bis 1981, 1982, Tables 3.50, 3.21, 3.2, 2.4.

Financial assets less liabilities, i.e. debt from GÖrzig, VZW (1981), Table 5. p.334.

Effective interest rate from Statistisches Jahrbuch 1961 Tables X C 2 pp.228-9, X C 5 pp.230-1, 1965 Tables XI C 3 pp. 186-7, XI C 6 pp.188-9, 1969 Tables XI C 2 pp.208-9, XI C 5 pp.212-3, 1973 Tables 12.15 pp.186-7, 12.16, pp.188-9.

As table 4.10 indicates, when the real rate of interest is used, the equity rate of return rises relative to the rate

of return on total capital at the end of the period when the real rate of interest is depressed by rising inflation. As would be expected, just the opposite pattern emerges when the nominal interest rate is used. The same pattern is found by Albach (who uses the nominal interest rate) in his calculation from a sample of balance sheets.¹

5. Measures of "Warranted" Real Wage Growth

In the development of policy proposals on wage guide-lines, the German Council of Economic Experts argued that wage increases in line with productivity growth might be excessive because although the gross share of profits in value added at factor cost would be protected in this way, the net rate of profit could still be reduced. They pointed to the effects of changes in the terms of trade, indirect taxes and in capital costs as additional non-labour costs which could reduce profitability. For profitability to remain unchanged in the face of any additional burden from these factors, labour costs would have to be reduced. For a given growth rate of labour productivity, wages have to bear the brunt of adjustment. Businesses can influence the real product wage to the extent that they can adjust prices and influence money wage bargains, but they may not be able to fully protect the profit rate.

This notion of a "cost neutral" or "warranted" wage increase provides a useful way of decomposing the pressures on

1 Calculated from Tables 7.3, 7.8, pages 282, 290 in Albach, "The rate of return in German manufacturing industry", 1984.

profitability. It is possible to calculate the real wage increase that would have been necessary for the net profit rate to remain constant given the growth in labour productivity, the change in the terms of trade and in capital costs. Capital costs can change either because of a change in the average age of the capital stock, in the relative prices of capital goods and output or in the physical requirements of capital per unit output. In the absence of an input-output analysis, this calculation can only be done accurately for the business sector as a whole, because double counting in the production accounts makes it impossible to separate out materials costs for sectors within business. All imports are considered as inputs to the business (including retailing) sector on the assumption that the import content of government sector production can be ignored.

Because of the emphasis in this study on the manufacturing sector, estimates have been made of the warranted real wage increase. The key approximation required was for the price index of the value of manufacturing production in order that the change in materials costs could be identified. A weighted average of the value added price index and of the price index for materials inputs to the industrial sector was used. The weights were those estimated by Artus from input-output tables for use in his pricing equation for manufactures.¹ In the discussion of methodology below, the case of the business sector as a whole is taken

1 Jacques R. Artus, "The behavior of export prices for manufactures", IMFSP, 21 (1974), 583-604, Table 2, p.597.

(the results for business and manufacturing are shown in Table 4.11).

There are a number of alternative methods of proceeding in the calculation of the warranted increase in the real wage. It would be possible to make an initial calculation of the warranted increase in real wages in terms of value added prices and then adjust for changes in the terms of trade.¹ However, calculating relative price changes of capital and output using the value added price index for output has the unsatisfactory implication that, for example, a rise in the price of imports ceteris paribus which is associated with a decline in the value added price index (we assume no change in the prices of output) would appear as a rise in unit capital costs, when by assumption there had been no change in output prices. A terms of trade effect is confused with the changing relative prices of capital goods and output.

Conversely, problems arise if the decomposition is done entirely in terms of final output ($C + I + G + X$) rather than value added ($C + I + G + X - M$). For example, suppose there is an equal increase in exports and imports with their relative prices unchanged. If the constant price capital output ratio was measured in terms of final output, then a measured reduction would result from an equal increase in exports and imports which could have been the result, for

1 T.E. Weisskopf, "Marxian crisis theory and the rate of profit in the post war US economy", Cambridge Journal of Economics, (1979), 341-378, decomposes the pressures on profitability using a value added price index, definitions pp. 375-6.

example, of the substitution of bought-in components (from abroad) for domestically produced components, with output for export increasing in line. If the constant price capital output ratio is thought of as a measure of the unit capital requirements for production, it is not appropriate for it to register a change as the result of a change in the mix of domestic and imported inputs.

A method of decomposition which avoids both of these problems can be derived as follows. The net rate of profit is written as:

$$\frac{NPF}{NK} = \frac{NPF}{Y} \cdot \frac{Y}{NK} \quad (1)$$

where upper case letters denote nominal variables, and lower case, real. Unless specified by the prefix N, all variables are gross of depreciation.

Notation:

NPF	net value added less the adjusted wage and salary bill
WSA	adjusted wage and salary bill, ave wage imputed to self-employed
Y	gross business value added at market prices
NK	net capital stock at replacement prices
T	indirect taxes less subsidies
DEP	depreciation
Q	gross business value added at market prices plus imports
P _Y	price index of gross business value added
P _Q	price index of gross business value added plus imports
P _{NK}	price index of the net capital stock
E	employment

Now, the "profit share" can be decomposed to illuminate the role of indirect taxes and of depreciation:

$$\frac{NPF}{Y} = 1 - \frac{WSA}{Y} - \frac{T}{Y} - \frac{DEP}{Y} \quad (2)$$

where WSA is the adjusted wage and salary bill, T indirect taxes net of subsidies and DEP, depreciation.

The output / capital term can be written as:

$$\frac{Y}{NK} = \frac{P_Y}{P_Q} \cdot \frac{y}{k} \cdot \frac{P_Q}{P_{Nk}} \cdot \frac{k}{Nk} \quad (3)$$

where q is domestic output, i.e. expenditure on $C + I + G + X$. Equation (3) permits the separation of the terms of trade effect. It is shown by changes in the price index of value added, P_Y , to the price index of output, P_Q , since a rise in the price of imports will cet. par. reduce the ratio of the price indices of value added to final output thereby reducing the scope for a real wage increase consistent with a constant net profit rate. Secondly, the effect of changes in the volume of output to capital is measured by the ratio of gross output to gross capital stock (both at constant prices) so as to capture the technological relationship. A fall in the term y/k will cet. par. reduce the scope for a wage increase. Thirdly, the relative price changes between output and capital goods are measured and finally, the term, k/Nk , measures the effect on profitability of changes in the ratio of the gross capital stock to the net. A fall in this term as the consequence, for example, of a slowing in the rate of growth of the capital stock will put downward pressure on profitability. It is worth emphasizing the counterfactual nature of these calculations; if real wages had grown at a different rate, then other variables such as the capital/labour ratio would have responded to some extent.

For small changes, the sum of the proportionate growth of NPF/Y and Y/NK is equal to the proportionate growth of NPF/NK . Thus to calculate the increase in real wage which is available if the net rate of profit is to remain unchanged, we

proceed as follows, (using $\dot{a}$ to represent the time derivative of a , da/dt):

$$\frac{(\dot{NPF}/Y)}{NPF/Y} + \frac{(\dot{Y}/NK)}{Y/NK} = 0 \quad (4)$$

$$\text{And, } \frac{(\dot{NPF}/Y)}{NPF/Y} = \frac{WSA}{NPF} \cdot \frac{(\dot{E}/y)}{E/y} + \frac{WSA}{NPF} \cdot \frac{(\dot{W}/P_y)}{W/P_y} + \frac{Y}{NPF} \cdot (\dot{T}/Y) + \frac{Y}{NPF} \cdot (\dot{D}/Y) \quad (5)$$

$$\text{and, } \frac{(\dot{Y}/NK)}{Y/NK} = \frac{(\dot{P}_y/P_q)}{P_y/P_q} + \frac{(\dot{y}/k)}{y/k} + \frac{(\dot{P}_q/P_{Nk})}{P_q/P_{Nk}} + \frac{(\dot{k}/NK)}{k/NK} \quad (6).$$

Hence, by substituting (5) and (6) in (4) and rearranging,

$$\frac{(\dot{W}/P_y)}{W/P_y} = \frac{(\dot{y}/E)}{y/E} - z_1 \cdot (\dot{T}/Y) + z_2 \cdot \frac{(\dot{P}_y/P_q)}{P_y/P_q} - z_1 \cdot (\dot{D}/Y) -$$

$$z_2 \cdot \frac{(\dot{k}/y)}{k/y} - z_2 \cdot \frac{(\dot{P}_{Nk}/P_q)}{P_{Nk}/P_q} - z_2 \cdot \frac{(\dot{Nk}/k)}{Nk/k} \quad (7),$$

where the weights Y/WSA and NPF/WSA are represented by z_1 and z_2 respectively. To identify the rise in the real wage in terms of output prices, i.e. the real product wage, that is consistent with an unchanged real rate of profit, it is necessary to subtract the rate of growth of output prices relative to the value added price index.

$$\frac{(\dot{W}/P_q)}{W/P_q} = \frac{(\dot{y}/E)}{y/E} - z_1 \cdot (\dot{T}/Y) - z_3 \cdot \frac{(\dot{P}_q/P_y)}{P_q/P_y} - z_1 \cdot (\dot{D}/Y) -$$

$$z_2 \cdot \frac{(\dot{k}/y)}{k/y} - z_2 \cdot \frac{(\dot{P}_{Nk}/P_q)}{P_{Nk}/P_q} - z_2 \cdot \frac{(\dot{Nk}/k)}{Nk/k} \quad (8),$$

where the weight $(Y-T-D)/WSA$ is represented by z_3 . It is convenient to group together the last four terms as 'capital cost' terms when tabulating the contributions of each component to the warranted real product wage increase. Thus, the warranted increase in the real product wage is equal to the growth in real value added per head less the increase in the share of indirect taxes less any deterioration in the external terms of trade (reflected in a rise in the output price index relative to the value added price index as import prices rise) less the rise in capital costs.

Table 4.11 shows the decomposition of the pressures on profitability in both the business and manufacturing sectors. The patterns revealed in the table are used in the analysis of the trends in profitability in chapter eight.

To calculate by how much post-tax real consumption wages could have increased if the net rate of profit was to remain unchanged, it is necessary to subtract the rate of change in the consumer price index relative to the output price index and the proportionate rate of change in the ratio of post tax income of wage and salary earners to their pre-tax earnings from the left hand side in equation (8), using the fact that

$$\frac{W_{pt}}{P_c} = \frac{W}{P_q} \cdot \frac{P_q}{P_c} \cdot \frac{W_{pt}}{W} \quad (9),$$

where P_c is the consumer price index and W_{pt} is the post tax wage.

Table 4.11

Decomposition of the "Warranted" Growth Rate of Real
Product Wages

A. Business, 1955 - 1973

For the real rate of profit to remain constant, the

	rise in prodvty	less ↑ in ind. tax	less ↓ in tot	less ↑ in cap costs	permits rprw ↑	actual rprw ↑
	% p.a. rates of growth					
50-55	7.2	0.2	- 0.1	- 0.2	7.3	5.0
55-61	4.9	- 0.1	- 0.3	+ 0.8	4.4	4.8
61-65	5.1	- 0.1	+ 0.4	+ 0.7	4.2	5.0
65-69	5.1	+ 0.1	- 0.7	+ 0.2	5.4	5.5
69-73	3.9	- 0.4	- 0.6	+ 0.4	4.2	5.8

Memorandum Items

	% p.a. gr k/y	% p.a. gr P_k/P_q	Actual-warr. rprw growth	Act rprw gr -pdy growth
50-55	- 4.6	0.7	- 2.3	- 2.2
55-61	1.0	0.5	0.4	- 0.1
61-65	1.6	0.5	0.8	- 0.1
65-69	1.0	0.3	0.1	0.4
69-73	1.6	0.0	1.6	1.9

B. Manufacturing, 1955 - 1973

For the real rate of profit to remain constant, the

	rise in prodvty	less ↑ in ind. tax	less ↑ in mat. costs	less ↑ in cap costs	permits rprw ↑	actual rprw ↑
	% p.a. rates of growth					
50-55	8.4	- 0.1	3.1	- 1.0	6.4	5.5
55-61	5.2	0.3	- 0.4	+ 1.6	4.3	6.6
61-65	5.6	- 0.1	- 0.5	+ 1.5	4.7	6.5
65-69	5.8	0.3	- 1.0	- 0.2	6.7	5.7
69-73	3.9	- 0.3	- 0.6	+ 0.6	4.2	6.6

N.B. minus signs indicate an increase in the scope for real product wage rises and plus signs, a decrease.

Sources: See data appendix to this chapter.

Table 4.12

Decomposition of the "Warranted" Growth Rate of Real
Consumption Wages

business, 1955 - 1973

For the real rate of profit to remain constant, the
 permitted $\uparrow$ less $\uparrow$ in less $\uparrow$ permits | actual post-
 in rprw P_c/P_q dir.tax rconw $\uparrow$ | tax rconw $\uparrow$

% p.a. rates of growth					
50-55	7.3	- 0.9	+ 0.4	7.9	5.6
55-61	4.4	- 0.2	+ 0.5	4.2	4.5
61-65	4.2	- 0.4	+ 0.1	4.5	5.3
65-69	5.4	+ 1.2	+ 1.4	2.7	2.8
69-73	4.5	- 0.7	+ 2.3	2.9	4.2

Memorandum Items

	Actual-warr. rconsw growth	Actual post-tax rconsw growth - pdy growth
1950-55	- 2.3	- 1.6
1955-61	0.3	- 0.4
1961-65	0.8	0.2
1965-69	0.1	- 2.3
1969-73	1.3	0.3

N.B. minus signs indicate an increase in the scope for real consumption wage rises and plus signs, a decrease.

Sources: See data appendix to this chapter.

Apart from rounding errors, the difference between the warranted and actual real consumption wage is the same as that between the warranted and actual real product wage, since both measure the pressure on the net rate of profit. The striking result shown in this table is the sharp rise in the direct tax rate from the mid 1960's. Because of this, the warranted increase in the real consumption wage between 1965 and 1969 was much less than that of the real product wage.

The methods and data series outlined in this chapter form the basis for the empirical analysis of the course of the

factor distribution and rates of return in Germany over the period from 1950 to 1973.

DATA APPENDIX TO CHAPTER FOUR

1. Sources of Data

A. Aggregate Series of Profit Shares and Rates: Non-agricultural business¹, Manufacturing.

	<u>Series</u>	<u>Sources</u>	<u>Notes</u>
1.	Net value added (current prices) Depreciation Wage and salary bill	a: T3.2 b: T2	(a) contains the most recent revisions to the value added series. It was linked to (b) at 1960.
2.	Dependent employees Employment (employees + self-employed)	a: T2.4 b: T23	Linked as for 1.
3.	Gross capital stock (current prices) Net capital stock (current prices)	a: T3.50 b: T14 c: TA19	(a) is the official capital stock series. It was linked at 1960 to a series constructed from (c) by use of an investment goods price index (from (b)) to provide an estimate of the capital stock at current prices.
4.	Gross capital stock (constant prices)	a: T3.50 c: TA20	(a) was linked to (c) at 1960.
<u>B.</u>	Additional Series Required for Warranted Real Wage Growth Calculation.		
5.	Net capital stock (constant prices)	a: T3.50 c: TA19	As for 4.
6.	Gross value added (constant prices)	a: T3.4 b: T4	As for 1.
7.	Indirect taxes	a: T3.2 b: T2	As for 1.
8.	Imports (current & constant prices)	a: T3.7 b: T3	As for 1.
9.	Consumer price index	a: T2.5 b: T6	As for 1.

1 The house-rental sector is excluded from business throughout.

10.	Pre- and post-tax income of wage and salary earners.	a: T3.45 b: T9	As for 1.
11.	Price index inputs of materials to manuf.	d:	Series linked as necessary.
12.	Price index manufacturing output.	a: T3.2 T3.4	Weighted average of value added price index and 11 with weights of 0.63 for value added and 0.37 for materials from Artus, <u>IMF SP</u> , 1974, Table 2, p.597.

C. Estimation Required to Complete Eurostat Disaggregated Data.

1. Gross value added at factor cost: Eurostat (e) data is available only from 1970. A series for 1960 to 1970 was constructed by applying the ratio of gross value added at factor cost to gross value at market prices for the manufacturing sector as a whole (from (a)) to the Eurostat series at market prices. This was then linked to the (e) series at 1970.
2. Wage and salary bill: Eurostat data is available from 1970. The trend in the wage and salary bill from source (c) for the branch corresponding most closely to the Eurostat branch was used and linked to (e) at 1970.
3. All other data required to calculate net profit rates and shares, and import shares (defined as imports / (imports + value of production - exports) and export shares (defined as exports / value of production) was available from (e).

SOURCES:

- a. Statistisches Bundesamt, Volkswirtschaftliche Gesamtrechnungen, Fachserie 18, Reihe S.5, Revidierte Ergebnisse 1960 bis 1981, 1981.
- b. Statistisches Bundesamt, Volkswirtschaftliche Gesamtrechnungen, Fachserie N, Reihe 3, Sonderbeiträge, Revidierte Reihen ab 1950, 1972.
- c. DIW. Daten zur Entwicklung des Produktionspotentials, des Einsatzes von Arbeitskräften und Anlagevermögen sowie der Einkommensverteilung in Wirtschaftsbereichen der Bundesrepublik Deutschland 1950-75, Berlin, 1977.
- d. Wirtschaft und Statistik, (Index der Grundstoffpreise, published monthly in "Statistische Monatszahlen"), various issues.
- e. Eurostat, Structural Data Base, computer printout, 1986.

2. Data Series

Table 4A.1

Annual Series for Net and Gross Profit Shares and Rates, Non-Agricultural Business, Manufacturing, Non-Manufacturing
(as defined in 1.A above)

	Non-Agricultural Business				Manufacturing			
	Share of Profit gross	Profit net	Rate of Profit gross	Profit net	Share of Profit gross	Profit net	Rate of Profit gross	Profit net
%								
1950	31.47	25.42	13.68	19.86	33.69	28.94	20.65	31.74
1951	32.74	26.90	15.08	21.69	35.40	30.75	23.36	35.19
1952	35.29	29.66	17.31	24.84	37.26	32.70	24.88	36.78
1953	33.78	28.22	17.20	23.96	36.65	32.31	24.88	36.17
1954	33.25	27.80	17.10	23.28	35.67	31.32	24.46	34.64
1955	34.66	29.60	18.98	25.79	35.69	31.49	25.61	35.58
1956	34.35	29.20	18.89	24.86	24.43	30.03	23.94	32.03
1957	34.85	29.55	18.98	24.40	34.38	29.78	23.07	30.07
1958	34.08	28.50	18.06	22.53	34.58	29.86	22.78	29.37
1959	35.13	29.69	18.58	23.23	34.94	30.25	15.94	29.66
1960	34.92	29.45	18.60	22.87	33.84	29.03	22.69	28.60
1961	33.20	27.27	17.21	20.20	32.32	27.05	20.92	25.18
1962	32.09	25.67	16.04	18.02	30.25	24.31	18.46	20.98
1963	31.46	24.51	14.95	16.16	29.95	23.36	16.99	18.58
1964	32.61	25.72	15.55	16.98	31.71	25.16	17.90	19.99
1965	33.20	25.21	15.99	16.54	31.30	24.53	17.53	19.41
1966	31.32	23.79	14.42	15.09	29.89	22.35	15.78	16.67
1967	31.82	23.80	13.87	14.28	31.62	23.56	15.66	16.58
1968	32.69	24.99	14.95	15.91	33.35	25.99	17.99	20.42
1969	31.93	24.36	14.63	15.60	32.83	25.80	18.37	21.31
1970	30.34	22.63	14.00	14.52	29.92	22.55	16.76	18.61
1971	29.53	21.49	13.26	13.31	29.08	21.11	15.53	16.47
1972	29.16	20.98	12.96	12.82	28.05	19.71	14.50	14.92
1973	28.06	19.79	12.51	12.16	27.60	19.32	14.59	15.18
Non-Manufacturing Business								
	Share of Profit gross	Profit net	Rate of Profit gross	Profit net				
1950	28.86	21.45	9.87	13.12				
1951	29.57	22.40	10.50	13.90				
1952	32.87	26.10	12.90	17.54				
1953	30.55	23.67	12.57	16.26				
1954	30.51	23.87	12.65	16.13				
1955	33.37	27.42	14.89	19.52				
1956	33.96	28.04	15.60	20.00				
1957	34.98	29.00	16.24	20.42				
1958	33.32	26.86	14.92	17.87				

%	Non-Manufacturing Business			
	Share of Profit		Rate of Profit	
	gross	net	gross	net
1959	35.21	29.06	21.87	19.07
1960	36.13	30.04	16.07	19.32
1961	34.21	27.65	14.83	17.01
1962	34.05	27.21	14.51	16.17
1963	32.98	25.71	13.61	14.60
1964	33.52	26.33	13.97	15.00
1965	35.06	25.99	14.95	14.65
1966	32.72	25.22	13.49	14.06
1967	32.05	24.06	12.58	12.73
1968	32.28	24.27	12.85	13.03
1969	31.80	23.75	12.29	12.32
1970	31.08	23.06	12.19	12.08
1971	30.14	22.06	11.75	11.42
1972	30.29	22.27	11.94	11.59
1973	28.67	20.41	11.16	10.45

Table 4A.2

Annual Series for Eurostat Disaggregated Profit Rates and Import and Export Shares (as defined in 1.C above)

Net Profit Rates (%)

	Manuf	Metal. min.	Non-met. min.	Chem.	Metal fabric.	Machin- ery	Office equip.
1960	26.8	28.7	32.6	26.0	22.2	18.2	18.2
1961	23.6	14.1	29.0	17.9	23.3	22.6	21.7
1962	19.4	3.9	24.8	11.4	19.7	19.1	15.0
1963	16.9	-1.1	22.2	10.3	17.2	15.4	16.9
1964	19.1	1.2	25.9	12.5	21.2	15.6	18.2
1965	19.0	1.8	24.4	13.2	24.0	14.5	19.3
1966	15.7	-1.4	20.5	12.4	18.5	7.7	29.2
1967	15.4	-0.9	16.3	10.6	18.1	15.5	31.7
1968	19.4	0.8	20.4	16.0	24.8	18.5	30.1
1969	20.4	6.7	23.1	15.8	30.3	19.9	27.8
1970	17.9	6.0	23.3	10.5	29.6	18.3	28.1
1971	15.1	-1.2	21.9	7.6	25.1	18.1	25.8
1972	14.2	-3.0	22.6	7.9	22.5	17.0	27.0
1973	13.6	1.4	19.5	6.5	22.5	13.5	24.3

Net Profit Rates (%)

	Electr. equip.	Transpt equip.	Food & drink	Textiles	Paper products	Rubber	Other manuf.
1960	20.8	23.1	35.1	18.3	54.2	57.9	-2.4
1961	22.7	16.7	31.9	20.4	51.0	57.0	-0.7
1962	16.4	15.4	28.2	20.1	47.0	50.6	4.6
1963	13.3	14.5	26.4	16.7	42.8	44.7	3.8
1964	21.8	14.8	26.1	20.3	44.0	45.6	8.9
1965	24.9	8.0	25.6	23.6	46.3	41.9	12.7
1966	18.5	5.8	23.8	19.4	37.5	34.2	11.6
1967	16.2	5.7	22.5	17.8	31.7	31.1	12.7
1968	25.5	9.3	22.3	24.8	37.8	41.0	15.6
1969	29.7	9.2	20.1	24.9	35.6	43.8	16.3
1970	27.0	6.7	17.5	21.7	30.1	36.1	18.0
1971	22.4	4.1	14.7	19.6	25.6	32.0	24.7
1972	21.2	5.2	12.1	15.2	25.7	29.1	26.7
1973	18.8	7.5	15.1	7.6	24.0	27.7	25.3

Import Shares (imports/(imports + value of production - exports))

%	Manuf	Metal. min.	Non-met. min.	Chem.	Metal fabric.	Machin- ery	Office equip.
1965	13.0	18.8	10.5	14.9	3.2	23.4	38.2
1966	13.4	20.2	10.6	14.6	3.8	22.2	35.3
1967	13.2	20.0	10.4	15.6	4.0	20.9	32.7
1968	13.7	21.4	11.1	16.1	4.1	19.3	29.9
1969	14.6	21.6	11.1	17.5	4.9	17.3	29.0
1970	14.5	19.5	10.4	17.3	5.9	15.0	28.7
1971	15.4	19.1	10.1	18.8	7.1	15.1	30.7
1972	15.4	19.2	10.1	18.0	7.4	15.1	30.8
1973	15.6	19.2	10.7	19.4	7.4	14.4	29.0

	Electr. equip.	Transpt equip.	Food & drink	Textiles	Paper products	Rubber
1965	7.9	13.5	8.0	16.7	9.2	9.3
1966	8.8	15.3	7.9	18.0	9.4	10.3
1967	10.3	17.6	7.8	17.1	8.9	10.9
1968	10.7	17.7	7.9	18.5	9.4	11.2
1969	12.2	18.0	9.3	20.9	10.0	11.9
1970	13.7	19.7	9.7	21.1	9.7	12.8
1971	13.9	23.0	11.0	24.1	9.5	13.6
1972	14.1	22.2	10.3	26.5	9.5	13.8
1973	15.3	20.3	10.1	28.9	9.7	13.7

Export Shares (exports/value of production)

	Manuf	Metal. min.	Non-met. min.	Chem.	Metal fabric.	Machin- ery	Office equip.
%							
1965	16.9	14.7	8.4	27.8	10.1	37.8	56.7
1966	18.7	17.9	9.2	29.5	11.9	41.9	52.5
1967	20.5	20.3	10.5	31.8	14.2	48.2	47.6
1968	20.2	17.9	11.1	30.2	14.3	45.9	45.5
1969	20.0	16.0	11.8	30.1	14.8	41.6	43.4
1970	19.1	14.6	10.9	29.1	14.3	38.8	38.7
1971	20.2	15.9	10.1	30.5	16.3	39.8	38.7
1972	20.3	15.7	9.6	29.9	15.4	14.6	40.9
1973	22.0	18.2	10.8	32.6	15.2	43.9	40.3
	Electr. equip.	Transpt equip.	Food & drink	Textiles	Paper products	Rubber	
1965	20.5	39.5	2.4	10.0	4.4	13.6	
1966	22.5	39.7	2.6	11.1	5.1	15.9	
1967	26.7	42.2	2.9	12.7	5.8	18.9	
1968	25.0	44.8	3.2	13.1	6.0	18.2	
1969	25.1	42.4	3.5	14.2	6.5	18.3	
1970	24.7	37.9	3.8	13.7	6.6	18.0	
1971	25.2	40.2	4.5	15.4	7.0	19.2	
1972	25.2	40.8	4.4	16.0	7.3	19.6	
1973	26.9	42.3	5.1	19.6	7.9	21.0	

3. Illustrative Example of Divergence between Accounting and Internal Rate of Return

In this example, a project is considered where quasi-rents fall to zero over its life. The capital good has a fixed gross output of 100 over its entire life but the quasi-rents of 50 in the first year are reduced each year because of technical progress at 3.5% p.a. which increases the wage bill by this amount each year. Over a life of 20 years, gross quasi-rents are reduced to zero. If the initial cost of the project is 200, the internal rate of return is 19.9%.

Table 4A.3 shows the annual series for gross profits (quasi-rents), net accounting profits (using straight-line depreciation), and the net accounting capital stock. The fourth column shows the average net accounting rate of profit each period which becomes negative at the end of the project. The fifth and sixth columns show respectively net accounting profits discounted at the internal rate of return, and the net capital stock discounted at the internal rate of return. The sum of the undiscounted net profits divided by the undiscounted net capital stock gives an accounting rate of return of 18.2%, the average of the annual undiscounted accounting rates of return is 11.2%, whilst the sum of the discounted net profits divided by the discounted net capital stock gives a rate of return of 19.9%, equal to the internal rate of return.

Table 4A.3
Accounting and internal rates of return: A numerical example

Period	Gross profits	Net a/c profits	Net a/c cap. stk	Ave a/c r.of ret. (%)	Discounted net profits	Discounted net cap.stk
1	50.0	40.0	200	20.0	32.8	163.9
2	48.2	38.2	190	20.1	25.7	127.6
3	46.4	36.4	180	20.2	20.0	99.1
4	44.5	34.5	170	20.3	15.6	76.7
5	42.6	32.6	160	20.4	12.0	59.2
6	40.5	30.5	150	20.4	9.3	45.4
7	38.4	28.4	140	20.3	7.1	34.8
8	36.3	26.3	130	20.2	5.3	26.5
9	34.0	24.0	120	20.0	4.0	20.0
10	31.7	21.7	110	19.7	3.0	15.0
11	29.3	19.3	100	19.3	2.2	11.2
12	26.8	16.8	90	18.7	1.5	8.3
13	24.2	14.2	80	17.8	1.1	6.0
14	21.5	11.5	70	16.5	0.7	4.3
15	18.8	8.8	60	14.6	0.4	3.0
16	15.9	5.9	50	11.8	0.2	2.1
17	13.0	3.0	40	7.4	0.1	1.4
18	9.9	-0.1	30	-0.4	0.0	0.8
19	6.7	-3.3	20	-16.5	-0.1	0.5
20	3.4	-6.6	10	-65.9	-0.1	0.2

Rates of Return:
Internal rate of return: 19.9%
Average of annual accounting rates of return: 11.2%
Sum of a/c profits / sum of a/c net capital stock: 18.2%
Sum of disc. profits / sum of disc. net capital stock: 19.9%

Chapter Five

Economic Reconstruction and the Foundations of Postwar Profitability and Growth, 1945-55

1. Introduction

The end of the war in 1945 saw Germany burdened with military, political and economic collapse. But the chaos evident in the economy belied an underlying strength in the industrial base. Contrary to the Detmold Memorandum of November 1945 which stated that the "productive apparatus has almost reverted to that at the beginning of the industrialization of Germany"¹, it will be argued that both the physical and the human capital stock in the western zones was greater and of higher quality in 1945 than in 1939. Skilled labour was in abundance. In terms of physical prerequisites for production, the elements missing were of a highly visible but short-term nature: transport, raw materials and food were bottlenecks at one time or another.

Temporary shortages on the supply side, were not the only brakes on the recovery of the economy. The policies and practices of the occupying powers and the discrediting and demoralization of German business combined to prevent either a planned rebuilding of the economy or a propitious environment for private enterprise to reconstruct a market economy. The stalemate had to be broken to give a direction and dynamism to the process of reconstruction. It was only with the currency reform and the associated measures of price liberalization in

¹ Werner Abelshauser, Wirtschaft in Westdeutschland: 1945-1948, (Stuttgart, Deutsche Verlags-Anstalt, 1975), p.116.

mid 1948 that the nature of economic activity changed and sustainable growth was possible. The currency reform registered the cumulative effect of a series of events in the western zones which added up to a decisive shift from an economy in limbo to one in which market relations were reconfirmed.

The focus of this chapter is on the process by which the adequate supplies of capital and labour were combined with growing clarity over the political, economic and geographical shape of the country to provide the preconditions for rapid growth. The preconditions for rapid growth were crystallized in a very high rate of profit. Germany was then poised to take full advantage of the Korean boom which launched the economy on a path of rapid and successful growth in the early nineteen fifties. To begin, a brief assessment is made of the factors of production in the western zones at the end of the war and changes in them between 1945 and 1948 - most importantly, the inflow of labour, reparations and the forced dismantling of capital stock. Attention then turns to the institutional pre-conditions for growth. Damage here was much greater than to the physical productive base. There was great uncertainty about the economic and political future of Germany. What level of industrial activity was foreseen by the Allied Powers? Was Germany to be divided into several states? Was the economy to be a market economy or were large parts of industry to be socialized?

These uncertainties were gradually dispelled in the three years after the collapse but their presence blocked the

emergence of a coherent set of economic incentives such as is necessary for sustainable growth. To examine how the economy actually operated between 1945 and 1948 in the face of these uncertainties when neither prices nor planning were effective allocative mechanisms, use is made of Kornai's¹ concept of "vegetative" control. Large parts of the economy were characterized by quantity rather than price adjustments to changes in economic conditions. Allocation occurred through some combination of administrative rationing, queuing by consumers, barter and the black market.

It became clear through 1947 and early 1948 that the western zones of Germany were to form a political unit in the American sphere of influence. For the mechanisms of vegetative control to be supplanted by economic growth in a basically free enterprise economic framework, however, a fully functional currency and a "satisfactory" level of profitability were required. The currency reform and the associated measures of decontrol of prices played a key role in establishing this framework but were not immediately successful. Generalized deflationary measures were introduced in 1949 to contain the open inflation, labour unrest and collusive practices of business which were threatening the successful reestablishment of a market economy. The success of these measures ensured the restoration of high profitability and placed the West German economy in an ideal position in 1950-51 to take advantage of the Korean boom.

1 Janos Kornai, The Economics of Shortage, Volumes A and B, (Amsterdam, North Holland, 1980).

2. Physical Preconditions for Production

2.1 Capital

The size of the gross capital stock at the end of the war relative to its size in 1938 was the outcome both of the level of investment during the course of the war and of the extent to which the capital stock had been destroyed in the war. The net effect of these factors was a growth of the capital stock in the western zones from 1938 to 1945 of 14%.¹

There is no data for investment by industry during the war but if we assume that the capital/output ratio stayed fairly constant², then the growth of production by industry provides an indication of the relative growth of investment. Industries where output grew by more than 70% between 1936 and 1944 were heavy machinery, chemicals and fuel, and the electro-technical industry. German capacity in machine tools was sufficiently high to permit exports of machine tools to occupied Europe³. Real gross investment peaked in 1942 at a level nearly two and a half times the level in 1936, a year of approximately full capacity utilization and before the shift of the economy to a war footing⁴.

1 Rolf Krengel, Anlagevermögen, Produktion und Beschäftigung der Industrie im Gebiet der Bundesrepublik Deutschland von 1924-56, (Berlin, DIW, 1958), p.94.

2 Given the fact that the one shift system was maintained during the war, this does not seem unreasonable. (N. Kaldor, "The German war economy", REStud, XIII, 2 (1945/46), p.35.)

3 UNECE, Economic Survey of Europe Since the War: A Reappraisal of Problems and Prospects, (Geneva, U.N., 1953), p.3.

4 Krengel, Anlagevermögen, 1958, p.98.

In addition, the conditions of war provided opportunities in Germany for the introduction of new technology, especially in the application of mass production techniques. This shift in technology was aided by reductions in the specialization of product ranges during the war. Kaldor reports spectacular increases in productivity in the vehicle industry due to the standardization of types where, by reducing the number of types of lorry from 76 to 9. "output per manhour, over the industry as a whole, was more than doubled (in certain cases more than trebled) despite the fact that the proportion of skilled workmen in the total labour force was cut in half."¹

Turning to the second determinant of the post war capital stock - namely war damage - we find a broad spectrum of estimates. The most extreme is the one from the Detmold Memorandum quoted earlier, calculating damage so great as to return the capital stock to its pre-industrialization level. Recent historical research suggests that the findings of the U.S. Strategic Bombing Survey are the most reliable and shows that the collapse of the economy was due entirely to the paralysis of the transport system.² The Strategic Bombing Survey estimated that not more than 6 1/2% of all machine tools were destroyed or damaged (and most were currently repaired). Even in the vital ball bearing industry only 16% of all machine tools were destroyed. Krenzel estimates war damage for 1943 (the first year of the bombing war) at 2% of the 1942 gross capital stock; in 1944 at 10% and for the first

1 Kaldor, REStud, 1945/46, p.51.

2 Abelshauser, Wirtschaft in Westdeutschland, 1975, p.117.

four months of 1945 at 7.5% of the respective previous years' capital stock.¹ This adds up to a reduction of the capital stock by 23% as compared with its 1939 level, a loss as noted above more than compensated for by the new investment carried out during the war.

The conclusion to be drawn is that the industrial capital stock in the western zones of Germany was considerably larger and probably at a higher technical level in 1945 than it was before the war. To complete the picture it is necessary to examine the changes to the capital stock through investment and reparations that occurred in the years after the end of hostilities in 1945. With a low level of capacity utilization and for institutional reasons discussed below went a low level of investment. Gross investment was less than depreciation in each year from 1945 to 1948, much of it being repairs carried out by workers in their own plants, the so-called "self-installed plant". The inclusion of plant lost through reparations and dismantling (which amounted to much less than originally proposed) meant a fall in the gross capital stock between 1945 and 1948 of just under 7%.²

On balance, although war damage and dismantling may have resulted in specific shortages of industrial capacity, it seems that the quantity and quality of investment during the early years of the war was more than sufficient to offset the losses, leaving the gross capital stock through the 1945 to 1948 period just larger than it was before the war (1939) with

1 Krengel, Anlagevermögen, 1958, p.76.

2 *ibid.*, 1958, p.94.

a more favourable age structure and technically more advanced.

2.2 Labour

The population of the three western zones increased by over five million or 13% between 1939 and 1946.¹ The movement of people in and out of Germany in the immediate post war years was massive. There was the emigration of some of the 7 1/2 million foreign workers who had been brought to Germany during the war² and the immigration of six million refugees and expellees to the British and American zones alone between mid 1945 and 1946.³ Well over 100% of the increase in population in western Germany was attributable to net migration.

The registered labour force fell by 12.9% between 1939 and 1946, but this reflected reduced participation rates - from 81.2% to 65.9%⁴ - and disguised unemployment in a situation of extreme economic dislocation. Bearing in mind the fall in the male working population, the effective labour supply was probably little changed.

1 W. Bauer, "Der allgemeine wirtschaftliche Charakter der Zonen", in DIW (Hrsg.), Wirtschaftsprobleme der Besatzungszonen, (Berlin, DIW, 1948), p.11.

2 UNECE, Economic Survey of Europe since the War, 1953, p.2.

3 K. Häuser, "The partition of Germany", in Wolfgang Stolper, et. al., The German Economy 1870 to the Present, (London, Weidenfeld and Nicolson, 1967).

4 Abelshauser, Wirtschaft in Westdeutschland, 1975, Tables 19, 22, pp.103,109.

This was also true of its quality. If anything, it is likely that the "sum of knowledge and experience was higher in 1946 than in 1939".¹ Abelshauser supports this view by pointing for example to efforts during the war to increase the qualifications of labour through accelerated training of those who went from other sectors of the economy into industry as a consequence of recruitment for the armed forces.

However, a short-run problem immediately after the war, was the considerable mismatch between potential workers and jobs, because of the direction of inflow of refugees and expellees, the uneven destruction of dwellings by area and the general disorganization prevalent in the country. The locational maldistribution of the population is reflected in the unemployment and vacancy figures. In June 1946, there were 329 thousand registered unemployed and 369 thousand registered vacancies.² By way of contrast with the capital stock, between 1946 and 1948 the changes in the potential labour supply were all in a favourable direction. The inflow of labour continued and reallocation occurred between the regions.

2.3 Materials, food and transport

Also necessary to production are raw material inputs to the industrial sector including food, and transportation. A vivid example of the interdependencies affecting production

1 *ibid.*, p.105.

2 C. Arnold, "Arbeitsmarkt in den Besatzungszonen", in DIW, (Hrsg.), Wirtschaftsprobleme der Besatzungszonen, (Berlin, DIW, 1948), p.53.

refers to the low production of coal because of a lack of wood to shore up the coal mines. But the foresters refused to work in the rain because they lacked clothes or shoes, which in turn were in short supply in part because of low coal supplies to consumer goods industries.¹

The materials most frequently cited in accounts of the constraints on production are food, coal and iron and steel. There seems little doubt that the limited level of food supply reduced productivity in the postwar years. Over an extended period, food deprivation is directly correlated with reduced labour output:

[S]ome areas reported urban consumer rations to be as low as 700 calories per day, a ration "decidedly below the minimum necessary to health and muscular activity essential to productive labour".²

Despite a flourishing black market in food, it is unlikely that any but a tiny minority benefited from such supplements to the rations. Clay, the Military Governor of the U.S. zone, suggested that on average supplementary food, including that from the black market did not exceed 200 calories per person per day.³

It is not difficult to point to the reasons for the shortage of food. First of all, the increase in population

1 Abelshauser, Wirtschaft in Westdeutschland, 1975, p.130.

2 John Gimbel, The American Occupation of Germany, (Stanford, Stanford University Press, 1968), p.35.

3 Lucius D. Clay, Decision in Germany, (London, Heinemann, 1950), p.266.

reduced the potential feeding capacity¹ of the agricultural areas of the western zones. Secondly, there was a chronic shortage of fertilizer as a result both of the zonal division which prevented the movement of raw materials to processing plants and of the embargo on the production of chemical fertilizers for military reasons. Actual production in the British zone was about two thirds of the prewar level.²

A solution to the problem of adequate supplies of food was conditional on a change in the policies of the military occupation to permit increased production of manufactures so that exports could rise and thus generate the foreign exchange with which to purchase imports. A necessary implication of the economic separation of the western zones (from the food surplus Soviet zone and eastern territories) was a new pattern of trade involving new and larger export markets to support the volume of food and raw materials imports necessary for a level of activity comparable to that before the war.

Coal production was actively supported by the military authorities because of the needs of the rest of European industry for coal. Coal production rose rapidly from mid 1945 with only a seasonal fall in the winter of 1945/46 and a second downturn in spring 1947 due to the food crisis on the

1 The number of standardized hectares per 100 inhabitants fell by nearly 20% in the American zone, 13% in the British zone, and by 4% in the French between 1938 and 1946. (Bauer, "Der allgemeine wirtschaftliche Charakter der Zonen", 1948, p.12)

2 Abelshauser, Wirtschaft in Westdeutschland, 1975, Table 34, p.135.

Ruhr.¹ Yet coal output had only risen to one half of the 1936 level by 1947. Unlike coal, the iron and steel industry was at the heart of the original plans of the Allies to demilitarize and deindustrialize Germany. The direct cause of the low level of production was a lack of raw materials as a result of the anti-steel policy. Imports of iron ore were forbidden and although there was an abundant supply of scrap, it was not available to the steel industry. Finally, coal was generally unavailable to large users like the iron and steel industry.

The dislocation of economic activity caused by the destruction of the transport system was considerable. The bombing campaign from September 1944 had little effect on the industrial capital stock but its strategic success lay in isolating the Ruhr from the rest of Germany through the total paralysis of the transport network.² Railways carried 2/3 of pre-war goods traffic and were put completely out of action. For example, in the U.K. zone in May 1945, of 13,000 km of track, only 1,000 were open; there was not a single permanent bridge left over the Rhine; and all waterways were blocked by wreckage.³ Over 60% of locomotives were not functioning and a third of the rest of the rolling stock was damaged.

Although the destruction of the transport system paralyzed the economy, it was repaired remarkably fast. For instance, by the end of June 1946, 93% of railway tracks and

1 *ibid.*, Table 36, p.139.

2 *ibid.*, Table 48, p.152.

3 *ibid.*, p.152.

800 bridges were open, including two Rhine bridges. At a superficial level, transport was not a binding constraint on economic activity by the summer of 1946. However, serious weaknesses in rolling stock emerged in the winter of 1946/47 when additional strain was put on the railways because of the severe weather conditions which left canals and waterways frozen. In January 1947, only 65% of demands for transporting food, coal and other products could be met. It was the vulnerability of the transport system which meant that despite the priority assigned to coal production, coal supplies constrained output in other sectors until mid-1947.

In response to the crisis, the military authorities directed all efforts to the improvement of transport and by August 1947, the situation was improving. In January 1948, the rail network, rolling stock and waterways were in a satisfactory state - no longer a constraint on the growth of economic activity.¹

To summarize, from the evidence available it seems that the capital stock and the labour supply were at least at the pre-war level but the economy was hampered by short-run bottlenecks, regional dislocation and restrictions on international trade. To identify the reasons for the persistence of bottlenecks and shortages it is necessary to move beyond the level of physical inputs and outputs to the uncertainties which dominated economic activity in the first years after the collapse.

1 *ibid.*, pp.155-6.

3. Institutional Preconditions for Economic Growth

There was no grand plan in 1945 on the part of the Allies for the future of Germany as a political or economic entity. Apart from democratization, what was to be done to Germany was expressed entirely in negative terms - disarm, deindustrialize, denazify, dismember, deconcentrate, decartelize. It was through the cumulative effect of a series of decisions by the U.S. between 1945 and 1947, that it became clear that the economy in Western Germany was to be rehabilitated along free-enterprise lines. Yet initially, the question of the type of economic organization was an open one; political parties in the western zones including elements of the Christian Democrats called for a new socialist ordering of society.

Major uncertainty related to the level of industrial activity that was foreseen for Germany. At the Potsdam Conference in mid-1945, it was decided that the German economy should be capable of supporting a standard of living not higher than the European average. This formula implied German living standards at Great Depression level. Whatever industrial capacity was not deemed necessary to this standard of living was to be available for reparations, i.e. to be dismantled and removed from Germany. A radical restructuring of the sectoral pattern of German industry away from its heavy industrial base was envisaged. However, such deindustrialization never occurred (at least in the western zones) because of differences of view between and within the Allied powers.

A major issue of economic policy concerned the establish-

ment of a central economic administration in Germany. Faced with the day-to-day administration of the American zone, General Clay was aware both that the U.S. zone alone could never be self-supporting and that a unified economic programme for the revival of industrial production so as to produce exports was necessary to prevent starvation. Otherwise U.S. aid in one form or another would be a permanent requirement. Clay stated in May 1946:

If agreement cannot be obtained along these broad lines in the immediate future, we face a deteriorating German economy which will create a political unrest favourable to the development of communism in Germany and a deterrent to democratization.¹

An impasse between the four powers was reached in mid-1946. Failure to agree led Bevin to state that the British zone intended going it alone with rebuilding industry to generate export income and reduce the economic burden on Britain. The aim was to make the British zone self-supporting. The Americans were concerned with Britain's unilateral action, partly because they feared the British would move to socialize the Ruhr industries.

Concern about the Ruhr, the continued failure to get four power agreement, along with the obvious economic complementarity of the two zones and British worries about the cost of the Occupation, led to the merger for economic purposes of the British and American zones and the commitment to reviving German industry. The United Economic Area, commonly called "Bizonia", was formed at the beginning

¹ Daniel Yergin, Shattered Peace: the Origins of the Cold War and the National Security State, (Harmondsworth, Penguin, 1980), p.229.

of 1947.

In March 1947, with the open opposition of the United States to the Soviet Union expressed in the "Truman Doctrine", the way was opened for the extension of the bizon to include the French zone. The French were brought in by linking the Coal for Europe Plan¹ (which implied a strengthening of German industry so as to provide increased coal exports) with longer run plans for European recovery financed by a continuation of U.S. aid. Bit by bit, the "Marshall Plan" emerged along with conditions relating to private enterprise and free trade which made Soviet participation unthinkable.² The western zones of Germany were included as an economic unit in the plan and steps were taken early in 1948 toward the political unification of western Germany.

3.1 The occupation authorities

There was a sharp difference between the British and American authorities toward the administration of their zones. The Americans eschewed all forms of planning and centralized administration in their own zone. There was only loose coordination of the production and distribution of raw materials: "To an even greater extent than in the north German occupation zone [British zone], a functioning control system

1 Alan S. Milward, The Reconstruction of Western Europe 1945-1951, (London, Methuen, 1984), pp.74-6, 88-9.

2 John Gimbel, The Origins of the Marshall Plan, (Stanford, Stanford University Press), 1976, p.269.

was lacking".¹ The British, on the other hand, moved towards reinstating central planning of production and administered their zone in a much more centralized way. Indeed Germans working in the administration of British occupation policy had "the feeling that England expected a completely planned economy"². The plans were ambitious, purporting to provide a plan for total production and distribution, but were not accorded sufficient authority by the British, with the result that industrial production functioned largely outside effective controls.³ Nevertheless some success was achieved in restarting the basic industries.

Initially, the British had plans to socialize much of Ruhr industry. By the autumn of 1946, they had introduced a system of codetermination into the 25 newly founded Ruhr enterprises: the supervisory boards comprised 56 representatives of the old concerns, 43 DGB (German trade union federation) and IG Metall representatives and 44 public officials.⁴ The British Military Governor, Sir Brian Robertson said in August 1946 "that it is the view of his Majesty's government to promote a socialized economy".⁵ The parallel statement by the US was contained in JCS 1779 (July

1 Gerold Ambrosius, "Marktwirtschaft oder Planwirtschaft", Vierteljahresschrift für Sozial und Wirtschaftsgeschichte, 66, 1 (1979), p.78.

2 Abelshauser, Wirtschaft in Westdeutschland, 1975, p.76.

3 Ambrosius, VfS, 1979, p.76-7.

4 Wolfgang Rudzio, "Die ausgebliebene Sozialisierung an Rhein und Ruhr", Archiv für Sozialgeschichte, XVIII (1978), p.4.

5 *ibid.*, p.4.

1947), which stated that it was the duty of the Military Government to demonstrate the principles and advantages of a free enterprise economy to the Germans.¹ However, it is important to note that there was no clear conception in the British Labour Government of a "labour-socialism" for Germany - the Labour Government was preoccupied with other matters.² British concern was primarily with the cost of the Occupation and the U.S. became the dominant western power after the formation of the Bizone.

3.2 Political parties

The most striking aspect of the economic policies of the political parties in Germany in 1945 was that even the so-called bourgeois party, the Christian Democrats, advocated a new socialist ordering of society.³ The 1945 programme of the CDU-CSU (Christian Democratic Union-Christian Social Union) called for state ownership of natural resources and key monopoly industries and the elimination of large scale capitalist enterprises. Although the political activists were overwhelmingly in favour of socialist measures of some kind in the initial period of occupation, the mood amongst the general

1 Ambrosius, VfS, 1979, p.79.

2 Rudzio, Archiv für Sozialgeschichte, 1978, p.5, and J. May, and W. Paterson, "Die Deutschland Konzeption der britischen Labour Party 1945-1949", in Claus Scharf und Hans-Jürgen Schröder, (Hrsg.), Politische und Ökonomische Stabilisierung Westdeutschlands 1945-1949, (Wiesbaden, Frank Steiner Verlag, 1977), pp.78-92.

3 W.D. Graf, The German Left Since 1945, (Cambridge, Oleander Press, 1976), p.22.

population was one of apathy toward political affairs.¹

It is possible to chart the rightward shift in the centre of gravity of political opinion by noting the decisions of the Länder parliaments and subsequently of the Bizonal Economic council on the questions of socialization of industry and codetermination. In 1946, the Land Hesse (U.S. zone) passed an article on the socialization of industry in its constitution which was subsequently confirmed in a referendum but never implemented.² After elections for the first state parliaments in the British zone, "some form of socialization seemed inevitable in every one of the zone Länder".³ In the crucial Land of North Rhine Westphalia, which covers the Ruhr, the incoming minister-president Karl Arnold, a Christian Democrat, called for a new economic order which would include a Gemeinwirtschaft⁴ in the key coal, steel, iron and chemicals sectors managed by business professionals with the participation of the government, the unions and cooperatives.⁵ Socialization articles were proposed for North Rhine Westphalia. But the British did not confirm them as they were already committed by the Washington Coal Conference of 1947 to a five year postponement of the question of property rights on

1 *ibid.*, note 13, p.38.

2 For details of this see Gerd Winter, "Sozialisierung in Hessen 1946-1955", Kritische Justiz, 7 (1974), 157-175.

3 Gimbel, Origins of the Marshall Plan, 1976, p.205.

4 Gemeinwirtschaft connotes the subordination of the profit objective to other economic and/or social-political objectives.

5 Gimbel, Origins of the Marshall Plan, 1976, p.205.

the Ruhr.

Laws seeking the right of codetermination at all levels of economic decision-making for unions and works councils were passed in several Länder with CDU/CSU assent up to the spring of 1948 but were frequently suspended by the Allies.¹ Economic policy-making in Bizonia was in the hands of the Bizonal Economic Council from June 1947 where no party had a clear majority. When its demands for the key portfolios of economics and finance were refused by the Christian Democrats, the SPD (Social Democratic Party) chose to remain in opposition (presumably on the assumption that they would govern in their own right in the near future). This decision by the SPD was crucial because it had the effect of strengthening the forces within the CDU/CSU which sought to replace the broad "reconstruction" coalition with the SPD by a non-socialist coalition of CDU/CSU with the FDP (Free Democratic Party) and other liberal parties.²

Although a Christian-socialist strand remained in the CDU and was still represented in the party's famous Ahlen Programme of February 1947, the vision of a "third way" between a private enterprise and a planned economy which the Christian socialists promoted was rejected by the Americans as well as by CDU leader Adenauer. Adenauer sought to make the

1 T. Balogh, "Germany: an experiment in planning by the "free" price mechanism", BNLQR, 3, (1950), p.75; Eberhard Schmidt, Die verhinderte Neuordnung 1945-1952, (Köln, Europäische Verlagsanstalt, 1970), pp.162-5.

2 Jürgen Domes, and Michael Wolffsohn, "Setting the course for the FRG: Major policy decisions in the Bizonal Economic Council and party images 1947-49", ZgS, 135, 3 (1979), p.337.

CDU/CSU a bourgeois peoples party and the shortcomings of rationing and "planning" in the winter of 1946/47 helped push the Christian socialists on the defensive. The CDU/CSU went into the first federal elections in 1949 with an imprecise formula based on the idea of a "social market economy" and private initiative.

3.3 Organized labour

On the German collapse there were the first signs of union activity after twelve years of prohibition. The basis of union strength was in the factories where the centres of organization were the works councils, many of which had existed illegally throughout the Third Reich. According to a British government report:

Directly after the collapse of Germany in 1945, self-appointed groups of people in most cases not representative of the workers acted as "Works Councils" and attempted in some cases to take control of the firms.¹

Despite the local strength of works councils, and in contrast to 1918, a radical factory-based movement did not develop. The works councils were engaged entirely in day-to-day tasks. As a result, such organized labour movement activity above a very local level as took place was in the hands of the unions.

Although union organization was poorly developed, plans for a new economic order based on the blue-prints of underground and emigre groups during the war, were produced. The hallmark of the union programme was state planning of the

1 HMSO, Overseas Economic Surveys: The Federal Republic of Germany: Economic and Commercial Conditions in the Federal Republic of Germany, (London, HMSO, 1955), p.11.

economy combined with union and works' representatives participating in the running of large firms. The key industries of mining, iron and steel, chemicals and banking would be taken into public ownership. However, any unified pursuit of these aims had to wait until the military government approved an organizational structure. Agreement on independent industrial unions with an umbrella organization was reached in late 1946 and the DGB (Deutscher Gewerkschaftsbund, the trade union federation) was set up in the British zone in April 1947.¹

In late 1946, the union leadership under Hans Böckler (first chairman of the DGB and prominent unionist in the Weimar period) asked for clarification from the military government as to what type of economy was to prevail so that the unions would know whether they were an oppositional or cooperative "partner-in -government" institution.² Despite the fact that works councils had often taken quite radical steps in the immediate post-collapse months, the emergent trade union leadership did not take up an oppositional stance but sought rather to gain as many concessions as possible from the military authorities on the basis of common interests. The increasing dominance of the U.S. in the occupation as well as the formation of the Bizone pushed the DGB in this direction.

The proposal for the inclusion of the western parts of Germany in the Marshall Plan marked a watershed for the union movement since cooperation with the Marshall Plan implied

1 Graf, The German Left, 1976, p.28.

2 Schmidt, Die verhinderte Neuordnung, 1970, p.134.

acceptance of the division of Germany and the incorporation of Bizonia in the western sphere. The unions reacted by accepting the advantages of the European Recovery Programme (ERP) whilst verbally opposing the negative consequences. As Graf points out:

The DGB Federal Executive Committee saw correctly that Marshall credits were conditional upon the abandonment or postponement of trade union plans for the socialization of key industries in the western zones.¹

From the first days after the collapse when works councils were often in control of factories there was steady decline in the relative importance of the organized labour movement. The unions were marginalized from crucial economic and political decisions: they had minimal influence on the important Bizonal Economic Council and had virtually no say in the 1948 currency reform.

3.4 Business

The Allied agreements dictated that much of the business leadership was to be permanently removed from positions of economic and political power. However, the programme of denazification was down-graded with the decision to put the matter into the hands of the Länder in early 1946. The reversal in the U.S. position on denazification is summarized by Gimbel from the documents of U.S. military government meetings in March 1948:

Denazification, which OMGUS [Office of the U.S. Military Government in Germany] had always pressed as a precondition to economic recovery, was now supposed to come to a speedy conclusion as a precondition to economic

1 Graf, The German Left, 1976, p.59.

recovery.¹

The policies directed more specifically to a purge of the industrial elite and to a break up of private economic power were those of deconcentration and decartellization. The fact that little of a lasting nature was achieved does not nullify the effect that these commitments had in compounding uncertainty and despondency about business prospects in the first couple of years after the collapse. The initial proposals of the Americans were for the breaking up of any enterprise employing more than 3,000 persons or covering more than 25% of the production in any field.²

Despite the initial anti-business policies of the occupation, leading members of the occupation took the view that the German industrial leaders were not Nazis but businessmen.³ American businessmen stressed the need for reestablishing the economy on free enterprise tracks and exerted pressure to make this a condition of American aid.⁴ Clay reflected this pressure when he argued that support for British plans to nationalize the coal industry:

would not be acceptable to the American businessmen and bankers on whom we must depend in the final analysis for the success, not only of our export program, but for

1 Gimbel, The American Occupation of Germany, 1968, p.172.

2 H. Zink, The United States in Germany 1944-1955. (Princeton, Van Nostrand, 1957), p.265.

3 Schmidt, Die verhinderte Neuordnung, 1970, p.55.

4 Werner Link, Deutsche und amerikanische Gewerkschaften und Geschäftsleute 1945-1975. (Düsseldorf, Droste Verlag, 1978), pp.101-121, Schmidt, Die verhinderte Neuordnung, 1970, pp.55-6.

subsequent financing to enlarge the export program.¹

The gradual reemergence of the employers' associations was an important measure of the growing confidence of business. The main organizations (the BDI - the Federation of German Industry, and the BDA, the Federation of German Employers' Associations) had been very efficient in organization, negotiation and publicity in defence of the interests of the business community. They played a central role in economic management in the Weimar Republic, under Hitler and again after 1949. Although initially reorganization lagged somewhat behind that of the unions, the business associations were organized on a supra-zonal level before the trade unions, with the formation of the BDI in 1948 and of the BDA in early 1949.²

From the policies of the Allied authorities toward planning, socialization and the business sector, the programmes of the political parties, legislation on key questions, the attitudes and actions of the major interest groups of organized labour and business, it is apparent that there was a shift in the balance of forces in favour of private enterprise in western Germany over the period 1945-1948. This shift occurred at the same time as the U.S. position on Germany firmed up with the inclusion of the

1 Quoted by Gimbel, Origins of the Marshall Plan, 1976, p.202.

2 HMSO, Economic and Commercial Conditions, 1955, 78. 280.

western zones in the Marshall Plan. It seems clear that although the physical resources available for production in the immediate post-war years were no worse than they were before the war, the scope for their full utilization was restricted by occupation policy and by the presence of the uncertainties outlined.

4. The Nature of Economic Activity, 1945-1948

4.1 Vegetative control of economic activity

Between 1945 and mid 1948 resource allocation in the western zones occurred through means of barter in a large part of the economy, an active black market, and military government direction in a few sectors. These mechanisms operated in the shadow of an edifice of controls inherited from the Nazi war economy and maintained by the military authorities. The military governments kept the bulk of the controls in place, including the general price and wage freeze introduced in 1936. As a result, relative prices remained virtually fixed for more than a decade and could play no role in reallocating resources in the economy.¹ But despite this apparent continuity, there was a significant change in economic life after the collapse because the degree of control exercised by the Nazis in operating the "command" economy was never equalled by the occupation² and shortages of food and consumer goods became much more serious.

1 Horst Mendershausen, "Prices, money and the distribution of goods in post-war Germany", AER, XXXIX (1949), pp.647-8.

2 Abelshauser, Wirtschaft in Westdeutschland, 1975, p.54.

The two new forms of economic activity that emerged during the occupation were a complicated form of barter referred to as bilateral exchange and the black market. In the former, goods generally changed hands at the official prices, and legal wages prevailed but as Mendershausen (who was the assistant chief of price control for the U.S. Military Government) put it "the legal prices and rates did not represent the essence of the bargain".¹ The role of money as a medium of exchange was restricted to the settlement of net balances in transactions in which barter was decisive. The Reichsmark had become useless as fully functional money, not because of the devaluation of the currency through open inflation, but because of the extreme shortage of goods available for purchase compared with the nominal purchasing power. In 1947, for example, currency in circulation in the four zones plus Berlin was estimated to be ten times the amount that circulated in 1936 when the price freeze was introduced, whereas real national income was put at roughly one half that of the Reich (1936).²

Bilateral exchange took several forms and represented the adaptation of producers and consumers to the prevailing conditions. Supplies were obtained through "compensation trade", "distributions in kind to workers" and through ordinary barter. Compensation trade refers to the typical form of exchange amongst industrial producers and wholesale traders in which a chain of barter deals was engaged in to

1 Mendershausen, AER, 1949. p.651.

2 *ibid.*, p.649.

secure raw materials for production. Although the compensation trade system was illegal and both costly and cumbersome, it acted to maintain a trading mechanism which prevented a complete breakdown of industrial activity in conditions of scarcity and trade prohibitions.

Bilateral exchange also dominated relations between employer and worker. The payment of the legally prescribed wage was insufficient to secure a regular supply of labour from employees. The reason for this was obvious - with part of a week's wages the allotted rations of food could be purchased. There was little else to do with one's earnings since savings were already high and black market prices were exorbitant in terms of earnings. For example, a miner working three shifts a week would earn enough to buy on the black market just a pound of butter and in the process become hungrier and wear out clothing which could not be replaced. It was more worthwhile to spend some of the time going to the countryside to try to barter food or work on an allotment to grow food.¹

To prevent or reduce absenteeism, employers provided payment in kind. They provided factory meals more substantial than warranted by the ration coupons handed in by the workers and also gave factory output to workers which they could barter directly with peasants for food. It seems from several estimates that in the British and American zones at least half

1 A.M. Stamp, "Germany without incentive", Lloyds Bank Review, 5 (1947), p.18; H.C. Wallich, Mainsprings of the German Revival, (New Haven, Yale University Press, 1955), p.65; H. User, "The partition of Germany", 1967, pp.204-7.

of commercial activity was transacted on a barter compensation basis.¹ The black market was of much less importance.

For employers or producers, the basic aim was to buy as much and sell as little as possible. The accumulation of physical assets - particularly stocks was the activity from which producers had most to gain.² An observer noted at the time that:

[t]he motives of the business man are to keep his business in being, to retain the goodwill of his customers and to maintain his stocks of raw materials in the hope that some day conditions may improve.³

Under the system of controlled prices and wages, in which legal prices were based on those determined in an unregulated price system in 1936, a cursory consideration of the level of unit costs in 1946 compared with 1936 makes it clear that firms would in many cases be unable to cover costs. The problem was exacerbated by the removal of numerous subsidies by the occupation authorities.⁴ It was only because profit margins were very high in 1936 and during the war that not more than an estimated 30-40% of German industry was making a loss in 1946.⁵

In view of the unpropitious conditions for production, it is perhaps surprising that output was as high as it was in the

1 F.H. Klopstock, "Monetary reform in Western Germany", JPE, 57,4 (1949), p.279; Stamp, LBR, 1947, p.23; Mendershausen, AER, 1949, p.655.

2 Wallich, Mainsprings, 1955, p.65.

3 Stamp, LBR, 1947, p.21.

4 *ibid.*

5 F. Burchardt, and K. Martin, "Western Germany and reconstruction", BOIS, 9, 12 (1947), p.411.

years immediately after the collapse (reaching 50% of the 1936 level by the last quarter of 1947). In the absence of either a coherent incentive structure for decentralized production or effective planning, the economy was described as "drifting without rudder or pilot".¹ A fruitful way of understanding the inertia in the economy which resulted in continued attendance at work and continued production albeit at a low level is provided by Kornai's concept of "vegetative" or "autonomous" control of economic activity.

The essence of the concept of vegetative control is that in a modern economy (i.e. characterized by a complex division of labour) there is a form of economic activity that operates independent of the political and ownership relations of the system. There are mechanisms based on decentralized quantity signals which control the "most simple, elementary, and trivial adjustment of real economic processes".² These are, for example, the increase in the purchase of inputs if production has increased; the increase in production if sales to other firms have increased, or if stocks of output have fallen. These simple behavioural rules are stronger when price signals have little or no influence.

Kornai argues that:

[a]utonomous function is based on the average diligence, conditioning, routine, identification with one's job of the people working within the system. Beyond that it also relies on the fact that, as in every material system, a certain inertia prevails also in economic

1 Häuser, "The partition of Germany", 1967, p.208.

2 Kornai, The Economics of Shortage, 1980, p.141.

systems.¹

As a result, there are very clear limitations on the type of economic activity to which vegetative control applies. It applies to low level repetition of production, the use of "rules of thumb" for standard decision-making, simple adaptation such as building up stocks to afford protection from the risk of shortage, and forced substitution to enable production to carry on even in the presence of shortage.² But higher forms of control dependent on the particular incentive or authority structure of the politico-economic system are required for decisions regarding fixed investment (other than maintenance and simple replacement), major technical developments, the release of new products and radical changes in the volume and pattern of production.³

The criteria for a vegetative control mechanism are fourfold:

- (i) in terms of organization, in contrast to the centralized hierarchy of directive control or decentralized organization resulting from the common activity of all buyers and sellers with price signals, vegetative control is organized exclusively between single pairs of buyer and seller.
- (ii) The information used is direct information on demand and supply possibilities (not instructions or prices).
- (iii) Rules of behaviour are simple responses to stock signals or to the information gained directly from sellers/buyers/ consumers (not fulfilment of instructions or responses to price signals).

1 Janos Kornai, Anti-Equilibrium: On Economic Systems Theory and the Tasks of Research, (Amsterdam, North Holland, 1971), p.178.

2 M. Cave, and P. Hare, Alternative Approaches to Economic Planning, (London, Macmillan, 1981), p.147.

3 Kornai, Anti-Equilibrium, 1971, p.181.

(iv) The motivation of the producers is identification with the survival of the firm (not an interest in the fulfilment of instructions or increasing profits).¹

The bilateral exchange economy in Germany described above would seem to be a rather pure form of vegetative control, existing in the presence of conflicting and confused elements of higher level controls of both directive and price types. Mendershausen's assessment of the situation in post-war Germany hints at the notion of vegetative control:

Where neither trading for money nor redistribution of goods by political authority, alone or in combination can ensure a reliable division of labor, bilateral exchange seems to be the safest line of economic retreat.²

It seems that vegetative control goes some way to providing an explanation for roughly the one half of the economic activity in the western zones of Germany which was neither directly controlled by the military governments nor produced for the black market, where an effective price mechanism was at work. Although this shifted the balance of transactions from "centre" to "periphery", the uncertainty and distorted incentives remained. Economic reconstruction was hampered until a medium of exchange was reestablished and rules decided by which commodities could be imported or exported. The better functioning of the vegetative mechanisms could provide a certain growth in production but such growth was strictly limited in the absence of coherent higher level controls.

1 Janos Kornai and Bela Martos, "Autonomous control of the economic system", Ecmet, XLI (1973), p.513.

2 Mendershausen, AER, 1949, pp. 657-8.

4.2 The limits to the growth of production.

The progress of production can be summarized by noting the rapid rise from a very low level immediately after the collapse to some two-fifths of 1936 industrial output by the third quarter of 1946. There was then an interruption to the growth of output in the winter of 1946/47 as weaknesses in transport were pushed to breaking point by an unusually harsh winter. It was not until well into 1947 that the previous peak output was reached. Production increased steadily with a clear acceleration after the monetary reform in mid 1948 (see Table 5.1).

The fact that the official series and accounts based on them greatly exaggerate the acceleration in growth after the currency reform by their failure to adjust for the under-reporting prior to the reform is not in dispute. But Abelshauser, in interpreting the revised output data, does not differentiate growth due to the easing of bottlenecks and the smoother functioning of the "vegetative" control mechanisms of the economy from a dynamic process of growth. The latter, as noted above, requires decision making of a higher order and presupposes a longer term view in which incentive structures have a certain stability.

Table 5.1

Indices of Production and Gross Investment, 1945-1949
industry (1936=100)

Year	<u>Industrial Output</u>			<u>Gross Investment</u>
	Official qtly	Estimated qtly	annual	annual

1945	III		14	
	IV		21	
1946	I		30	36
	II		34	
	III		40	
	IV		41	
1947	I	31	34	43
	II	40	44	
	III	42	46	
	IV	45	50	
1948	I	48	54	63
	II	50	57	
	III	65	65	
	IV	76	76	
1949			..	156

Sources: Production indices calculated from Abelshauser, Wirtschaft in Westdeutschland, 1975, Table 16, pp.80,57. Gross investment indices from Krengel, Anlagevermögen, 1958, p.94.

There was a qualitative change in the nature of the growth process, in mid 1948. The monetary reform and lifting of price controls created the climate for new investment and thus the basis for self-sustaining growth. As Table 5.1 shows, gross investment shot up in 1948 to a level just above the 1936 level. Indeed, net investment was negative until 1948.

4. Monetary Reform and Deflation 1948-1949

By 1948, there had been a progressive reduction in the level of uncertainty surrounding the West German economy. The

business sector was largely rehabilitated, the labour movement firmly in the hands of moderates, and the inclusion of the western zones as an entity in the Marshall Plan meant that U.S. aid would continue and that the U.S. was committed to full industrial recovery. On the political side, although it was unclear whether the CDU-CSU or the SPD would win the general election and form a government some years hence, the CDU-CSU had the initiative through their control of the Bizonal Economic Council.

The notion of an economy operating primarily through the very limited mechanisms of vegetative control highlights the key role of the monetary reform in enabling more complicated economic decision-making with a longer time horizon, notably investment, to occur. The importance of the abolition of price controls which occurred at the same time as the monetary reform was twofold: it released the short-term repressed inflation "equilibrium" which permitted an increase in the supply of labour and of output. Secondly, it fostered favourable expectations about the profitability of production. A repressed inflation equilibrium has been characterized in the fix-price temporary equilibrium literature as a situation of excess demand in both the goods and the labour market.

With nominal wages and prices fixed as they were in Germany, the level of the real wage in conjunction with the limited availability of goods acted to constrain the supply of labour. The constraint on the supply of labour meant in turn that the supply of goods was below what it would have been had

firms been able to hire as much labour as they wanted at the fixed real wage.¹ The German case displayed the additional feature of side-payments made in kind by firms to workers which induced a supply of labour greater than would have been the case in the pure repressed inflation situation. Once the price and wage controls were lifted to release the rationing of goods to consumers and of labour to firms, and given the existence of stocks of finished goods and raw materials, the supply of labour and of output increased rapidly; barter and side-payments in kind vanished.

The shape of the monetary reform, price decontrol and tax changes which were introduced into western Germany beginning on the 20th June 1948 was:

strongly influenced by the desire of both the U.S. Military Government and the majority parties in the German Bizonal Economic Administration to reestablish money incentives and the free market mechanism as the decisive determinants of economic life.²

In the short run, this was achieved with startling effectiveness through the allocation of cash to each person in two instalments (on a one-for-one basis against savings of up to 600 RM - savings above this amount were eventually exchanged in the ratio of approximately 6.5DM for 100RM), the repudiation of the German national debt and the provision of only 60DM per employee to employers for payroll purposes (60 DM was about the equivalent of the average weekly wage of an industrial worker).

1 E. Malinvaud, The Theory of Unemployment Reconsidered, (Oxford, Blackwell, 1977), pp.44-53,70-75.

2 Klopstock, JPE, 1949, p.281.

Because of their enforced illiquidity and with the incentive of higher prices and the availability of labour to raise production, businesses were induced to release their hoards of goods. And after the long years of commodity famine, exacerbated by speculative stock building in the months immediately before the currency reform, consumers spent their cash allocations freely on goods which had once more become available, literally overnight. Barter transactions disappeared, black market prices tumbled and absenteeism dropped dramatically. The timing of the monetary reform in mid-summer at the peak of agricultural production contributed to its short-run success. The Economist reported on the 3rd of July 1948 that:

[h]ousewives strolled down the streets gazing in astonishment at shopwindows - at shoes, leather handbags, tools, perambulators, bicycles, cherries in baskets, young carrots tied in neat bundles. In the early morning, farmers had been seen making their unaccustomed way into town with produce for sale, a little uncertain what were the legal channels for selling it.¹

On the third working day after the currency reform, the report went on, "manufacturers in Nuremberg said that absence from factories from all causes had fallen from 18 to 20 per cent to 2 or 3 per cent".

Profits from the sale of stocks were high as price controls on all manufactures and many other goods were withdrawn. But the profitability of current production held the key to any lasting success of the measures. In the second half of 1948, industrial productivity was 59% of the 1938 level, whilst real product wages (the measure relevant to the

1 The Economist, 3rd July, 1948, p.11.

profitability of production) were just higher at 64% of the 1938 level (see table 5.2). Given the very favourable situation for profits in 1938 it is clear that profits in 1948 were satisfactory. The fact that real materials costs were just below the pre-war level would have offset the slightly less favourable balance for profits between productivity and

Table 5.2

Real Wages, Product Wages and Productivity (Industry), 1948-52

(1938=100)

Year	Weekly earnings 1	Cost of living 2	Output prices 3	Input prices 4	Indust prod 5	Indust employment 6
1948	126	168	197	193	61	103
1949	141	166	191	204	75	108
1950	157	156	186	230	94	114
1951	177	168	221	284	113	124
1952	191	171	226	294	122	129
	Real wages 1/2	Prod wages 1/3	Productivity 5/6	Real input costs 4/3		
1948	75	64	59		98	
1949	85	74	69		107	
1950	101	84	82		124	
1951	105	80	91		129	
1952	112	85	95		113	

Sources: Bank deutscher Länder, Monthly Reports 1948-52 and Annual Reports 1948/9-1952. UNECE, Europe in 1948, (Geneva, U.N., 1949), Table 3, Economic Survey of Europe Since the War, 1953, Table I,II, Economic Survey of Europe, 1954, Tables I, II.

product wages. The currency reform had favoured firms in another way by reducing their debts in the ratio 10:1 whilst leaving the real value of their assets unchanged. Furthermore the taxation reform shifted the burden of tax from property

and profits to lower income groups.¹

As output rose, the volume of profits increased and along with the abolition of price controls generated favourable expectations and produced an investment boom.² As shown in table 5.1, fixed investment in 1948 was more than double the level of 1947 and the bulk of investment in 1948 occurred in the second half of the year. The source of the inflationary pressure which emerged in late 1948 as a threat to the monetary basis of the market economy lay in the failure of supply (both in quantity and composition) to keep up with the demand for goods. Consumption and investment demand remained high. With the boost to liquidity from the second instalment of blocked savings, and access to credit easy, there was a tendency towards building up stocks again as confidence in the value of monetary assets fell. Although production was rising fast, the initial process of destocking was over and imports were slow to come in to act as a deflationary factor.³

Businesses appeared to be taking advantage of the favourable demand conditions to rebuild their profit margins:

Dr Erhard's hope that the removal of price controls would permit a normal competitive price structure to be formed has been brought to nothing by the activities of the business people in whom he has put his confidence. Rather than face price competition, they have banded together to enforce "price discipline" - in other words, to insure that profits are not reduced by outsiders who cut production costs.⁴

1 W.W. Heller, "The role of fiscal-monetary policy in the German economic recovery", AER P&P, XL (1950), p.543.

2 For example Klopstock, JPE, 1949, p.287.

3 *ibid.*, p.288.

4 The Economist, 27th November, 1948, p.868.

The movement of the price indices shown in table 5.2 understates the actual rise in prices. The direction of the pressure on prices is clear from the fact that the price index for luxuries had risen to four times the 1938 level, clothing from 200 to 272 (1938=100), whilst the food index remained relatively low at about 160.¹ Confidence in money fell and hoarding, the black market and barter transactions reappeared at the end of 1948.²

There were two alternative courses of action open to the German authorities (in the Central Bank and on the Economic Council), faced on the one hand with the undermining through inflation of the monetary precondition for reconstruction, and on the other, with the threat of disruptive industrial action if real wages were kept down. The policy option favoured by the trade unions, the Social Democrats on the Economic Council and some elements of the occupation authorities was for the reintroduction of price controls and other physical controls over production and consumption to exert localized deflationary pressure on industry. The alternative policy was for a generalized deflation. The Central Bank decided on a sharp credit squeeze in November 1948 to be executed through an increase in legal reserve ratios for banks of 50% and an embargo on new credits. Their colleagues on the Bizonal Economic Authority concurred with the choice of general deflation.

1 Balogh, BNLQR, 1950, p.83.

2 Mendershausen, AER, 1949, p.667, Klopstock, JPE, 1949, p.289.

Because of the comfortable liquidity position of business, the restrictive credit measures took time to have an effect. However, against the usual seasonal pattern there was a sharp fall in the rate of growth of industrial production from 9.5% in the first quarter to 5.6% in the second. An additional deflationary element was the emergence of budget surpluses. Early in 1949, black market prices and prices in free markets for non-essential goods dropped considerably and there was a sharp fall in sales of semi-luxuries. With the addition of half a million unemployed in the first half of 1949, unemployment rose rapidly to a level of 1 1/4 million by June 1949 (6.6% of the total labour force, 9.3% of the wage and salary earning labour force).

Employment in industry actually fell (from 6.44 to 6.34 million) in the first half of 1949 despite the substantial increase in output. The German authorities emphasized the structural nature of the high unemployment but there is no doubt that a significant part (one half of total unemployment according to one estimate¹) was due to the deflationary measures. A survey by the Manpower Division of the U.S. military government concluded that to a considerable extent:

unemployment centers around a lack of purchasing power on the part of individual consumers, which makes it difficult or impossible for businessmen at all levels to sell their goods at the prices asked.²

Whilst Balogh attacks the deflationary policies pursued by the central banking and economic authorities on the basis

1 Heller, AER P&P, 1950, note 15, p.536.

2 Quoted by Heller, AER P&P, 1950. p.536.

that the leaders were pursuing obsolete monetary theories¹, it seems more fruitful to see the choice of policies as the attempt to impose a discipline on business and labour to establish once and for all "sound" money and high profits as the arbiters of economic life. The success of this policy is illustrated in a number of ways. If we consider first the disciplinary effect on business, deflation acted to increase the attention of firms to their costs. In the post reform period, firms were "banding together to prevent price cutting by competitors with lower costs" and along with easy access to credit, this "made a broad sector of the economy entirely immune to changes in costs".² Under the harsher climate of deflation, rationalization "involving reequipment, adoption of labour saving processes and machinery, and substitution of more for less efficient labor ... [was] going on apace, not only releasing labor, but inhibiting reabsorption of those released".³ Rationalization was also reported by the Bank deutscher Länder in its report on the situation in 1949 (see Table 5.2, especially columns 5 and 6).

The import dependence and loss of markets suffered by the new western Germany, as the result of the break-up of the highly complementary economic entity of the Reich was reflected in the fact that as late as 1949, one half of German imports were financed by Marshall Aid. This was obviously unsustainable and implied a requirement for strong exports and

1 Balogh, BNLQR, 1950, pp.84-86.

2 Klopstock, JPE, 1949, p.288.

3 Heller, AER P&P, 1950, p.534.

underlined the importance of avoiding inflationary tendencies at home. The slack in domestic demand not only served to curb price increases and wage demands but also exerted pressure on businessmen to seek foreign markets for their goods. As Wallich put it: "German businessmen, having so long been cut off from the outside world, would not willingly seek new markets abroad if selling was made easy for them at home".¹

With prices falling for well over a year, confidence in the currency was restored. The economic authorities, strengthened by the CDU/CSU win in the first election for the Bundestag in August 1949, resisted continued pressure from the social democratic opposition for the introduction of expansionary policies to utilize the economy's resources more fully.

6. Exports and Investment: The Sources of Growth, 1949-1955

The period from the monetary reform and deflation of 1948-49 to the achievement of full capacity utilization in 1955 was a critical one for the West German economy since it was in these years that a pattern of rapid and sustainable growth was established. The basis of growth was high profits and an undervalued exchange rate but the Korean War played a key role. During these years, per capita output and industrial productivity surpassed the pre-war level. Of great importance for sustained growth was the profitability of production and, as noted earlier, productivity and product wages were reestablished after the currency reform at such a

1 Wallich, Mainsprings, 1955, p.83.

level that profits were just lower than in 1938. By 1951 this had changed: with the continued strong growth of productivity and with output prices growing faster than nominal wages, a gap had opened up leaving profits markedly higher than they were in 1938. In the following year, as a result of a 13% fall in real materials costs, the net rate of profit increased still further to 24.8%. peaking in 1955 at 25.8%.

Given the favourable physical and institutional preconditions outlined above, a crucial element in the successful establishment of rapid growth was the orientation of the economy toward the production of exports. Through a combination of design and good fortune, exports provided the solution to nascent problems on both the demand and supply sides of the economy. The element of design came firstly from the administration's deliberate policy of keeping domestic demand below potential, and secondly from its foreign trade policy. Evidence of the first was provided by the deflation of 1949 and by the frequent subsequent recourse to restrictive monetary policy with the economy still well below potential output. Budget surpluses contributed to the restraint on domestic demand in the mid 1950's but it is unclear the extent to which this was deliberate.¹ The restraint on domestic demand encouraged firms to seek export markets. In their foreign trade policy, the German authorities sought to increase the competition faced by domestic firms from imports.

1 W. Stolper, and K. Roskamp, "Planning a free economy: Germany 1945-1960", ZgS, 135.3 (1979), p.399.

These policies were derided at the time both inside Germany (by the SPD and elements of the US and UK occupying authorities) and outside. Indeed, given the developments in 1949 and early 1950 which forced Erhard to undertake a modest employment promotion programme, it is far from clear that even steady growth would have been reestablished in Germany without the intervention of the boost to world aggregate demand provided by the Korean War rearmament.

The export boom which followed in West Germany meant that the strong bias in the factor distribution of income in favour of profits could be maintained without a consequent problem of inadequate demand. The high level of profitability provided much of the funds and in the context of buoyant demand, the incentive for investment which transformed an export-led upturn into sustainable growth. A second element of good fortune for the German economy lay in the coincidence of the structure of its industrial base with the structure of export demand. Germany's industrial strength since the early period of industrialization lay in the manufacture of capital goods and chemicals and it was in these areas of specialization that demand was highest in the 1950's. Whilst world trade in manufactures grew by one fifth between 1951 and 1955, trade in machinery and transport increased by one third, a greater increase than for any other commodity group.¹

Whilst in the simple Keynesian model, it is irrelevant in which sector the pump is primed, it seems clear that in an open economy with price-setting agents in both labour and

1 Board of Trade Journal, 30th March 1957, p.671.

product markets, an export-led upswing has the advantage of carrying with it some measure of price and wage setting restraint. By enforcing attention to competitiveness, if advantage is to be taken of this demand stimulus, export-led growth also does away with the disruptive effects of having to face a balance of payments constraint.

6.1 Exports

An important effect of the deflation of 1949 was to put downward pressure on the price level (producers' prices of industrial products were falling until the third quarter of 1950) which encouraged firms to seek markets abroad. In 1950 the government introduced the first of a series of export promotion measures with a scheme to encourage firms to export to dollar areas. German exporters were issued with dollar import rights in exchange for 40% of the value of their dollar exports, which they were then permitted to sell at a premium to importers.¹ This amounted to a partial devaluation of the DM against the dollar. A more general form of export promotion was the development of export credit facilities which began with the granting in 1950 of DM400 million of Counterpart Funds to the Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation) for the purpose of medium term export finance.²

1 H. Dernburg, "Germany's external economic position", AER, 44, 4 (1954), p.538; HMSO, Economic and Commercial Conditions, 1955, p.213.

2 C. Segre, "Medium term export finance", BNLQR, (1958), p.211.

The favourable credit terms which West German firms were able to offer for their exports appears to have played a role in the reestablishment of markets. Although strong export growth continued after the disappearance in 1954 of the more generous export finance terms in Germany than in the UK (a key rival in capital goods markets), it seems rash to conclude as does Wells¹ that the credit schemes were not of strategic importance in the success of the German export effort. Gaining a foothold in the market through the use of such a boost to competitiveness was certainly part of the basis for the expansion of the German export market share. The provision of export credit to countries which were considered bad risks by her competitors enabled Germany to enter Latin American and Middle East markets.

Between 1948 and 1955, the structure of German exports was transformed - in 1948, over half of exports consisted of coal and timber.² By 1950, finished manufactures comprised 43% of total exports; by 1955, 58%. However, two factors more important than the role of government export promotion were (i) the opportunities available for German goods because of the high level of world demand for industrial plant and (ii) the need for German producers to find markets abroad for their output. The internal market was only able to absorb a proportion of the potential production of a number of important industrial branches. Whereas in the consumer goods

1 S. Wells, British Export Performance: A Comparative Study, (Cambridge, Cambridge University Press, 1964), p.81.

2 F.A. Lutz, "The German currency reform and the revival of the German economy", Economica, XVI N.S. 62 (1949), p.141.

industries, export turnover as a proportion of total turnover was fairly stable at around 5-15% between 1951 and 1954, in capital goods industries export dependence was much higher and tended to increase (for example, machinery from 26 to 30%, 1951 - 1954).¹

Kindleberger points out that German exporters were starting from scratch in 1950: they had to build up dealer networks and gear production to foreign requirements with the result that "export markets so hard to enter or reenter, once entered were the last to be abandoned".² The UK government's Overseas Economic Survey of Germany in 1955 reported that:

Each and every market has been carefully analysed by exporting firms, their products adapted to particular needs, accompanied by persistent salesmanship and, where necessary by elaborate servicing agreements. A long-term approach has been adopted in obtaining a foothold in a particular country - that is to say, immediate profits have been subordinated to the need to establish a permanent market.³

Apart from the retreat to import controls during the balance of payments crisis in 1951, caused to a large extent by panicky stock-piling of imported materials as hostilities built up in Korea, import liberalization took place consistently over the period. With 1949 as the base year, over 60% of German imports were liberalized by the end of the following year. From 1952, import liberalization by Germany was greater than that of either France, the UK or Benelux. By

1 HMSO, Economic and Commercial Conditions, 1955, p.207.

2 C.P. Kindleberger, "Germany's persistent balance of payments disequilibrium" in R.E. Baldwin (ed), Trade, Growth and the Balance of Payments, (Amsterdam, North Holland, 1965), p.234.

3 HMSO, Economic and Social Conditions, 1955, p.207.

the end of 1954, on the basis of the OEEC code, Germany's import liberalization stood at 90% (the UK's was 83%, France, 65%).¹ Dollar imports were liberalized in 1954. and proceeded at a faster rate in Germany than elsewhere in Europe (apart from Switzerland). Wells concluded:

Not only did the reduction of tariffs have a price effect, causing German producers to drop their prices, it undoubtedly also had the effect of stimulating greater efficiency and productivity in German industry.²

In addition to the high income elasticity of demand for the product bundle the Germans sought to export, available data suggests that in terms of labour costs and productivity, German export competitiveness was already high by the early 1950's. Manufacturing productivity in 1951 was about three quarters that of the UK and whilst total hourly labour costs were just over one half the UK level, German unit costs were perhaps one quarter below those of the UK manufacturers and the gap was only fractionally closed between 1951 and 1955 (see Table 5.3). It is reasonable to surmise that labour productivity in West Germany was well above that in France and Italy, more than absorbing the slightly higher level of wage costs. The far higher productivity of US manufacturing was also probably more than offset by the wage differences.

The high level of competitiveness left the Deutsch Mark undervalued in spite of the small revaluation of the Mark against the other European countries in 1949.

1 OEEC, A Decade of Cooperation: Achievements and Perspectives, (Paris, OEEC, 1958), Table 25, p.180.

2 Wells, British Export Performance, 1964, p.81.

Table 5.3

Indicators of Competitiveness in Manufacturing,
International Comparison, 1951, 1955

Total hourly labour costs (UK = 100)						Output per employee (UK 1970 = 100)		
	WG	UK	US	It	Fr	WG	UK	US
1951	55	100	205	49	45	51	66	180
1955	67	100	243	57	61	63	68	201

Unit Labour Cost ^a (WG = 100)			
	WG	UK	US
1951	100	140	106
1955	100	138	114

Note: a Total hourly labour costs / Output per employee, assumes that average hours remained constant across the countries.

Sources: Total hourly labour costs: calculated from National Institute Economic Review, November 1962, Table 22, p.59 and OECD National Accounts 1950-1968, (Paris, OECD, 1970), Table 9. Output per employee: from S.J. Prais, Productivity and Industrial Structure, (Cambridge, Cambridge University Press, 1981), Table A1, p.279.

6.2 Investment

Along with exports, the basis for West Germany's rapid growth rate in the 1950's and for the continued expansion of its share of world markets was the rate of growth of the capital stock. The growth of the gross capital stock not only indicates expanding capacity for production but also the rate at which old equipment or plant is being replaced by new. The real gross capital stock in manufacturing grew at 7.0% p.a. between 1950 and 1955 (8.0% for the decade 1950 to 1960); such a rapid growth rate was not matched elsewhere. By the beginning of 1957, estimates suggest that in the key sectors of basic producer goods and investment goods more than 40% of

plant and equipment was less than 5 years old.¹

The gross capital output ratio fell by 3.1% p.a. in manufacturing and 4.5% p.a. for business as a whole between 1950 and 1955, reflecting that investment in these years was particularly productive. This was largely the result of being able to bring facilities back into production which were substantially intact but had been damaged in the war or immediate post-war years. Although the reconversion of new capacity installed during the war took some years, it often required surprisingly little diversion of current resources.²

With the exception of the basic and producers goods sector (especially coal, iron and steel and electricity) where uncertainty about property rights remained until the mid fifties and where prices were still controlled, profitability in production was very high in the early fifties. The share of profits in gross value added averaged 33.5% for business, 35.7% in manufacturing. In the absence of a functioning capital market and with interest rates high, retentions played a key role in investment financing. Between 1950 and 1954, in the private sector excluding house-building 87% of gross investment (fixed plus stocks) was financed by retentions including depreciation. The private sector excluding housing includes a number of very different categories of firms: for example, the basic goods firms where prices were still controlled and profits extremely low, as well as the highly profitable large incorporated firms. An indication of the

1 Krengel, Anlagevermögen, 1958, pp.52-3.

2 *ibid.*, p.15.

fact that self-financing provided the bulk of investment funds whenever high profits were available comes from the sector which would be most able to secure external funds.

Aktiengesellschaften (major companies) in industry (excluding construction, energy, etc.) retentions financed 90% of gross investment between 1950 and 1954.¹

The government played an important role in investment promotion both through its use of fiscal policy to reduce consumption and hence generate additional savings and through the use of tax incentives to ensure that such additional savings were invested. After the currency reform, firms were allowed wide scope to revalue their fixed assets. This provided the opportunity for very large tax deductible write-offs. Estimates of deductions from taxable income due to accelerated depreciation and other deductions and credits (non-housing) amount to 8.2% of total retentions of the enterprise sector excluding housing between 1950 and 1954.² However, it is important to note that the correct counter-factual is not a comparison between the lighter tax burden on enterprises because of these special deductions and the burden without the deductions, since the government wished to reduce the tax burden after the currency reform. It proposed flat rate across the board cuts but these were not

1 Calculated from E. Baumgart. E. Die Finanzierung der industriellen Expansion in der BRD, (Berlin, Duncker & Humblot, 1960), pp.82,84-5.

2 Calculated from K. Roskamp, Capital Formation in West Germany, (Detroit, Wayne State University Press, 1965), Tables 22,23 and E. Baumgart, Investition und ERP Finanzierung, DIW Sonderhefte, N.F., Nr.56, 1961, p.82.

acceptable to the Occupation authorities with the result that the tax cuts were concentrated on industry and were brought about by the specific investment-related measures described.

Whilst the government played a significant role in promoting business investment its direct role was confined to two specific sectors: residential construction and the basic goods sector. These were both sectors in which prices remained controlled. Rents in the early 1950's were only 5% above the 1938 level whilst building costs were more than twice as high, which implied that housing construction could not be profitably financed through the market.¹ Indeed, the rate of return on housing for 1950 and 1954 has been estimated at only 1.1% and 0.7%, respectively.² Government direct investment, loans and interest subsidies amounted to 54% of gross investment in housebuilding between 1950 and 1954.³ This is pushed up to almost 60% if the government's contribution by way of tax deductions both to employers who provided housing and to individuals is included.⁴ By 1955, the major Ruhr industries and their subsidiaries owned 300,000

1 R. Salomon, "Begriff und Problematik der wirtschaftlichen Engpässe", Kieler Studien, N. 29 (1954), p.72.

2 Klaus-Dieter Arndt, Wohnungsversorgung und Mietenniveau in der BRD, DIW Sonderhefte, N.F. Nr.35, 1955, p.37.

3 Roskamp, Capital Formation in Germany, 1965, pp.180-1, Baumgart et. al. Die Finanzierung der industriellen Expansion, 1960, p.82.

4 Calculated from Roskamp, Capital Formation in Germany, 1965, pp.180-1, Wallich, Mainsprings, 1955, p.161.

dwelling units built as business expenses.¹

The low profits in the basic industries meant that until 1952, Marshall Aid Counterpart funds played a critical role in these sectors, financing over 40% of investment in coal mining in 1949/50; over 20% in electricity between 1949 and 1951; and over 15% in the iron and steel industry between 1950 and 1951.² On receipt of Marshall imports, firms were required to deposit the equivalent D-Mark cost with a special public institution which loaned those so-called counterpart funds for investment. This device enabled vital investment projects to be supported by a government whose ideology was strongly opposed to direction of investment. Counterpart funds never financed more than 9% (1950) of gross investment and averaged 3.5%.³ Nevertheless, their importance was much greater than the aggregate figures indicate because of their concentration in the basic materials sector.

Yet investment in basic and producer goods remained inadequate to provide for the increased output demanded. In a major survey of the German economy in the autumn of 1952, the Economist reported that the industrial leaders of the Ruhr were turning their energies toward the manufacturing ends of the reorganized heavy industrial combines, because of concern about the implications for the basic industries of the Schumann plan, and the likely socialization of the Ruhr if the

1 Frederick Reuss, Fiscal Policy for Growth Without Inflation: the German Experience, (Baltimore, Johns Hopkins, 1963), p.106.

2 Baumgart, Investition und ERP Finanzierung, 1961, pp.51.

3 Wallich, Mainsprings, 1955, p.366.

Social Democrats won office.¹ The strong position of the works councils in the basic industries was also considered a disincentive to investment.

The relative backwardness of the basic sectors became of concern to the Occupation authorities following the outbreak of the Korean War and the need to increase Germany's contribution to the Western rearmament drive. US High Commissioner McCloy called for the reimposition of war time control and planning measures to redirect resources to the basic industries. The West German government was not prepared to do this. Adenauer was provided with a means of dealing with the bottlenecks by the reemergence of a traditional German institutional arrangement: the Spitzenverbände (leading industrial associations). Organized German business offered to loan over one billion DM of investment funds to basic industry by levying a tax on the consumer goods and services sector.² The businesses (132,000) which contributed the "Investment Aid" received fixed interest securities in the recipient firms.

Although the intervention of the industry associations was viewed with dismay by Erhard who had sought to shift the organization of the German economy to an atomistic, competitive footing, he saw it as less of an evil than direct

1 The Economist, October 18th 1952, p.208.

2 Werner Abelshauser, "Ansätze korporativer Marktwirtschaft in der Koreakrise der frühen fünfziger Jahre", VfZ, iv (1982), p.716.

state intervention and reluctantly agreed to the plan.¹ In addition to the assistance from within the private sector, the government boosted depreciation allowances for the bottleneck sectors and raised the price of coal. In total, the Investment Aid and special depreciation allowances contributed some 18% toward gross fixed investment in coal, iron and steel and power between 1952 and 1956.²

To sum up, high profits, boosted somewhat both by generous depreciation allowances and by low prices for basic inputs (coal, power, iron & steel) enabled private business to finance a high rate of investment in the early 1950's. The private sector also provided funds for basic sector investment under the Investment Aid scheme. The government's direct financial role was confined to housing and, through the allocation of counterpart funds, to the basic goods sector.

In a major study of the government's role in capital formation, Roskamp places much emphasis on the government's contribution. However, without wishing to detract from the part played by the government, its direct contribution to investment was narrowly focused on housing and basic industry. The government successfully promoted high investment in the private sector through tax policies, but a prerequisite for this success was the existence of the strong incentive to invest provided by high profits and strong demand. Export

1 Heiner Adamsen, Investitionshilfe für die Ruhr, (Wuppertal, Peter Hammer Verlag, 1981), pp.113-120.

2 Calculated from Roskamp, Capital Formation in Germany, 1965, pp. 128,170,172,174.

demand played an important role in securing optimistic expectations about markets and exerted pressure on firms to invest in order to reenter the world market.¹

The purpose of this chapter was to establish the foundations on which rapid growth in West Germany in the 1950's was based and to indicate the role played in this by profitability. Until the political and institutional framework of the West German economy had been erected and had created the pre-conditions for a successful monetary reform in 1948, the economy was stuck on a plateau, with the scope for growth largely constrained by the existing capital stock. The form of the monetary reform and the policies pursued by the authorities established an adequate level of profitability and engendered optimistic expectations for investment. The Korean War boom provided a critical stimulus to the economy and began the period of export-led growth.

In the next chapter, we examine the subsequent performance of the economy and return in chapter seven to trace the course of the factor distribution and profitability over the whole period from 1950.

1 Rolf Krengel, "Die Investitionstätigkeit der west deutschen Industrie seit Mitte 1948 im konjunkturellen Verlauf", VzW, 1 (1957), p.64.

Chapter Six

Economic Development 1955-1973: Performance and Policy

Despite an overall economic performance which was highly successful as compared with its European neighbours, the German economy showed some disquieting trends in the years from 1955 to 1973. The views about distribution of the various participants in economic policy-making evolved in the context of some slowdown in the growth rate, a weakening of competitiveness and rising inflationary pressure. These views are the subject of the next chapter. The aim here is to provide the background against which views about distribution and profitability developed and in which the observed trends in distribution occurred. For this reason the chapter is rather descriptive, identifying the key developments in performance and policy from 1955 to 1973. The period spans four cycles 1955-61, 1961-65, 1965-69, and 1969-73, measured from peak to peak.¹ The chapter is divided into two parts: the first deals with growth trends and structural change and the second with cyclical patterns and policy intervention.

In the first part, three themes are taken up. First is the general deceleration in the growth of the economy over the period, and the part played in it by the declining growth rates of the capital stock, the labour force and productivity. A question which arises is why with the

1 Because of the importance of closing the period of analysis with 1973, cycles are measured peak to peak. Peaks are identified by the maximum deviation of output from the five year moving average.

disappearance of the special factors conducive to "super-growth", the German economy slowed down to a rate of growth below that of the European average. The second theme relates to the external side of the economy and addresses the question of why the current account surplus persisted in spite of a series of revaluations and evidence of declining competitiveness. The final issue is price stability: why was inflation in Germany consistently below that of the rest of Europe in a period of fixed exchange rates?

In the second part of the chapter, attention turns from trend to cycle. The traditional export-led cycle is described, as is the change in the cyclical pattern in the mid sixties which resulted in the recession of 1966-67. Both the export-led cycle and the associated problem of "imported inflation", and the depth of the recession resulted in a policy debate about a more active role for fiscal policy and culminated in the Stability and Growth Law of 1967. For a brief period after 1967, there was a switch in the assignment of instruments to policy objectives as inflation became the concern of an explicit though voluntary incomes policy, and fiscal and monetary instruments were directed jointly to ensuring the appropriate level of aggregate demand. The experiment was short-lived and by 1973, with the move to floating rates, policy-making reverted to the pattern established in 1949, with the Bundesbank and monetary policy playing the decisive role in demand management. After a brief flirtation with a four-cornered policy objective (incorporated in the Growth and Stability Law) of adequate growth, high

employment, low inflation and external equilibrium, price-stability returned as the primary target.

1. Trends

1.1 Deceleration of growth, 1955-1973.

The most notable feature of the growth performance of Germany from 1955 to 1973 is the deceleration which occurred. Thus although the growth of real GDP in Germany was much higher than the European average from 1953 to 1961, it was below the average between 1961 and 1973.¹ By 1965, Germany was growing more slowly than the average of its three large European competitors, France, Italy and the UK (see Table 6.1). A similar pattern was displayed by economy-wide productivity growth and by output per man-hour in manufacturing in which the growth rate decelerated from 7.2% p.a. (1955-1961) to 4.8% (1969-1973), compared with the acceleration over the same period from 4.3% p.a. to 6.2% for the average of the big three European economies (see table 6.1).

A full investigation of the reasons for the slow-down in growth over this period cannot be carried out here. However, the main characteristics of the deceleration can be outlined. A key aspect was the abrupt slow-down in the growth rate of the labour supply in 1961 with the building of the Berlin wall. Between 1950 and 1961, the labour force grew by 1.5% p.a.; from 1961, it grew by only 0.4% p.a.. There was an even

1 Andrea Boltho. "Growth" in Andrea Boltho (ed.), The European Economy: Growth and Crisis, (Oxford, Oxford University Press, 1982), Table 1.6, p.34.

Table 6.1

Comparative Growth Rates of Output and Productivity

(average per annum compound growth rates, %)

Years	Real GDP		GDP per head ^a		Manuf. productivity	
	WG	3EUR ^b	WG	3EUR	WG	3EUR
1955-73	5.0	4.6	4.5	4.4	6.2	5.5
1955-61	6.3	4.6	4.8	3.9	7.2	4.3
1961-65	5.0	4.5	4.8	4.2	6.5	6.1
1965-69	3.9	4.9	4.5	4.2	6.0	6.3
1969-73	4.3	4.5	3.8	4.2	4.8	6.2

Notes: ^a GDP per civil employment^b 3EUR is an unweighted average of France, UK, Italy.

Sources: OECD Historical Statistics; Manufacturing productivity (output per man-hour) from U.S. Government, Underlying Data for Indices of Output/Hour etc., Bureau of Labor Statistics, 1984.

sharper decline in the growth of non-agricultural employment (from 2.6% p.a. (1955-61) to 0.5% p.a. (1961-73)).

The changes in the size of the non-agricultural labour force arose from demographic and participation changes, from the shift of labour out of agriculture, and from immigration. Up to 1961, there was an increase in the participation rate which was due entirely to the increased participation of women. Thereafter, participation fell slightly: in 1973, the participation rate in Germany was just above the European average.¹

Table 6.2 provides a summary of the sources of the growth in non-agricultural employment. The residual category covers the additions to the labour force due to demographic and

¹ Calculated from OECD, Labour Force Statistics 1964-1984, (Paris, OECD, 1986), pp. 476-497.

participation rate factors, as well as the reduction in disguised unemployment. These factors were positive and contributing to labour force growth only up to 1961. A roughly constant flow of labour from agriculture to industry and services occurred throughout the period. In the second half of the fifties, the movement off the land was matched by the immigration of refugees from Eastern Germany. Not only were the refugees absorbed into employment but the pool of

Table 6.2

Sources of Growth of Non-agricultural Employment. 1955-73

Years	Growth of non-agric. e'ment (%p.a.)	Change of non- ag.e'mt ('000)	of which from*:				
			DDR	Abroad	Un'mt	Agric.	Residual
1955-61	2.6	543	144	71	96	122	110
1961-69	0.3	106	9	107	0	136	-146
1969-73	0.5	199	0	265	-24	110	-152

Note: * Inflow from DDR, of foreign labour; fall in unemployment, in agricultural employment.

Sources: Data from OECD, Labour Force Statistics, (Paris, OECD, various years); inflow from DDR from Statistisches Jahrbuch, 1962, 1975; foreign labour from SVR Jahresgutachten various years.

unemployment was also drained and the first inflow of foreign workers from Southern Europe had joined the work force by the beginning of the sixties.

As early as 1955, the West German government concluded an agreement with Italy regarding the recruitment and placement of foreign workers. All that was envisaged at that stage was the supply of seasonal workers for agriculture and building. However, the demand for additional industrial labour grew rapidly as the former sources of supply were exhausted. By

1959. only 1/10 of the foreign workers were employed in seasonal agricultural work: the majority were working in construction and in factories.¹

Throughout the sixties, the supply of labour was a source of concern in Germany. In spite of the net outflow of foreign labour during the recession in 1967, a Gastarbeiter agreement was concluded with Yugoslavia in 1968, confirming that in the view of government and industry, foreign labour had become a permanent requirement of the German economy. By 1973, foreign workers constituted 9% of the labour force and 11% of employees.

The first influx of labour to West Germany was German-speaking, on the whole skilled or semi-skilled, highly motivated (having lost all their possessions and monetary wealth) and mobile. By contrast, the labour recruited from Southern Europe, though mobile, was largely unskilled. In 1972, one third of foreigners were in unskilled occupations compared with only 7% of Germans whilst less than one sixth of foreigners were classified as skilled compared with nearly two thirds of Germans.²

The German Trade Union Federation (DGB) did not oppose the employment of foreign workers, viewing it as necessary for continued growth. The unions insisted that Gastarbeiter were paid union rates and could not be used directly as a source of

1 S. Castles, & G. Kosack, Immigrant Workers and Class Structure in Western Europe, (Oxford, Oxford University Press, 1973), p.40.

2 W. Lamberts, Wachstum und Strukturbildung bei Ausländerbeschäftigung, (Essen, RWI-Institut, 1976), p.61.

cheap labour. They made considerable efforts to recruit Gastarbeiter to union membership and had some success - it is reported that in 1970 about one third of foreign workers were in trade unions (a rate of unionization at about the national average but below average for the sectors where foreign workers were concentrated).¹

Apart from changes in the labour force, an important influence on the labour available in this period was the evolution of hours worked per week and per year. In 1955, hours worked per week in manufacturing were well above the European average but this discrepancy was virtually eliminated by the early sixties through a concerted union campaign in the late 1950's. Average weekly hours fell by 1% p.a. over the period as a whole but at nearly double this rate from 1955-61. In 1950 in the economy as a whole, average annual hours were 17% above the average level in France, Italy and the UK but by 1960, they were only 5% higher.² Table 6.3 summarizes the comparative growth rates of the labour force and of annual hours worked in Germany and the three other large European economies.

Although the sudden halt in the inflow of labour from the DDR in 1961 was clearly exogenous, it does not follow automatically that the slow growth in non-agricultural employment in the 1960's and early 1970's was entirely

1 Castles & Kosack, Immigrant Workers, 1973, p.131.

2 Angus Maddison, Phases of Capitalist Development, (Oxford, Oxford University Press, 1982), Table C9, p.211.

Table 6.3
Comparative growth rates of labour force and annual hours of
work

Years	% p.a. rates of growth			
	Labour Force		Annual Hours/Person Employed	
	Germany	3EUR	Germany	3EUR
1950-60	1.3	0.5	-1.0	-0.2
1960-73	0.2	0.5	-0.9	-1.0
1950-73	0.7	0.5	-0.8	-0.6

Source: Maddison, Phases of Capitalist Development, 1982, Tables C7, C9, pp. 209,211.

supply-determined. However, some support is given to the supply-constraint hypothesis by the fact that the slow-down in the growth of the capital stock came after that of the labour force. The business gross capital stock was growing faster in 1961 than in 1955 (the five-year moving average centred in 1961 was 7.7% p.a. as compared with 6.8% p.a. in 1955). In manufacturing, the growth rate of the capital stock stayed very stable at 8.5% in 1955 and 8.6% in 1961.

Germany began the period with its business capital stock growing more than twice as fast as elsewhere in Europe (in 1955 at 7.7% p.a. compared with 3.5% for the average of the other three major European economies).¹ The growth rate fell rapidly over the next decade to below 5% p.a. before picking up in the final cycle. From 1969-73, the business capital stock grew at 5.6% p.a. as compared with 4.9% p.a. for the average of France, Italy and the U.K.. As illustrated in

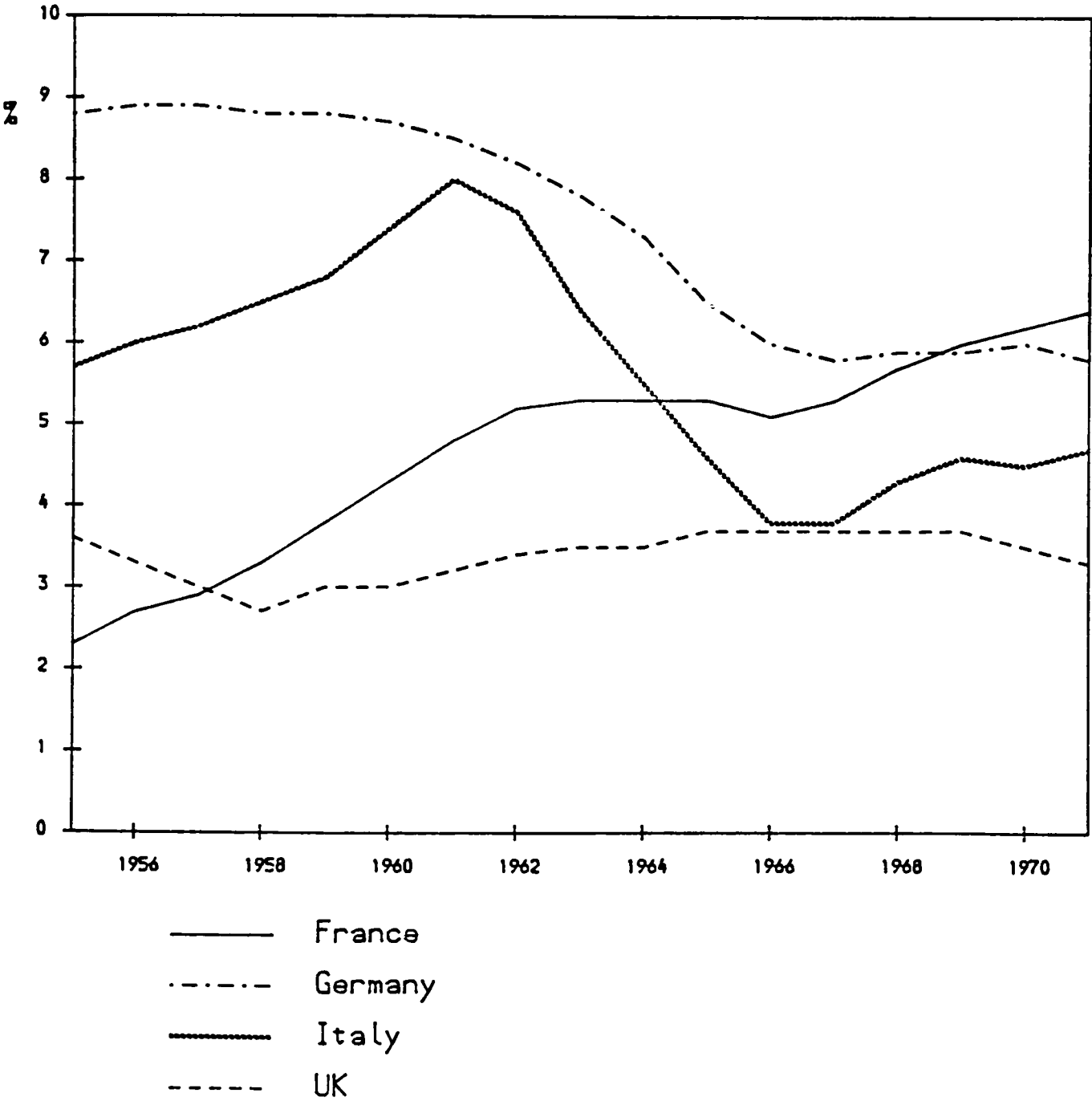
¹ Data for all international comparisons of growth rates of the capital stock and capital/labour ratios comes from Armstrong & Glyn, "Accumulation, Profits, State Spending", 1986.

figure 6.1, the manufacturing capital stock followed a similar but more exaggerated pattern until the mid sixties. recording rates of accumulation not matched elsewhere in Europe over the whole period.

Figure 6.1

Comparative Growth Rates of the Manufacturing Capital Stock

Germany, France, Italy, U.K., % p.a.



Source: Percentage growth rates of 5-year moving averages of gross fixed capital stock, from Armstrong & Glyn, "Accumulation ..." 1986, Table 41.

Reflecting the comparatively faster growth rate of the

capital stock, the business capital/labour ratio grew on average more rapidly in Germany than in the other large European economies. The divergence narrowed over the period, but manufacturing industry was still becoming more capital intensive at a markedly faster rate in Germany than elsewhere in Europe in the final period 1969-73 (the capital/labour ratio in manufacturing rose at a rate of 6.4% p.a. in Germany as compared with an average rate of increase of 4.5% p.a. France, Italy and the U.K.).

To summarize, the deceleration of growth in Germany was associated with important changes on the supply-side, the most prominent of which was the sharp fall in the growth rate of the labour supply following the building of the Berlin Wall in 1961. As will be argued in part III, the changing supply of labour was an important determinant of the fall in profitability which occurred. This in turn may well have contributed to the slackening in the growth rate of the capital stock and to the associated fall in the rate of productivity growth. Apart from the endogenous decline in the rate of productivity growth, there may have been an additional effect from the below average skills of the Gastarbeiter, as they made up a growing proportion of employment.

In a major study of the German growth performance¹, it has been argued by Schatz, that a central reason for the deceleration in growth in the 1960's was the policy combination of an undervalued D-Mark and the recruitment of

1 K-W. Schatz, Wachstum und Strukturwandel der westdeutschen Wirtschaft im internationalen Verbund, Kieler Studien, Nr.128, (Tübingen, J.C.B. Mohr, 1974).

Gastarbeiter. He argues that had foreign workers not been recruited, the German economy would have become more capital-intensive faster and that this would have led to a faster rate of productivity growth, on the grounds that the capital stock would have been scrapped at a faster rate. The second strand of his argument is that the undervalued exchange rate protected the tradeables sector. A higher exchange rate, he claims, would have increased the incentive for productivity growth in the export sector through the greater pressure of international competition.¹

Although such counter-factual arguments are always dangerous, the evidence which will be presented below in chapter nine suggests that had both of Schatz's policies been pursued, the decline in profitability in German industry would have been even faster than it was. To the extent that investment is a positive function of the rate of profit, this would have led to a more rapid slowdown in the German economy from the 1960's.² The issue of the undervalued exchange-rate leads on to the next section where the external aspects of economic performance between 1955 and 1973 are examined.

1 A useful summary of the thesis of the Kiel school of which Schatz is a member is provided in pages 143-150 of Hajo Riese, "Strukturwandel und unterbewertete Währung in der Bundesrepublik Deutschland: Bemerkungen zur theoretischen Position des Instituts für Weltwirtschaft Kiel", Konjunkturpolitik, (1978), 143-169.

2 In a test of the relationship between rates of return and investment, Sutch and Chan-Lee's results provide some support for the hypothesis that for Germany rates of return "Granger-caused" investment. (H. Sutch & J.H. Chan-Lee, "Profits and Rates of Return", OECD Working Paper, No. 20, 1985. Annex II, pp. 20-22.)

1.2 The role of the external sector

The central feature of the performance of the German economy on the external side is the persistent current account surplus. From an average surplus on current account between 1955 and 1961 equivalent to 2.6% of GDP, it fell to an average of 1.4% over the 1961-65 cycle, before regaining the level of 2 1/2 % of GDP over the last two cycles. Over the same period, the D-Mark was revalued in 1961 and 1969 and appreciated further from 1971 to 1973. The total nominal appreciation of the effective exchange rate was over 35%.¹ Between 1955 and 1961, the real exchange rate² barely altered, with the revaluation just offsetting the fall in the real exchange rate from 1955 to 1960. From 1961 to 1965, the real exchange rate increased marginally - by a total of 0.9%. Over the next cycle, to 1969, the real exchange rate fell (by 4.7%) but this was followed by a massive real appreciation of 43.5% between 1969 and 1973.

A striking feature of the German balance of payments was the high and stable net exports of manufactures. In contrast to the other large European economies, the trade balance on manufactures stayed at a fairly constant surplus equivalent to 8 to 9% of GDP over the period from 1955 to 1973; the deficit on the non-manufactured goods and services balance increased

1 IMF International Financial Statistics Yearbook, various years, lines ah and amx.

2 The series for the real exchange rate was calculated as the ratio of the German wholesale price index in dollars to the wholesale price index for the industrialized countries in dollars using IMF International Financial Statistics series in Supplement on Price Statistics, (Washington D.C., IMF, 1981), pp.21,72.

only slightly over the period from an average of 6.6% (1956-60) to 7.6% (1971-75).¹ Within non-manufactures, Germany has become somewhat more self-sufficient in both food and raw materials but less self-sufficient in fuel. The most important offset to rising self-sufficiency in food and raw materials was the increasing deficit from less than 1% of GDP to more than 3% of GDP of non-government services and private transfers. Growing foreign travel as incomes increased as well as the repatriation of funds by the increasing Gastarbeiter population account for this trend.

The specialization in exports of manufactures helped to maintain the share of manufacturing employment in total employment. The share of employment in manufacturing industry in Germany increased slightly between 1955 and 1973. Germany, Italy and Japan were the only countries out of a sample of nine major industrial economies for which the share of employment in manufacturing increased between 1960 and 1973.² In Germany, the trend decline in the share of employment in agriculture was reflected in growing shares for both private services and the government sector (see Table 6.4).

1 From background tables for draft of R. Rowthorn, & J. Wells, Deindustrialization and the Structure of Trade, (Cambridge, Cambridge University Press, forthcoming 1987).

2 C. Brown & T. Sheriff, "De-industrialization: a background paper", in F. Blackaby (ed.), Deindustrialization, (London, Heinemann-NIESR, 1979), pp.233-262, Table 10.2, p.237.

Table 6.4

The Industry Composition of Employment, 1955-1973
(% total e'ment)

	Agric.	Industry of which Manuf.	Services of which Private		
1955	17.7	46.8	35.2	35.6	28.0
1961	13.1	48.5	37.5	38.5	30.1
1965	10.7	49.2	37.6	40.1	30.3
1969	9.1	48.5	37.7	42.3	31.4
1973	7.2	47.4	36.7	45.5	33.0

Sources: VGR, Revidierte Reihen ab 1950, Table D23, p.122,
Revidierte Ergebnissen 1960-1981, Table 3.48,
p.304.

The influence of trade specialization on the employment structure is neglected by Schatz¹ and Fels² from the Kiel institute who treat the share of manufacturing employment as though it was entirely determined by the domestic "de-industrialization factors" of relative sectoral productivity growth rates and patterns of demand.

But although Germany's particular pattern of trade specialization contributes to an understanding of why "deindustrialization" did not occur there unlike other advanced countries, it cannot, of course explain the persistent surplus on current account over the period. This requires a macro-economic rather than a structural explanation. The puzzle is how to account for the current account surplus in the face of the deterioration in Germany's relative productivity performance and of the appreciation of

1 Schatz, Wachstum und Strukturwandel, 1974.

2 Gerhard Fels, "Die Auswirkungen einer exportorientierten Entwicklungsstrategie auf die Branchenstruktur in der Bundesrepublik", Beihefte der Konjunkturpolitik 19, (1972).

the real exchange rate from the late sixties. Before attempting to throw some light on this apparent paradox, the path of German competitiveness will be examined in more detail.

Two detailed and sophisticated studies by the National Institute for Economic Research¹ permit a closer examination of German trade performance over the period. The major finding is that German competitive strength declined sharply. On the assumption of constant market shares an estimate is made first of the amount of export growth that would have occurred given the growth of commodity and area markets. The residual, i.e. the difference between actual and expected changes in exports is identified as the competitiveness indicator. Whilst in the years from 1950 to 1955 as Germany was reintegrated into world trade (described in chapter four) three quarters of the growth of German export volume was the outcome of growing market shares, only about a third of export growth in the second half of the fifties was attributable to competitive strength.²

In the early sixties, a positive commodity pattern boosted German exports, outweighing a slightly unfavourable area shift. But more significantly, Germany began to lose

1 A. Maizels, Industrial Growth and World Trade, (Cambridge, Cambridge University Press, 1963); R. Batchelor, R. Major, and A. Morgan, Industrialisation and the Basis for Trade, (Cambridge, Cambridge University Press, 1980).

2 Maizels, Industrial Growth, 1963, Table 8.5, pp. 200-201.

market share.¹ In the latter sixties (1967-71), the commodity pattern turned slightly against Germany (reflecting the slower than average growth of machinery) but the area pattern was in her favour as the result of the rapid growth of total exports to the EEC. Nevertheless, Germany was unable to hold her own - failing to maintain her commodity and area adjusted share of exports. Indeed, Germany suffered a loss of potential exports in absolute terms greater than did the UK in this period after the devaluation of the pound in 1967.

In their dissection of the export performance of the original six members of the EEC, Batchelor et. al. show that in the period of very rapid growth of demand in the EEC (total exports to the EEC grew by 15% p.a. in real terms from 1967 to 1971²), Germany failed to make significant gains in intra EEC trade. Its loss of potential exports outside the EEC was of a similar proportionate amount as the other EEC members.³

In a more detailed (4-digit SITC) analysis of trade performance designed to highlight the relative success of countries in exporting growth products over the period between 1963 and 1971, Germany's best performance was found to be in the residual category of relatively undynamic products.⁴ On this criterion, Germany's performance was quite similar to that of France, rather better than the UK, but worse than

1 Batchelor et. al., Industrialization, 1980, Table 4.2, p.50.

2 *ibid.*, Table A2, p.256.

3 *ibid.*, Table 4.4, p.55; p.57.

4 *ibid.*, Table 4.8, p.64; pp. 63-66.

Italy and the smaller members of the EEC6 who all gained shares in the growth industries. Not surprisingly, Japan's performance was substantially better than those of the European economies.

In the behaviour of its manufactured imports, Germany differed little from France and the UK (see Table 6.5).

Table 6.5
The Import Content of Supplies of Manufactured Goods^a
Germany, UK, France, 1950-1970
(%)

	1950	1959	1963 ^b	1963 ^b	1971
Germany	4	7	10	9	17
UK	4	6	7	9	16
France	7	6	12	12	19

Notes: a Supplies of manufactured goods = gross value of production of non-food manufactures and imports of finished goods.
b Slightly different methods were used to calculate the pre and post 1963 series.
Source: Batchelor et. al., Industrialization, 1980, p.38.

Although the disaggregated analysis confirms that Germany's competitive performance deteriorated over the second half of the period as would have been predicted from the aggregate indicators such as productivity growth and the real exchange rate, the question remains as to how the current account balance remained so strong. The mystery evaporates once account is taken of the slowdown in the growth of the economy.

As has been shown, in the 1950's Germany's competitiveness was very high, the evidence of which was its ability to increase its share of world export markets. This

level of competitiveness combined with a favourable commodity composition of trade to generate a growth of exports sufficient to more than pay for the rapidly growing volume of imports required for fast domestic growth. In the 1960's, German growth slowed to the rate of growth of its main trading partners which lowered the growth rate of imports, while export growth was maintained due to the faster growth of world exports. A lower level of competitiveness was therefore quite compatible with a continuing surplus on the balance of payments. In these circumstances, it would have required a very large drop in competitiveness for the surplus on the current account to have been eroded. Table 6.6 below illustrates the pattern of growth of German exports, world exports, German imports and German GDP.

Table 6.6

Growth Rates of Imports and Exports
World, Germany, 1951-1973
(real per annum average growth rates; %)

	World Exports (manuf.)	German Exports (manuf.)	German GDP	German Imports (total)
1951-63	6.1	9.6	6.8	13.4
1963-73	10.6	10.7	4.5	9.9

Sources: Columns 1 and 2 from U.N. Statistical Yearbook 1961 Table 154, 1965 Table 151, 1970 Table 144, 1972 Table 148, 1976 Table 149; 1955 German exports from Board of Trade Journal 1957, p.672. Column 3 from OECD Historical Statistics. Column 4 from U.N. Statistical Yearbook 1965 Table 150 and SVR JG 1977/78 Table 42*.

1.3 Price stability

In comparison with the other large European economies, Germany was relatively successful in controlling inflation. Up until the final cycle in the period, bursts of inflation in

cyclical peaks were limited to around 3% p.a. compared with 5% or more in analogous conditions in the other economies. Nevertheless, in spite of this comparative success, the trend in inflation was distinctly adverse over the period as a whole. Consumer prices rose in each year from 1955 to 1973 and the average rate of increase grew over the decade to 1965. It fell back in the third cycle as the result of the 1966-67 recession but jumped to an average of above 5% between 1969 and 1973.

The trend toward rising inflation was common throughout the industrialized economies over this period; the focus of attention here is to explain the fact that inflation was lower than in the rest of Europe during a period of basically fixed exchange rates (i.e. until 1971). As noted above, the real exchange rate remained roughly constant until 1970, with the lower inflation offset by the revaluations in 1961 and 1969. The appreciation of the D-Mark does not provide an explanation of the lower inflation in Germany - rather it reflects the same features of the economy which produced the lower inflation.

German inflation was on average one percentage point below that of OECD Europe over the entire period from 1955 to 1973. Until 1969, German inflation was at about the rate of US inflation, although in the years 1969-73, consumer prices rose by 5.3% p.a. in Germany and by only 4.9% p.a. in the US.¹

A comparison between the inflation performance of Italy

1 Christopher Allsopp, "Inflation" in Boltho, The European Economy, 1982, Table 3.2, p.79.

and Germany in the 1960's by Allsopp¹ is instructive. He points to the Italian experience where in the early sixties, with the achievement of high capacity utilization, there was a wage explosion. This was followed by restrictive demand management policies and a slow-down in growth, with inflation remaining higher than in the fifties. In Germany which had a similar inflation rate to Italy in the 1950's, there was perhaps an even higher pressure of demand in the early 1960's. He suggests that Germany's lower inflation in the 1960's can be attributed to the more successful transition to lower growth than was the case in Italy.²

There are two aspects to Germany's low inflation performance: the growth of unit labour costs and the fall in profitability. Unit labour costs in manufacturing in Germany rose by 42% from 1961 to 1969, whilst in Italy, they rose by only 35%.³ However, there was a sharp decline in profitability in Germany, but a modest increase in Italy: the net profit rate for manufacturing fell by 16.1% in Germany, but it rose by 1.6% in Italy in the period from 1961 to 1969.⁴

This comparison points to the connection between Germany's favourable inflation performance over this period and the decline in profitability which occurred at the same time. As will be argued further in the following two chapters. there is

1 *ibid.*, pp.72-103.

2 *ibid.*, p.95.

3 In national currencies, U.S. Government, Underlying Data, 1984.

4 Armstrong & Glyn, "Accumulation, Profits, State Spending", 1986.

a close connection between the determinants of trends in inflation and in profitability in an open economy.

Whilst the comparison with Italy highlights the role of pricing behaviour, wage-setting and the structure of the industrial relations system in Germany differ markedly from those in the other three large European economies and are frequently invoked in explanations of the trend in inflation. Flanagan, Soskice and Ulman argue that the structure of collective bargaining in Germany is conducive to resistance on the part of employers to wage claims.¹ About 80% of employers belong to the affiliates of the BDA who exert considerable discipline over their members. Bargaining takes place between unions and the regional employers' association. They argue that the pricing policies of German business in the open sector led employers to exploit the opportunities for resisting wage demands which the industrial relations structure provided.² In other words, it was a combination of the specific collective-bargaining structure with restrained pricing policies which was an important component of the explanation of low inflation. The role of policy in directing the attention of firms to their export markets was outlined in chapter five and will be taken up again in subsequent chapters.

Flanagan et. al. argue that the two-tier bargaining system with industry-level regional bargaining supplemented at

1 Robert J. Flanagan, David W. Soskice & Lloyd Ulman, Unionism, Economic Stabilization and Incomes Policy: European Experience, (Washington D.C., Brookings, 1983), pp. 236-275.

2 *ibid.*, p.238.

the plant level avoids both the drawbacks of company-level bargaining with a national union as in the US and economy-wide bargaining as in Sweden:

since industrywide bargaining reflects the influence of smaller and less profitable firms within the employers' associations, the contractual settlements could accommodate their relatively low "ability to pay"; this would leave room for drift to be paid by the more profitable firms at the bottom tier, where they need deal only with domesticated and legally fangless works councils.¹

Table 6.7 shows the growth of hourly compensation in manufacturing for Germany and the other three large European economies over the period since 1955.

Table 6.7
Comparative Wage and Price Inflation:
Germany, France, Italy, UK, 1955-1973
% p.a.

Year	Germany	France	Italy	UK
A. Hourly compensation, manufacturing				
1955-61	10.6	8.9	6.5	6.2
1961-65	9.5	9.1	13.7	6.5
1965-69	7.4	8.2	9.1	6.9
1969-73	13.3	12.5	19.1	14.0
B. Consumer price index				
1955-61	1.9	5.1	1.9	2.4
1961-65	2.9	4.0	5.6	3.5
1965-69	2.2	4.0	2.5	4.2
1969-73	5.3	6.2	6.6	8.0

Sources: Hourly compensation from U.S. Government, Underlying Data, 1984. Consumer price index from IMF, Supplement on Price Statistics, 1981.

Germany displayed a slightly downward long run trend in its relative export prices until the end of the 1960's. The

1 *ibid.*, p.237.

trend then changed abruptly with the series of revaluations to the extent that by 1971, German export prices relative to those of the other main industrialised economies had risen fastest (see Table 6.8). An important feature of the German economy was that this change in relative prices was not reflected in trade performance to the extent that would have been expected from Batchelor's cross country study of prices and trade shares.¹ It may well reflect the low price elasticity of demand for customised capital goods and the fact that Germany was a price leader in this highly specialized sector. As Batchelor et. al. point out, in the commodity groups in which Germany must follow "world" prices such as some chemicals and transport equipment, prices "did not move too far out of line with those of competitors".²

Table 6.8

Indices of Relative Export Unit Values
International Comparison, 1962-1973
 manufacturing, (1975=100)

Year	Germany	France	Italy	UK	US
1962	93.0	94.6	103.8	103.7	104.1
1969	90.4	95.7	104.0	102.7	111.7
1973	105.1	98.8	95.9	98.9	94.6

Source: IMF, Supplement on Price Statistics, 1981, pp.134-136.

1 Batchelor et. al., Industrialization, 1980, pp.59-60.

2 *ibid.*, p.60.

2. Cyclical Behaviour and Policy Intervention

Throughout the period from 1955 to 1973, exports played an important role in the upswing from each cyclical trough. The strength of exports which coincided with the peaking of domestic demand reinforced the pressure of demand and contributed to inflationary pressure both through the direct effect of net exports on demand and through the additional liquidity in the economy. This was the problem of "imported inflation". The monetary authorities attempted to offset the overheating through sterilization and by restricting credit. The limitations to the efficacy of monetary policy in such a situation led to a debate in the early sixties as to the need for a more active role to be played by fiscal policy if the upward phase of the cycle was to be managed satisfactorily.

In the mid sixties, there was a break in the typical cyclical pattern. A pre-election spending package imparted a pro-cyclical boost to demand in 1965. The Bundesbank attempted to reduce the excess demand by raising interest rates and for the first time since the early fifties this was effective in tightening credit because of the high interest rates prevailing abroad. This signalled the onset of Germany's first post-war recession and a policy debate which saw the adoption of a Keynesian basis for managing aggregate demand, in the form of the Growth and Stability Law, and of a voluntary incomes policy for controlling inflation.

2.1 The export-led cyclical pattern

Apart from variations in amplitude, the first three

cycles (1955-61, 1961-65, 1965-69) conformed to a pattern: each upswing was led by exports which was followed by a subsequent boost in investment and then in consumption. This pattern of export-led cycles in Germany is well-known¹ and can be illustrated by the simple calculations in Table 6.9. The growth rate of each component of real demand for the first and second years after the cyclical troughs in 1958, 1963, 1967, and 1971 have been calculated. Export growth was fastest in each upswing with investment growth the fastest in the second year after the trough. In each cycle apart from the early 1960's, export growth acted as an automatic stabilizer, cushioning the downswing. The multiplier effect on consumption shows up in the increase in the growth rate of consumption in the second as compared with the first year of the upswing.

This pattern was broken in the final upswing from the trough of 1971. As usual, export growth drove the upswing, but in both the first and second years following the trough, real investment declined. The pattern for consumption also changed, with real consumption growth rising only half as fast in 1973 as it rose in 1972. Both endogenous factors and policy changes lay behind this changed pattern and will be discussed later in this chapter.

1 For example, Herbert Giersch, Growth, Cycles and Exchange Rates: The Experience of West Germany, (Stockholm, Almqvist & Wicksell, 1970), ch.1,2; Wolfgang Kasper, "Stabilization policies in a dependent economy", in E. Claasson, & P. Salin, (eds), Stabilization Policies in Interdependent Economies, (Amsterdam, North Holland, 1972), p.273.

Table 6.9

Cyclical Behaviour of the Components of Aggregate Demand,
1955-1973

(percentage growth in the year following the trough)

	Consumption (incl. dwellings)	Investment (bus.)	Government (incl. invest.)	Exports
1955	10.5	24.4	7.0	16.7
1959	5.9	11.6	10.8	12.6
1964	6.0	7.9	4.9	7.9
1968	4.0	6.5	1.3	12.9
1972	5.5	-1.1	3.0	6.5

(percentage growth in the second year following the trough)

1956	8.6	8.2	2.1	15.2
1960	7.2	16.9	6.6	13.0
1965	6.5	6.6	4.2	6.2
1969	6.7	19.4	5.2	9.6
1973	2.3	-0.9	4.0	10.2

Sources: VGR Revidierte Reihen ab 1950, Table D14 and 13,
Revidierte Ergebnisse 1960 bis 1981, Table 2.6,
p.59.

2.2 The problem of "imported-inflation" and the policy context

In 1955-56, the achievement of full capacity utilization and the emergence of shortages of labour in particular skill categories and industries combined with the continuing current account surplus to produce the first example of the policy dilemma that was to plague the German monetary authorities for nearly two decades. In 1955, the discount rate was raised sharply to restrain domestic activity. The following year, the Central Bank was forced to change the interest rate to accord with external rather than domestic policy requirements - it was cut to bring it closer into line with rates abroad.¹

The following year the dilemma situation was exacerbated

1 Bundesbank, Annual Report, 1956, p.16.

by the first inflows of short-term funds speculating on an appreciation of the D-Mark.¹ But the prevailing view in the Bundesbank was that the external surplus was temporary rather than structural and that a revaluation would be a concession to deficit- and inflation-prone European countries.² The government's decision not to revalue appeared to be vindicated in the short run and the Deutschmark was made fully convertible in 1958. However, the upswing in 1959-60 led to the recognition by the Bundesbank of the limits to its ability to control inflation through monetary policy. A boom led by exports was under way in 1959 and drew a strong response from investment, especially construction. The rising export surplus in the upswing was swelling liquidity. The Bundesbank introduced a range of restrictive monetary measures attempting to reduce liquidity directly so as to avoid too great an increase in the interest rate differential, but with no effect on investment.³ A freeze on credits followed but was offset by an increase in the velocity of circulation and through the ability of firms to borrow from abroad.⁴ Despite the fact that the Bundesbank stopped the payment of interest on foreigners' holdings of D-Marks, the inflows of capital from abroad continued. For the first time the D-Mark found itself as the opposite pole of the dollar and sterilization of the

1 Bundesbank, Annual Report, 1957, p.24.

2 Otmar Emminger, "The D-Mark in the Conflict between Internal and External Equilibrium, 1948-75", Essays in International Finance, 122 (1977), p.7.

3 *ibid.*, p.11.

4 Bundesbank, Annual Report, 1960, p.15.

inflows proved largely self-defeating. The efficacy of monetary policy in influencing aggregate demand had come to depend on quite fortuitous combinations of domestic and external conditions.

As a result of the experience of 1960, the balance of opinion within the Bundesbank shifted and in 1961 the D-Mark was revalued by 5% in an attempt to deal both with the speculation and with the current account surplus. Secondly, the Bundesbank accepted that its interest rate policy would have to be oriented to the structure of international interest rates. Prompted by these events, a reassessment of the role of fiscal policy began.

The macroeconomic framework through which fiscal policy was regulated until the mid sixties was not based on the short-run aggregate demand effects of fiscal decisions (through multiplier and accelerator processes) but rather, on the monetary implications. The concern with preventing excessive central bank credits to the government rather than with the increase in the public debt is traced by Hansen to the particular German concern with inflation.¹

The legal basis for the absence of a cyclical orientation for fiscal policy was the article of the Bundesbank Act which prevents the Bundesbank from financing deficits. The Bundesbank can only provide temporary credit to cover shortfalls due to the timing of receipts and expenditure and cannot finance a deficit on a lasting basis. It is this law

1 Bent Hansen, Fiscal Policy in Seven Countries, 1955-1965, (Paris, OECD, 1969), p.226.

which constrained fiscal action rather than the often quoted constitutional requirement that the budget estimates of revenue and expenditure should balance. The balanced budget law requires only that expenditure be covered by both revenue and borrowing, and whilst current expenditure should be covered by current revenue, there was flexibility in assessing the extent to which investment could be covered by loans. The constraint on borrowing was set by the conditions under which the Bundesbank could extend credit to the government.¹

The legal constraint on government borrowing from the Bundesbank also led to a self-restraint on government borrowing from the public since the attempt to increase sales of debt to the private sector would have tended to put upward pressure on interest rates and this would have exacerbated the problem of controlling liquidity by attracting funds from abroad. In other words, any fiscal deficit financed by sales of bonds would have been monetized through this channel. The budget surpluses of the 1950's which may have put downward pressure on the interest rates, allowed some room for expansion. Thus, the borrowing restrictions were asymmetrical in their effects - preventing expansionary policies only at times when the federal government did not have its own reserves and having no effect on contractionary actions.

In the absence of a counter-cyclical aggregate demand role, two considerations dominated fiscal policy²: firstly,

1 *ibid.*, pp.225-6.

2 The federal structure of West Germany has important implications for the conduct of fiscal policy. The two lower levels of government have increased their share of expenditure

the historical legacy of the tax structure inherited by the West German government from the Occupation authorities and second, the "structural" requirements for government expenditure and tax incentives. The latter category included the need to rebuild the housing stock, infra-structure, the industrial capital stock and to rearm. The inherited tax structure required a series of reforms to reduce the tax burden. Personal income taxes under the Occupation were extremely high (up to 90%) as were corporation tax rates (50% raised to 60% in 1951) - although as demonstrated in chapter five, favourable depreciation provisions reduced the effective rate for businesses. Income tax rates were reduced in 1948, 1953, and 1954, and a new rate structure was introduced in 1958. Depreciation provisions were reduced in parallel with the cuts in corporation tax rates.¹

The outcome of both the legal framework and the primary determinants of fiscal policy was that any counter-cyclical outcome was accidental and pro cyclical impacts were not

steadily over the period from 45.1% in 1955 to 62.8% in 1973. The bulk of public investment is carried out at the lowest level - the Gemeinde. The Bund is basically responsible for public enterprise investment - most important of which are railways and post office and telecommunications. The Bund controls the social security system (35% of total government expenditure in 1973) and taxation. Only from 1967 with the Stability and Growth Law was the Bund able to influence the spending of more than 50% of non-social security state expenditure.

¹ K. Häuser, "West Germany", in NBER (ed.), Foreign Tax Policies and Economic Growth, (New York, Columbia University Press, 1966), p.119; Table A-3, p.147.

uncommon.¹ From Table 6.9, it appears that fiscal policy was counter-cyclical after the trough in 1958. However, although this had the effect of an anti-cyclical policy boost it was not designed as such. It was largely the result of the fortuitous timing of the expansion in military expenditure associated with German obligations to NATO. As Hansen noted:

The expansion of purchases of goods and services for military purposes from 1958 was financed, partly at least, by drawing on the reserves at the Bundesbank, not because this was appropriate from a conjunctural point of view, but because these reserves [the so-called Julius Tower] had allegedly been collected for this purpose.²

Built-in stabilizers in both taxation and transfers were relatively weak, largely because of the structure of direct taxation. Only one of the three sources of direct taxation was deducted at source. Although the share of the so-called wage tax increased as a proportion of direct taxation from 37% in 1955 to 62% in 1973, the "other assessed income" tax and corporation tax contained provisions for postponing payment which imparted a pro-cyclical bias to receipts.³

It was in 1961 as the result of the build-up of frustration in the Bundesbank at its inability to successfully control aggregate demand and inflation (with fixed exchange rates and persistent current account surpluses) that the question of anti-cyclical fiscal policy began to be debated in the government. In its annual reports and in the 1961

1 For a detailed analysis see pages 306-9, 312-9 of Wayne W. Snyder, "Measuring the effects of German budget policies 1955-1965", Weltwirtschaftliches Archiv, 104 (1970), 302-324.

2 Hansen, Fiscal Policies, 1969, p.240.

3 SVR JG, 1965/66, Z 103-105.

Memorandum on Price and Wage Movements, the Bundesbank argued that coordinated fiscal and monetary policy was a necessary condition if inflationary over-heating was to be contained. A cautious and guarded discussion of the possibilities and limitations of conjunctural fiscal policy appeared as part of the 1961 Finanzbericht. The assessment conceded the theoretical case for such a policy but emphasised the practical difficulties in implementation not only because of the structural determinants of a high proportion of categories of government spending and taxation and the decentralised system of public investment spending but also because of the influence and timing of political objectives. Two possibilities for improvement were mooted: (i) closer timing of tax assessment and payment and (ii) use of public investment as an anti-cyclical tool.¹

In the upswing from 1963, the Bundesbank stuck to its externally oriented interest rate policy. The overheating was exacerbated by an expansionary fiscal stance. Pre-election tax cuts which took effect at the height of the boom at the beginning of 1965, and spending increases were the culprits. The peak in 1965 was associated with a much reduced surplus on the current account - for the first time in over a decade, the deterioration of the current account in the late upswing threatened to push the payments position into deficit - basically because of the trade cycle trough of trading partners. This along with the high interest rates prevailing abroad meant that monetary policy had a chance to bite. The sharp

1 Bundesregierung, Finanzbericht, 1961, p.87.

increase in interest rates (pushed higher by the increase in government borrowing) combined with rising unit labour costs to induce a rapid contraction of investment.

The effectiveness of the policy of tightening credit was both cause and reflection of the turn to pessimism of business expectations and the slowdown of the economy into the first post war recession. The private investment-led downturn from 1966 resulted in the deepest recession in the period, with the volume of investment falling for two years consecutively, in the second by more than 10%. The sharp cut-back in government investment by more than 8% in 1967 reinforced the decline in private investment. Export demand continued to grow strongly in both these years confirming the domestic origins of the first real recession experienced by West Germany.

The most striking aspect of the 1966-67 recession was the extent to which private sector employment was cut in response to the fall in demand. The 1966-67 trough was the first occasion on which output had fallen since the currency reform, and the employment response was of a different order of magnitude from its past pattern. Before 1967, downswings were associated with slightly falling productivity growth as employment growth decelerated more slowly than output. Labour hoarding occurred. But in 1966, the sharper than usual slowdown in output growth led to an actual fall in the level of employment. The following year, output fell and employment fell by much more: the employment elasticity with respect to output jumped to 3.4 as the result of widespread labour-shedding.

The fall in capacity utilization in manufacturing to less than 80% was sufficient (a) to force small labour-intensive firms out of business; (b) for firms to dismiss workers who would otherwise have been carried through a period of slack; and (c) for firms to introduce changes in work practices and technology to increase productivity.¹ The recession was referred to as a Reinigungskrise, a cleansing crisis.²

Aided by new technologies and rationalization measures in the organization of work, capital pursued, with the introduction of new systems for job evaluation and performance appraisals, a policy of using labour more intensively and economically. This resulted in a general intensification of work and increase in work loads and took on many varied forms.³

Using the reported illness frequency as a proxy for the attitude of employees, the Bundesbank noted that after rising to a disturbing level in the early 1960's, this type of absenteeism fell after 1966.⁴ It was also noted that the recession had the effect of improving the reallocation of labour between industries and sectors and revealed cases of over-investment and misinvestment.⁵

Unemployment rose steeply with the full extent masked by the omission from the unemployment data of the flow of immigrant labour out of Germany. Registered unemployment rose

1 Giersch, Growth, Cycles and Exchange Rates, 1970, pp.16,17.

2 SVR JG, 1969/70, Z 78.

3 W. Müller-Jentsch, "Strikes and strike trends in the Federal Republic of Germany, 1950-1978", Industrial Relations Journal, 12, 4 (1981), p.48.

4 Bundesbank, Annual Report, 1962, p.3, 1966, p.10.

5 Bundesbank, Annual Report, 1966, p.10.

to 2.1% of the domestic labour force from 0.8% in 1964-5; approximately 4.5% if foreign and domestic workers who lost their jobs but did not register are included.¹ The rapid effect of the fall in investment demand through to output and employment was unexpected as noted above. By mid 1966 the Bundesbank was throwing its policy measures into reverse recognizing the danger of the spread of a "paralysing pessimism".² But upward stimulation rather than just accommodation of an upswing was a new experience for the Bundesbank and the impact of its measures from early 1967 was weak.

2.3 Adoption of a package-deal approach to stabilization

The role of pro-cyclical fiscal measures in provoking the credit squeeze which led to the recession along with the depth of the recession brought to a head the debate on fiscal policy and in 1967, the Stability and Growth Law was passed. Its major policy implications were for the conduct of fiscal policy and for the better coordination of fiscal policy as between the three fiscal tiers (Bund, Länder, and Gemeinde). The Law obliges Federal and Länder governments to respect the requirements of the balance of the national economy and provides for closer control over Länder and Gemeinde expenditure. Little progress was made on procedures to ensure improved coordination of fiscal and monetary policy. However,

1 Giersch, Growth, Cycles and Exchange Rates, 1970, p.25.

2 Bundesbank, Annual Report, 1966, p.11.

the Law certainly stream-lined the fiscal apparatus and provided a range of specific techniques for dampening cyclical fluctuations.

The principle innovation of the bill was the specific powers it gave to the Federal government to build up and run down funds for counter-cyclical policy intervention (Konjunkturausgleichsmaßnahmen). The federal government can raise or lower income taxes by up to 10% of the tax (by decree for a maximum period of one year). The revenue is paid into a stabilization account at the Bundesbank and funds can be drawn down for use in stimulating demand in a period of slack. Similarly the power to give investment subsidies of up to 7.5% of the value of investment goods in a period of slackening demand was granted; as was the right to reduce or cancel the usual depreciation provisions in a period of excess demand.¹ However, for countering a period of depressed activity rather stringent limits to this increased fiscal flexibility remained since once the stabilization fund was exhausted, the government could not borrow from the Central Bank to finance additional expenditure - it had to borrow on the open market.

Despite the rather narrow extension of the legal scope of fiscal policy incorporated in the Law, it registered an important change of attitude toward intervention in the trade cycle and thereby extended the political scope for using the techniques available. The law formally incorporated the obligation of the government to secure low inflation, low

1 Hansen, Fiscal Policy, 1969, pp. 213,218.

unemployment. adequate growth and external balance.¹

Nevertheless it is important to note that the lexicographical ordering of the Bundesbank obligations with its primary requirement to maintain the value of the currency was unaltered by the law. The Bundesbank is institutionally and in practice independent of government direction. The result of these institutional arrangements, and in particular, of the independence of the Central Bank, is that even after the introduction of the Stability and Growth Law, an underlying deflationary bias in policy making remained.

The provisions of the law were used in 1967 with two stabilization programmes, the first of which was introduced before the law was formally passed. The first package consisted of the introduction of special depreciation allowances for investment and a boost to government spending of 0.5% of GDP; the second package represented an injection of about twice this. Yet in spite of the euphoria of policy makers fostered by the strength of the upswing in 1968-69 as to their ability to eliminate cyclical fluctuations, the evidence that the fiscal measures were decisive in generating the recovery is not decisive (see Table 6.9 above). Once again the rhythm of the foreign trade cycle played a role in

1 These objectives were quantified by the government in early 1968 as follows: full employment meant an unemployment rate of 0.8%, low inflation meant 1% p.a., external equilibrium was defined as a surplus on goods and services account of 1.5% of GDP, and adequate growth was a trend growth rate of 4% p.a.. (OECD, Economic Outlook, December 1968, p.53).

turning the economy around.¹

However, it seems that the government's temporary depreciation allowances for investment did have the effect of altering the timing of investment decisions, leading to the bringing forward of a significant amount of investment from 1968 into the second half of 1967. The anticipation of higher prices of investment goods associated with the replacement of the turnover tax by a value added tax from the beginning of 1968 also played a role in the shifting of investment.² Moreover, an indirect effect of the new policy optimism may have been to bolster business confidence in the stability of future demand and growth. The investment boom was of unusual intensity, though the sharp 1966-67 decline in investment meant that the rate of growth of the capital stock was still falling in 1969.

The introduction of the Stability and Growth Law brought fiscal policy in to joint responsibility with monetary policy for the management of aggregate demand over the cycle and the optimism that surrounded the new policy framework was perhaps partly responsible for the Bundesbank's relaxed attitude to the excessive build-up of liquidity in 1968. With foreign interest rates keeping domestic rates low, and with the rapid turn around from welcome recovery to serious overheating coinciding with the additional problem of large capital

1 A. Oberhauser, "Geld- und Kreditpolitik bei weitgehender Vollbeschäftigung und mäßigem Preisanstieg, 1958-1968", in Deutsche Bundesbank (Hrsg.), Währung und Wirtschaft in Deutschland 1876-1976, (Frankfurt, Knapp, 1976), pp.626-8.

2 OECD Economic Outlook, July 1968, pp. 10,30.

inflows, a revaluation of the D-Mark was necessary. There was a quasi-revaluation in the autumn of 1968 operating only on export and import prices through export taxes and import subsidies and a true realignment in October 1969.

The extended period over which profitability improved in the post-1967 upswing and the subsequent compression of the wage-lag (i.e. the lag of wage income behind profit income) resulted from the interaction of new policy measures and trend developments. With Erhard's resignation and the direction of economic policy in the hands of Karl Schiller, the original proposal of the Council of Experts was adopted for a form of voluntary incomes policy to coordinate wage and price-setting with the requirements of demand management. The recognition of the problems for the management of aggregate demand created by capital inflows from abroad, and the inflexibility of fiscal policy, plus the admission that the growth cost of lower inflation was rising prompted the notion that an incomes policy was necessary to ensure macroeconomic stability.

As will be discussed in more detail in chapter seven, it was in fact the Bundesbank in its Memorandum on Price and Wage Movements presented to the government in early 1960 (The so-called Blessing Memorandum), which outlined the limitations to short term economic management via aggregate demand in a tight labour market. They outlined a process through which labour market tension combined with industry-wide bargaining and the prevalence of mark-up pricing would lead to a wage-price spiral which in the short run could produce further instability on the demand side: the expectation of rising real

product wages in the sectors unable to protect their profit margins would tend in a period of overheating to raise the demand for labour-saving investment.¹ Under these conditions, the Bundesbank suggested that aggregate demand policy was a blunt instrument for securing price level stability. The situation, it was feared, could force:

the adoption of drastic measures to check upward price tendencies ... [with the result that] a definite recession might set in as the inevitable concomitant.²

The Bundesbank argued that the institutional structure of wage and price setting and the openness of the economy to demand pressures from abroad meant not only that monetary policy had to be reinforced by fiscal policy to effectively control aggregate demand but that the cooperation of unions and employers in wage and price behaviour was an essential complement to the aggregate demand measures. As liberal as possible an import policy was also proposed as a useful adjunct.³

The so-called "Concerted Action" procedure was introduced in 1968 and altered the dynamics of the wage bargaining process. The union leadership agreed to cooperate in wage moderation as part of a package deal including increased government expenditure. As a result of this agreement, collective bargaining wage rates in 1968 were settled at moderate rates (less than was typical of comparable phases of

1 Bundesbank, Memorandum on Wage and Price Movements, 1960, p.11.

2 *ibid.*, p.11.

3 *ibid.*, p.11.

earlier cycles) to run for longer than usual in exchange for improved social benefits especially with regard to employment protection in situations of rationalization.¹ The agreements of 1968, however failed to produce a balanced growth of incomes in the upswing. Instead of shortening the typical lag of wage growth behind the recovery of profitability, the lag was lengthened. Prior to the revaluation in 1969, pre-tax profits rose very rapidly in 1968-69 as the undervalued exchange rate meant that prices were not cut in line with falling unit costs. Post-tax profits were further inflated by the lag of 1-1 1/2 years in the payment of corporation tax.²

The deviation of the agreement between the unions and the employers from the wage increases that could have been secured through free collective bargaining, in conditions of rapidly rising demand for labour generated tension between the leadership and union members. The well known wild cat strikes broke out and higher wage settlements were awarded than had been demanded. The result was a disillusionment of the unions with the benefits of an incomes policy:

The first round of overall regulation under the aegis of the stability and growth law ended with deep disappointment for the unions; they felt cheated. The wild cat strikes of autumn 1969 appear to have signaled a change of strategy; from now on the employees are set on an aggressive nominal wage policy.³

The problem of maintaining an incomes policy beyond the

1 SVR JG, 1969/70, Z 78.

2 SVR JG, 1969/70, Z 81.

3 N. Kloten, "Erfolg und Misserfolg der Stabilisierungspolitik (1969-74)" in Deutsche Bundesbank, Währung und Wirtschaft, 1976, p.685.

first stage of an upswing appeared intractable. The Council of Experts in their 1970-71 report highlighted the dangers inherent in the formulation of wage agreements in the context of an incomes policy which run counter to the wage expectations of union members:

[U]nions cannot ignore such expectations - otherwise there is the danger that the unions will lose their leadership in wage negotiations because spontaneous and successful strikes can spread rapidly resulting in employers thinking of the short term and under this pressure giving in, thinking more about the present than the future.¹

2.4 Reversion to the primary role for monetary policy

In the early 1970's, fiscal policy was overlaid with the social policy aspirations of the new SPD government. Anti-cyclical policy gave way in 1971-72 to the government's priorities of increased government expenditure on public services.² The limited flexibility of fiscal policy in conforming to the requirements of a counter-cyclical policy was apparent. As a result of what they saw as the failure of the "package-deal" approach to macro-economic management, the Bundesbank became more convinced that aggregate demand, the control of which was seen as a necessary condition for controlling inflation, could only be effectively managed if the efficacy of monetary policy was assured. This implied that exchange rates be allowed to float.

From March 1973, the D-Mark was floated and the foreign

1 SVR JG, 1970/71, Z 274.

2 Kloten, "Erfolg und Misserfolg", 1976, pp.663, 665-6.

exchange inflow quelled.¹ This provided the opportunity for the Bundesbank to impose a very restrictive policy in an attempt to squeeze aggregate demand and inflation in the early upswing. By a sharp increase in interest rates and minimum reserve ratios and rigorous restrictions on refinancing facilities, the Bundesbank reduced both the demand and supply of credit. The banks' free liquid reserves were cut virtually to zero.

The latter measure was necessary because of the change in bank behaviour in the early 1970's: credit expansion no longer reacted to changes in free liquid reserves in the traditional manner. Previously, a cut in free liquid reserves had resulted in the banks liquidating loans and reducing their net acquisition of bonds. This had an immediate effect on bond yields. There was a secondary effect on credit conditions as the banks became very cautious about entering new loan commitments.² However, this dual channel failed to operate in the early 1970's as German companies borrowed abroad to an unprecedented extent.

Thus it was not only speculation which counteracted monetary policy on this occasion but large-scale financial

1 The Bundesbank's monetary policy was frustrated for the three years to 1972 by inflows of foreign capital. Eventually the Bundesbank introduced the requirement that some percentage of borrowing abroad (apart from trade credit) had to be lodged interest free with the Bundesbank. The proportion was raised from 40% in the spring of 1972 to 100% a year later. (A.S. Courakis, "Monetary thought and stabilization policy in the FRG 1960-1976", in S. Frowen, A.S. & M. Miller, Monetary Policy and Economic Activity in West Germany, (London, Surrey University Press, 1977), p.34).

2 *ibid.*, p.34.

borrowing abroad by German companies. Earlier, such borrowing had been limited to a number of large domestic enterprises and multinational corporations. But in the early 1970's it was much more widespread and, given the close relationship between enterprises and banks, businesses were being advised by their banks to borrow abroad. This activity offset the restrictive impact of the Bundesbank's policy instruments which operated on the banks' free liquid reserves.¹ With the opportunities for borrowing abroad, "[t]he banks now regarded the free liquid reserves not as a necessary reserve, but rather as an unused expansion potential permitting a further, and even perhaps stronger, growth of lending".²

With the adoption of the highly restrictive anti-inflationary course by the Bundesbank in the spring of 1973, fiscal policy fell into line. The government introduced a comprehensive package of restrictive measures: the most important of which were an investment tax, suspension of degressive depreciation on new private investment and special depreciation allowances on housing, a 10% income tax surcharge and cuts in public expenditure of 0.2% of GDP.³

3. Conclusions

A number of themes emerge from the overview of West German economic development from 1955 to 1973. In terms of

1 OECD, Monetary Policy in Germany, (Paris, OECD, 1973), pp.64-5.

2 Bundesbank, Annual Report, 1973, p.3.

3 OECD, Economic Outlook, 1973, pp.71-2.

performance, the notable feature was the substantial slowdown in Germany's growth rate, both compared with its own earlier achievements and with those of the other major European economies. Secondly, is the two-edged nature of Germany's export orientation. Whilst reliance on export sales operated to restrain price and wage increases as discussed both here and in chapter five, the export surplus created problems for managing monetary policy and aggregate demand in the late 1950's and 1960's. This resulted in higher than desired inflation through two routes: from the aggregate demand pressure and the liquidity associated with the export surplus.

In terms of policy, the 1965-69 cycle was a watershed. The 1966-67 recession, which was the outcome of the weakening of the growth trend combined with policy errors and the anxiety to control inflation, had the effect of shifting the balance of views in the government and in the Bundesbank toward the need for the authorities to secure an adequate level of employment through fiscal and monetary expansion. The obligation to secure high employment and the Keynesian tools necessary to this goal were incorporated in law. It was also recognized that aggregate demand instruments alone - partly because of their unreliable effect on private investment - were incapable of ensuring the attainment of adequate growth without associated rising inflation. In the context of tight labour markets and the external constraints on the use of monetary policy, there was widespread acceptance of the role of a voluntary incomes policy.

However, the success of the package deal approach to policy was limited both by the turbulent state of the world economy and by the difficulties at home in securing the balanced growth of incomes in the upswing. The opportunity to revalue and float the exchange rate, and to push interest rates up sharply was taken by the Bundesbank. The cooperative incomes policy experiment was displaced by the use of aggregate demand policy in an attempt to put a stop to wage/price behaviour which was seen to endanger both the objective of stable inflation and of adequate investment. The Bundesbank and the government made "the most determined attempt at stabilization since the war"¹ with the restrictive policies in early 1973. Over the whole period, there was an increasing tension between the fear of inflation and of inadequate growth and investment and it was in this context that discussions about distributional shares and conflict occurred.

1 Bundesbank, Annual Report, 1973, p.28.

Chapter Seven

Major Economic Actors: The Evolution of their Views about Distribution

1. Introduction

Concern with inflation played an important role in economic policy making in West Germany from its formation in 1949. The heavy weight placed on the control of inflation as a policy objective is frequently linked with the German experience of hyperinflation in the Weimar period and with the repressed inflation from 1945 to 1948. The different manifestations of inflation in these two episodes perhaps lies behind the perception of inflation both as a problem of real shortage and as a monetary phenomenon. For it seems that it was the concern with shortage in general rather than with excess demand resulting directly from increases in the money supply that informed the view of inflation which was articulated in 1956 by the Bundesbank.

Decisive importance is attached here to wage increases, which for some time have been far exceeding the rise in overall productivity and therefore establish on the national product nominal claims which can be met in goods only in so far as other claims remain unsatisfied or residual additional income is not spent but saved, which is by no means automatically the case.¹

The following year, the Bundesbank pointed to the connection between workers' nominal claims on national product and the bargaining stance of the trade unions:

Thus by extreme exploitation of their position of power, the trade unions might continue to succeed in enforcing wage increases which would go beyond the rise in

1 Bundesbank, Annual Report, 1956, p.8.

productivity, and hence at least tend to raise prices.¹ Such a "competing claims" conception of inflation where the claims on real resources expressed by employees through money wage bargains are incompatible with the real wage available to them as reflected in business pricing decisions, led to an explicit concern with the factor distribution of income. The Bundesbank identified inflation and/or a decline in profitability as the possible outcomes of "competing claims". It drew attention to the detrimental effects both for employment and for the self-financing of investment of the fall in profit margins associated with wage increases in excess of labour productivity growth.²

The Bundesbank pursued this argument in its 1960 Memorandum on Price and Wage Movements (Blessing Memorandum) and proposed a productivity oriented wage policy. The Council of Economic Experts established by the Bundesrat (the upper house in the German parliament) in 1963 developed a similar analysis in somewhat more detail and it formed the basis of a series of proposals on wage guidelines: the cost-neutral wage policy of 1964, the "framework pact" of 1967, the 1969 strategy to smooth cyclical fluctuations in income distribution, and finally in 1972, a scheme for increasing labour's share of national income at the cost of a higher variance through linking wage increases directly to actual profits received. The 1972 proposal represented a change of view from exclusive concentration on the "stability and growth

1 Bundesbank, Annual Report, 1957, p.45.

2 Bundesbank, Annual Report, 1956, p.16.

conforming distribution" to the possibility that a more just distribution might be necessary to reduce social conflict.

In a Memorandum in 1960, the Scientific Advisory Body to the Economics Ministry noted that the source of the wage policy conflict situations in virtually all of the industrial countries since the war was in large part the attempt to achieve consistency between two objectives: a just distribution of income and the maintenance of monetary stability.¹ It pointed out that a productivity-oriented wage policy would be unlikely either to ensure a stable price-level or to solve the problem of income distribution. In an analysis very close to the theory of Joan Robinson, the Beirat stated that little change in distribution would emerge from a wages policy as long as wage-earners spent the bulk of any increment in their income. With a given propensity to invest ("animal spirits") on the part of firms, the profit margin was determined by the self-financing requirements of businesses and they would simply put up their prices to ensure such a profit margin.² If part of wage increases were saved, "it would lead directly to a more favourable distribution of income for the wage and salary-earner and in the course of time to a shift in the distribution of property".³

1 Wissenschaftlicher Beirat beim Bundeswirtschaftsministerium, "Gegenwärtige Möglichkeiten und Grenzen einer konjunkturbewussten Lohnpolitik in der Bundesrepublik Deutschland", Gutachten vom 21. Februar 1960 reprinted in Sammelband der Gutachten von 1948 bis 1972, (Göttingen, Schwarz, 1973), pp.395-409.

2 Wissenschaftliche Beirat, 1960, Z 13-16, in Sammelband, 1973, pp. 400-402.

3 *ibid.*, Z 30 in Sammelband, 1973, p.407.

Toward the end of the period during which Ludwig Erhard dominated government economic policy, he raised the question of distribution explicitly. In 1962, Erhard called on industry and labour to exercise self-restraint in price and wage policies to prevent German goods from being priced out of the market. "Trade unions, he asserted, should not attempt to redistribute the nation's wealth by incessant new wage demands".¹ However, in 1966 the new economics minister, Karl Schiller, introduced the notion of social symmetry to refer to the need to coordinate the pattern of distribution over the cycle so as to minimize the danger both of an inflationary spiral and of downward instability.

No explicit normative distributional aim was included in the statement of policy goals in the Stability and Growth Law of 1967 and on different occasions, the government referred to growth and to the broader ownership of capital as means for resolving distributional conflict.

The explicit objective of the DGB's expansive wage policy announced in 1954 was an increase in the wage share. Through the 1950's and 1960's, union rhetoric retained the commitment to a shift in the functional distribution of income although in practice wage bargaining was for the most part based on a constant distribution formula of a nominal wage increase equal to productivity growth plus an allowance for expected (or past) inflation. In addition to its normative significance, the unions argued that an increase in the wage share would

¹ Gerard Braunthal, The Federation of German Industry in Politics, (Ithaca, Cornell University Press. 1965), p.279.

have a beneficial effect for the economy as a whole in two ways: first through the effect of boosting consumer demand and second, on the cost side, through the stimulus it would give to the introduction of higher productivity, labour saving equipment.

The employers' associations took the view that an adverse shift in the distribution of income would lead to lower investment because of the worsening of the financing conditions for investment. They advocated the Council of Experts' distribution-neutral, cost-neutral wage guidelines.

The objective of this chapter is to examine in some detail the evolution of the views on distribution held by the major economic actors. Attention will be given to statements concerning distribution and their incorporation in public policy and in the wage bargaining strategies of unions and employers' associations.

2. Distribution and Economic Policy: Bundesbank, Council of Economic Experts, Government

2.1 The Bundesbank

Of the public policy making bodies, it was the Bundesbank which first used the concept of distributive shares. As noted above, this was in the context of a discussion of the consequences of inflationary pressure deriving from the cost side. The Bundesbank identified two types of inflation which it referred to as demand inflation and cost inflation - and suggested (at first sight paradoxically) that by 1956 with virtually full employment, cost inflation was displacing demand inflation. Demand inflation was characterized by an

initial impetus from higher demand in the goods market which led to higher prices and profits, which in turn boosted investment and provoked further price rises. The Bundesbank implicitly assumed in discussing demand inflation that goods producers were close to capacity output and that labour was in elastic supply.

The initiating factor in cost inflation was either an increase in unit labour costs or in the cost of materials. An example of the latter was the increase in the "administered" prices of coal and steel in 1956.¹ However, the primary emphasis was placed on rising unit labour costs which the Bundesbank viewed as stemming from the tightening of the labour market. The Bundesbank stated:

In these circumstances the relatively easy position which the employed held in the struggle for wages and salaries remained due primarily to the great demand for labour, and not to the organized power of the trade unions, as in the case of a typical cost-induced rise in prices.²

The Bundesbank argued that in a tight labour market, the lowest cost firms bid up nominal wages so as to secure sufficient labour. The coordinated leader-follower structure of wage bargaining then operated to generate wage increases of a similar extent throughout the economy.³ In the context of buoyant product markets, the lower productivity firms and sectors where unit costs had increased were then to some extent able to pass on the higher costs in their prices. The

1 Bundesbank Annual Report, 1957, p.44.

2 *ibid.*

3 Bundesbank, Memorandum on Wage and Price Movements, 1960, p.10.

ensuing rise in the cost of living began to play an established role in the formulation of money wage claims. The result of this process was an instability in prices through a wage (low cost sector) - wage (high cost sector) - price - wage spiral. To prevent a rise in the consumer price index, the lowest cost sectors would have had to reduce their prices. Instead, they took the opportunity to boost their profit margins.

Businesses were able to do this because of what the Bundesbank referred to as "sociological" price rigidity - the propensity of firms to act in conformity with other enterprises in the same trade and the increased influence of industry associations - which operated to prevent price cutting.¹ The undervalued Deutschmark permitted this behaviour even in sectors exposed to import competition.

However, the Bundesbank suggested that the ability of businesses to pass on higher costs in their prices was influenced by the state of the product market with the result that profit margins would vary over the cycle. As exemplified by the inability of firms to protect their profit margins in response to an increased corporate tax burden² in a situation of slacker demand at home and abroad, mark-up pricing by businesses would be modified by the level of demand and by the competitive position of German firms in foreign markets. The progressive reduction of tariffs and quotas as well as cyclical downturns abroad were seen to result in increased

1 Bundesbank Annual Report, 1958, p.27.

2 Bundesbank Annual Report, 1962, p.11.

foreign competition.¹

In their conception, cost inflation differed most clearly from demand inflation in its self-limiting character. To the extent that higher unit labour costs were reflected in squeezed profit margins, they would result in a cutback in investment and the demand for labour or in a direct reduction in employment as high cost businesses were forced out of the market. The associated decline in the demand for labour would tend to neutralize the upward pressure on unit costs.² However, the Bundesbank doubted that investment demand would react sufficiently strongly to the lower profit margins so as to eliminate the inflationary pressure coming from the strengthened bargaining position of unions. Moreover, because of their concern that any reduction in investment would threaten the ability of German business to compete in the longer term, they raised the further possibility that higher employee savings would be a preferable method of dampening demand.

The Bundesbank's argument went further than this. They expressed the fear that should any endogenous reduction in demand be insufficient to eliminate the inflationary pressure, the authorities would be forced to undertake offsetting aggregate demand policies. The inflationary situation could force "the adoption of drastic measures to check upward price tendencies ... [with the result that] a definite recession

1 Bundesbank Annual Report, 1958, p.19; 1960, p.19; 1961, p.13; 1962, p.11.

2 Bundesbank Annual Report, 1958, p.25.

might set in as the inevitable concomitant".¹

In the light of these considerations, the Bundesbank came to the conclusion that holding the rate of money wage increases to the rate of productivity growth and thus preventing unit cost increases was the preferable solution. The Bundesbank's only technique for intervening in the wage and price setting process was through "moral suasion" in favour of wage increases in line with productivity growth. They also proposed consultations between the collective bargaining parties toward the same end, and supported measures to increase savings and imports to ease the pressure of demand. The latter policy of import promotion would also increase the pressure on firms not to increase their prices, and finally in a similar vein it was suggested that a stronger competition policy would help to discipline firms.

In an interesting comment on the longer run implications of the trend change in relative factor scarcities, the Bundesbank stated: "The time when the relative costliness of capital was made good by relative cheapness of labour is past. Labour has become scarcer, and wages have correspondingly risen, while the rate of profit is accordingly falling."² The Bank drew from this the policy implication that interest rates would have to be adjusted downward:

[t]he lowering of the rate of interest on capital is therefore an essential condition for the maintenance of a rate of investment high enough to save German industry from lagging behind in the technical changes which are

1 Bundesbank, Memorandum on Wage and Price Movements, 1960, p.11.

2 Bundesbank Annual Report, 1957, p.35.

taking place.¹

2.2 The Council of Economic Experts

It is not surprising that the Council of Economic Experts (SVR) with their task of providing an annual economic assessment of the economy including an analysis of medium-run developments would have dealt in more depth with the questions of growth, inflation and distribution.² To try to present a systematic account of the SVR's views as they relate to distribution, it is perhaps best to begin with their medium to long run model of distribution and then discuss the cyclical model. Attention will then be given to the Council's theory of price setting behaviour and investment. The Council appears to have adopted an analysis of wage-setting very similar to that of the Bundesbank outlined above. Finally, their policy proposals will be examined.

The Council of Experts talk in terms of a Solow-type neoclassical growth model in which the distribution of income reflects the demand and supply of factors of production. From such a view, arose the idea that given the relative supplies of the factors (and presumably the technology) a unique distribution of income was determined and that the exercise of market power could not alter this distribution, but would only

1 Bundesbank Annual Report, 1957, p.35.

2 A thorough survey of the Council of Experts' proposals on incomes policy by Gahlen and Liefert provides an excellent introduction to the Council's views about distribution. (B. Gahlen, & E. Liefert, "Die Vorschläge des Sachverständigenrats zur Einkommenspolitik", in B. Gahlen, (Hrsg.), Wachstumszyklen und Einkommensverteilung, (Tübingen, Mohr, 1974), pp.79-120).

lengthen the process of adjustment to it. More precisely, they argued that it was essential to explain to the groups with economic power that short term distribution-oriented strategies would bring no medium run advantage. Such strategies would be destabilizing, tending to increase the amplitude of the output cycle and increase inflation.¹

The idea that there is a unique full employment wage share is used in the context of a medium run steady state growth model. One story can be told using the Solow model which produces the result suggested by the Council of Experts: in a steady state growth model, under conditions of perfect competition with a given positive labour supply growth rate, and elasticity of substitution in production between labour and capital of less than one, the observation of a higher wage share could be consistent with the appearance of growing unemployment. Of course, this would not be a steady state equilibrium configuration. A lower profit share and rate would see the adoption of a more capital intensive technique, with higher labour productivity. In the absence of any increased willingness of businesses to invest (i.e. without an increase in the investment share), however, there would not be enough investment to equip the new additions to the labour force at the higher capital/labour ratio and the economy will not be able to remain at the higher wage share, higher capital intensity configuration. With atomistic labour markets, the reversion to the original equilibrium would be brought about through the bidding down of

1 SVR JG 1972/73, Z 438, 468, 490.

the wage by the labour unemployed for lack of equipment. The capital labour ratio will fall back to the original level and the system would revert to the unique full employment, steady state rate of growth and distribution of income.¹

Equally self-defeating as the attempt by unions to secure a higher wage share with full employment, would be the attempt by businesses to secure higher profits and higher unemployment.² Any attempt to return to the situation of the 1950's with higher profits and unemployment would, claims the SVR, require a reduction of effective demand at home and would result in German firms supplying more goods abroad. Such a policy would fail either because the necessary expansion of foreign markets would not be forthcoming or because of the political opposition of trading partners.³

Consistent with this model is the suggestion by the SVR that a way in which the wage share could be increased in the long run that was compatible with the maintenance of full employment (i.e. a steady state equilibrium configuration) was through an increase in employee saving.⁴ In the Solow model a higher aggregate savings propensity implies a new steady state equilibrium at a higher wage share (assuming an elasticity of substitution between capital and labour of less than one) and a higher capital-intensity. Adjustment occurs through the

1 This was not an adjustment process envisaged in the original model, where smooth adjustment with continuous full-employment was assumed.

2 SVR JG, 1967/68, Z 252.

3 SVR JG, 1967/8, Z 253.

4 SVR JG 1967/8, Z 255.

effect of higher savings in reducing the interest rate and thus the cost of capital. A less optimistic assessment of the feasibility of this mechanism, in a world in which interest rates are subject to influences quite separate from the simple supply and demand of investible funds, is provided in a later report.¹

But the SVR does raise two feasible routes through which a higher equilibrium (i.e. full employment) wage share could be established. The first, through a higher investment share is formally equivalent in the neoclassical model to the increase in savings discussed above. However, an exogenous increase in the investment share bypasses the requirement for adjustment to occur in a non-neoclassical world through the creation of an incentive to increase investment via a fall in the rate of interest. The second route is via a drop in the growth rate of the labour force. In either case, labour would, as they put it, in the first instance attract a scarcity rent.² This in turn would provoke the choice of a more capital intensive technique and lead to a higher level of labour productivity. Along the adjustment path, real wage growth would exceed labour productivity growth. "In this case - and only in this case - can there be a sustained growth in real wages faster than labour productivity, without the cost being the volume of employment."³

The medium to long run analysis by the SVR is consistent

1 SVR JG, 1970/71, Z 237.

2 SVR JG, 1967/68, Z 254.

3 SVR JG, 1967/68, Z 254.

with the Solow framework when the plausible assumption is made of inelastic substitutability in production. Implicit in the analysis is also the assumption that any technical progress is neutral with respect to distribution, i.e. Harrod-neutral. Alternatively, the propositions could be interpreted using the steady state growth model which differs from the standard Solow model by having fixed proportions (clay-clay) vintage production technology. In this case changes in relative factor availability due either to a change in saving or investment behaviour or to a change in the growth rate of the labour force operate to change the equilibrium aggregate capital intensity and average labour productivity through their effect on the age structure of productive capacity in use. Instead of a switch to more capital intensive methods throughout industry, there would be a concentration of the available labour on the newest, most productive equipment. The early scrapping of old equipment would have the effect of raising the capital/labour ratio and the wage share.

The putty-clay model combines the more plausible aspects of each production hypothesis and will also produce results consistent with the Council of Experts' views as long as the elasticity of substitution between capital and labour in new investment is quite low.¹

Thus in the medium run, the Council appeared to see the path of growth and distribution as fixed along the lines suggested by Solow-type steady state growth theory. The economic power of trade unions and employers can exacerbate or

1 See chapter one.

perhaps even create cyclical fluctuations about the growth path or along the traverse from one growth path to another. They did not acknowledge that monopoly power could affect the steady state distribution along the lines discussed in chapter one. However, despite raising the possibility that the underlying supply relationships of the economy could be such as to suggest a rise in the wage share, the Council in its short run analysis and in policy proposals implicitly assumed that a constant factor distribution of income and rate of profit was the stability-conforming distribution. In other words, the notion of a unique full employment wage share dominates the more detailed analyses.

The cost-neutral wage policy proposed in its first report (published in 1964) is the policy representation of this and lies behind virtually all of the other policy proposals. The starting point is paragraph 248 which states that with given competitive conditions and in monetary equilibrium, there is a particular relationship between prices and costs: "the problem of monetary stability with full employment is therefore identical with that of stabilization of the cost level".¹

The cost neutral wage policy was the synthesis of an earlier public discussion begun by the Bundesbank in its Memorandum on Price and Wage Movements, where wage policy was couched in terms of productivity oriented wage increases. Once taxes, non-wage labour costs, capital costs and terms of trade effects were taken account of money wage increases in

1 SVR JG, 1964/65, Z 248.

line with productivity growth were not a sufficient condition for constant unit costs. Increases in unit capital costs for example, would reduce the scope for cost neutral wage increases.¹ Hence the Council was arguing for a constant share of wages in value added (corrected for changes in self-employment²), whilst requiring that labour's share in output would fall if necessary - in response for example, to a deterioration in the terms of trade.

At the cyclical peak in 1969, the Council claimed that the wage share was the same as it was at the previous peak in 1965 and that there was therefore no scope for any increase.³ Value-added wage shares were calculated from the first report in 1964/5.⁴ From 1965, the Council calculated the scope for real wage increases in view of changes in taxes, social security contributions, the terms of trade and in what they refer to as the wage aggregation (Lohnsumme) effect.⁵ The latter referred to the impact on average wages of shifts to high wage (and productivity sectors) - in 1964, they calculated that this reduced the scope for real wage increases within sectors by 0.5% as compared to the growth of average productivity of 5%.⁶

1 SVR JG, 1970/71, Z 233.

2 See chapter four.

3 SVR JG, 1969/70, Z 226; Gahlen and Liefert, "Die Vorschläge", 1974, p.103.

4 SVR JG, 1964/65, Z 122 Table 35.

5 SVR JG, 1965/66 Z 99, JG 1969/70, Table 4.

6 SVR JG, 1965/66, Z 99.

The consequences of money wage increases in excess of productivity growth which cet. par. would raise unit costs are expressed using a set of theories about wage setting, pricing and investment behaviour similar to that of the Bundesbank outlined above: a "competing claims" theory of inflation, the view that there will be times when businesses cannot pass on cost increases with the result that profit margins will be squeezed, and the notion that investment is cet. par. positively related to profit margins and profitability.

The Council stated:

To be inflationary is an attempt for everyone to have economic power; they can try to put through claims for which given all other claims and the market cannot be secured without contradictions arising.¹

In the early seventies, the Council laid particular emphasis on the additional inflationary pressure that was being created by the increased claims of the government on resources.

Pricing Behaviour

In the Council's discussions of pricing behaviour there is a tension between their view of how prices should be set in a market economy and how they are actually set. This results at times in confused analysis. For example, in relation to the influence which price developments abroad have on domestic prices, the SVR notes that only in conditions of perfect competition in homogeneous goods will there be no price differentials between the same goods within and across countries. They state that German trade is not of this kind - being concentrated in sectors with differentiated products

1 SVR JG, 1970/71, Z 249.

sold in imperfectly competitive conditions - and yet they exclude the possibility that businesses could discriminate between the home and export market in pricing.

The assumption of an absence of price discrimination led to the conclusion that the development of export prices conforms to the requirements of price stability only when it reflects the development of productivity in the export sector. Thus export price rises which are the result for example of German firms following the price leader in the foreign market, are deemed to be inconsistent with price stability in Germany since it is assumed that the German producers would put up their domestic prices in line with their export prices. "An examination of productivity in the total economy and in the export sector lead to the conclusion that the prices of exports must fall, if the overall price level in the economy is to remain unchanged".¹

There seems to be no logic to this unless an extra line of argument is appended: viz. the increased profits earned on export sales lead either directly to additional money wage claims which in turn raise unit costs at home or to additional spending at home by the companies which (at full employment) pushes up prices for domestic goods and/or push up money wage claims. These mechanisms are not integrated by the Council into their view of the "international connection of prices" (der internationale Preiszusammenhang). This results in a rather narrow interpretation of the stabilizing effect of a revaluation. Again it is the direct effect of the revaluation

1 SVR JG, 1967/68, Z 446.

on D-Mark prices if foreign prices are to remain unchanged which is stressed - D-Mark prices of exports and of those goods sold at home would fall if dollar prices were to remain unchanged. The influence on domestic prices of an appreciation of the Deutschmark through the effect of reducing the D-Mark price of imported raw materials and thence of production costs is not mentioned.

The Council introduces another concept for the analysis of pricing behaviour, the scope for raising prices (der Preiserhöhungsspielraum). Willeke defines the term as the ability of the supplier to increase the price without the quantity demanded falling as compared with the reference situation.¹ But it is unclear from the Council's use of the concept whether in response to a price increase it is the quantity demanded which must not fall or the market share.² It was the unutilized scope for price rises which in the view of the Council resulted in German exporters putting up their foreign currency prices in response to the 1961 revaluation. German exporters, states the SVR, were forced to fully utilize the scope for price rises and after the revaluation were not able to further increase their market share.³ In this particular discussion there is a hint that prices may develop differently at home and abroad - in the couple of years following the revaluation it is claimed that the revaluation

1 F-U. Willeke, "Preiserhöhungsspielräume und Aufwertung bei heterogener und oligopolistischer Struktur der Export- und Importmärkte", Weltwirtschaftliches Archiv, 108 (1972), p.6.

2 For example, SVR JG, 1967/68, Z 436.

3 SVR JG, 1967/68, Z 437.

certainly had the effect of reducing the extent to which export goods prices were increased as compared with producer prices at home.¹ The export tax imposed as part of a quasi-revaluation in 1968 was passed into German export prices within six months.²

Without developing a consistent theory, the Council imply at various times that producer prices are basically influenced by cost developments at home³ but that the timing of price rises depends on the relative pressure of demand at home and in export markets⁴ and that through an unspecified mechanism export prices affect German domestic prices. In terms of import prices, they argue that until and including the 1961 revaluation, importers of manufactures were adjusting their prices downward into line with the German prices. From 1963, the prices of imports and import substitutes moved in line.⁵ In particular, the 4% import subsidy of November 1968, had been fully offset by import price rises six months later.⁶

Investment goods were singled out on a number of occasions as facing price-inelastic and or income elastic demand which enabled suppliers to mark up their foreign prices in response to higher labour and materials costs. Perhaps the underlying view was that the maintenance of market share in

1 SVR JG, 1967/68, Z 438.

2 SVR JG, 1969/70, Z 63.

3 SVR JG, 1968/69, Z 239.

4 For example, SVR JG, 1967/68 Z 458; JG 1968/69 Z 110.

5 SVR JG, 1967/68, Z 441.

6 SVR JG, 1969/70, Z 63.

such goods was a function of both price and profitability - since profits were necessary for research and development and the like. Especially in relation to goods other than capital goods, attention is drawn to the constraints on the ability of firms to raise their prices sufficiently to protect profit margins, both for exports and in the face of strengthening import competition.¹ As early as 1964, the Council identified the limited scope for passing on cost increases due to international competition (exacerbated at that time by the effects of the revaluation) as a contributory factor in the fall in the profit share between 1960 and 1962.²

Investment

Distribution plays a dual role in the Council of Economic Experts' propositions about fixed investment: through its influence on the conditions for financing investment both internal and external, and on the incentive to invest. In their first report in 1964, the Council stated that it was necessary to prevent the 1961 revaluation (in conjunction with the development of wages) "from so reducing the profit margin that the preparedness of firms to invest would be endangered".³

Although the Council never estimated the quantitative importance of each of the factors they mention as influencing investment, their views are quite consistent throughout. The investment model implicit in their reports is an accelerator

1 SVR JG, 1970/71, Z 52.

2 SVR JG, 1964/65, Z 15.

3 SVR JG 1964/65, Z 41.

based on the rate of capacity utilization modified by the cost of capital and by expected profitability. Expected profitability was viewed as largely a function of past profits. They also consider explicitly the role of shortages of qualified labour, increasing competition for markets and technical progress as determinants of "rationalization investment".¹

The mechanisms proposed by the Council through which profits affect internal and external finance are uncontroversial, although the stress on the great importance of internal finance reflects the German institutional structure. The most detailed discussion of the relationship between investment and profitability occurs in the 1970/71 report - an occasion on which concern with ensuring sufficient investment was particularly evident. The Council stated: "Attempts to promote broad investment are in place but the necessary change in the distribution of income cannot be achieved in a few years."¹ In view of this problem, they suggested that investment would be inadequate if firms did not accept that the fall in profitability required a greater reliance on external finance. They also proposed that to partially offset the effect on profits of the higher wage share, the government should reduce taxes on firms thereby improving both self-financing and equity financing

1 Hans Hofmann, "Prognosen und Erklärungen des SVR zur Entwicklung der Ausrüstungsinvestitionen in der BRD", Zeitschrift für Wirtschafts- und Sozialwissenschaften, (1974), 123-150, pp. 125, 149.

1 SVR JG 1970/71, Z 234.

conditions. This would be complemented by measures to encourage higher employee savings. The idea was that the additional equity finance would come in part from higher employee savings, thus reducing the dependence of investment on the volume of profits. However, the Council was not optimistic about the possibilities of the successful implementation of such a strategy in a market economy in which there were international investment opportunities.²

In their response to the DGB's medium term projections for the period 1971-1975, in which a substantial further rise in the wage share was forecast, the SVR pointed out that such a shift in distribution was likely to be incompatible with the rate of investment projected.³ The Council also emphasized that an improvement in financing conditions was a necessary but not sufficient condition for a recovery of investment - initially and until growth and profit expectations improved, easier financing conditions would be reflected in the consolidation of balance sheets - not the stimulation of investment.⁴

Policy

The policy proposals of the Council regarding the evolution of incomes were addressed on the one hand to the problems created (a) by the interaction of the lags between price-setting and wage setting and the influence of the cyclical development of output and productivity on

2 SVR JG, 1970/71, Z 236,237

3 SVR JG, 1970/71, Z 243.

4 SVR JG, 1966/67, Z 218, JG 1967/68, Z 191.

distribution and (b) by the trend shift in distribution. The series of policy measures put forward by the SVR reflected the pattern of events following the implementation in 1968 of the Council's original proposal for a "concerted action" voluntary incomes policy. As outlined in chapter five, the extended wage-lag in 1968-69 was partly the result of the very modest wage increases sought by the unions in the context of the concerted action guide-lines of 1968. The sharp shift in distribution toward profits led to the wild-cat strikes, which shifted the location of distributional conflict from the industry to the plant-level.

The Strategy for Preventive Income Securing proposed in 1969/70 by the SVR addressed the question of devising a means of avoiding the inflationary and/or profitability implications of the distributional struggle in the late phase of the cyclical boom without endangering the growth and employment objectives. However, the following year, the Council was more pessimistic about the possibility of maintaining an incomes policy beyond the first stage of an upswing. They highlighted the dangers inherent in the formulation of wage agreements in the context of an incomes policy which run counter to the reasonable wage expectations of union members.¹ Very similar sentiments were expressed by the Bundesbank in its 1969 report:

It would certainly make little sense to appeal for restraint in wage policy so long as market tendencies do not indicate that excess demand is disappearing. Wage agreements conflicting with the state of the labour market would produce little effect on actual wages, but

1 SVR JG 1970/71, Z 274 (quoted above in chapter five).

would create new problems for the employers' and workers' organizations.¹

The experience of incomes policies which had been premised on the notion of preserving the status quo distribution led the Council to suggest a different approach. It noted that the factor distribution of income not only reflected changes in the scarcity of factors but also that the functioning of the economy depended on views about the justness of the distribution. The SVR was suggesting that the employers had to adjust to a lower profit share (and rate) for "objective" reasons relating to lower availability of labour, and moreover, accept that even that profit share would have to be further reduced to provide a fairer distribution.² Gahlen and Liefert expressed the change of view as follows:

The previous efforts of the Council to terminate the distributional struggle to maintain stability were based on the suppression of the redistributional demands of the unions. Now these are recognized. It is implied that the employers' associations have to give up the defence of the status quo. The addressee of the incomes policy proposals has changed.³

It was in this context that the proposal emerged for a rather radical change in the relationship between profits and wages under the banner "Profit-sharing with limited liability".⁴ Using notions that have since been formalized in the literature on implicit contracts between employers and employees, the Council proposed that employers grant workers a

1 Bundesbank Annual Report, 1969, p.29.

2 SVR JG, 1972/73, Z 490-496, 503.

3 Gahlen & Liefert, "Die Vorschläge", 1974, p.107.

4 SVR JG, 1972/3, Z 501-510; and Gahlen & Liefert, 1974, pp.106-116.

higher average wage share over the cycle but at the cost of a higher variance. If actual profits turned out to be greater than "normal" then the extra would be divided between employers and employees one to one and the same would be true for profits below "normal".¹

2.3 The views of the Government

During the years to the mid 1960's when economic policy was dominated by Erhard in his capacity as economics minister and then as Chancellor, distributional policy objectives were explicitly ruled out by the government. In Erhard's view, any attempt by the government to change distributive shares or any action by the government which assisted the trades unions or businesses in their attempts to alter distribution would be self-defeating.² Erhard believed that a major danger which could arise from the tendency toward inflation as the result of distributional conflict was the threat to savings and thus, in his view, to investment.

The maintenance of competitive conditions in the goods market was a central plank of his counter-inflation policy. Erhard was more successful in increasing the extent of competition on the domestic market through import liberalization than through anti-monopoly legislation. Strong opposition from the business associations caused the

1 SVR JG, 1972/73, Z 503, Gahlen & Liefert, 1974, pp.108-114.

2 For example, see Ludwig Erhard, Prosperity through Competition: the economics of the German miracle, 3rd ed. (London, Thames & Hudson, 1962), pp.3, 163.

introduction of the Law against Restraints of Competition to be delayed from 1952 to 1957. The final version was much weaker although it represented a sharp break in the traditional attitude of German laws toward competition in prohibiting horizontal and vertical restrictive agreements.¹ A large number of exceptions were written into the law and resale price maintenance continued to be legal for branded goods. There was no control of merger activity: the only requirement was notification to the cartel office of mergers involving firms with large market shares. Promises to strengthen anti-monopoly legislation were never fulfilled and the merger registration requirements were actually eased in 1964. This was justified by the increased competition provided by the EEC.² Effectively, the government placed the burden of the control of pricing behaviour on its trade, rather than its industrial policy, seeking to use foreign competition as a means of strengthening the resolve of businesses in wage negotiations.

Erhard focused particular attention on the necessity for wage and price rises to be kept under control if German exports and import substitutes were to remain competitive. At the BDI Assembly in 1962, he argued that price increases in Germany were reaching the limit: "The German market lies

1 G. Denton, M. Forsyth, & M. MacLennan, Economic Planning and Policies in Britain, France and Germany, (London, PEP, 1968), p.59.

2 *ibid.*, pp. 59-61.

open, defenceless".¹ He later denounced the intention of the car manufacturers to increase prices in the expectation of a wage increase and called for the reversal of a subsequent price rise of 5% by Volkswagen, threatening to reduce import duties on cars manufactured in other Common Market member countries. When the car makers held firm, explaining that their higher labour and materials costs had forced them to increase prices by between 3 and 10%, Erhard introduced a bill to cut import tariffs.²

In his response to the Blessing Memorandum of 1960, Chancellor Adenauer echoed the analysis of the Bundesbank, stating in an open letter to management and wage negotiators:

... in the long run no gains which are the result of claims exceeding the given limits can be maintained. In this context, I urgently ask the employers to let the public participate in the progress made by reducing prices... The unions should contribute to the maintenance of currency stability by keeping their claims within the above mentioned limits.³

In their report on economic developments in 1962 and the outlook for 1963, which also followed the arguments of the Blessing Memorandum, the government observed that wage claims were being put forward and granted which exceeded the growth of productivity.⁴ Such increases would have led on the one

1 Quoted in Braunthal, The Federation of German Industry, 1965, p.280.

2 Quoted *ibid.*

3 Quoted in William Fellner, et. al., The Problem of Rising Prices, (Paris, OECD, 1961), p.350.

4 Bericht über die Wirtschaftsentwicklung im Jahre 1962 und die Aussichten für 1963, Bundestagdrucksache IV/1010, 1963.

side to an increase in the wage share and on the other contributed to cost pressure which businesses would have passed on in their prices. The Report warned of the threat to investment and employment if union attempts to alter the distribution of income and that changes in international price and cost relations were occurring to the detriment of Germany.

This diagnosis resulted in a number of policy proposals: first, that there be a halt to any further reduction in working time since shorter hours exacerbated the tension in the labour market and implied a further limitation on growth potential. Secondly, the government announced wage guidelines which limited the growth of wages and salaries per employee to the growth of productivity.¹ The government held to the simple productivity rule (i.e. taking no account of the level of price inflation) in spite of the analysis in a scientific advisory report in 1960 (see p.255 above) which proposed that wages should rise in line with productivity but that there be a supplement to cover inflation.²

By the middle of the 1960's a body of opinion had built up within the economics ministry and amongst expert advisory groups that it was essential for continued economic stability for there to be an organized exchange of information and views between the major centres of economic power. Erhard refused

1 Bericht, 1963; J. Bergmann, O. Jacobi & W. Müller-Jentsch, Gewerkschaften in der Bundesrepublik, (Frankfurt, Campus, 1979), pp.241-2.

2 Wissenschaftliche Beirat, 1960, Z 10, reprinted in Sammelband der Gutachten, 1973, pp.399-400.

to accept any such "corporatist" arrangement.¹ His resignation and the arrival as economics minister of Social Democrat Karl Schiller marked an important change in official attitudes toward addressing the question of distribution.

The Growth and Stability Law of 1967 states that in the event of any of the four goals of policy being threatened, the government would be obliged to put forward orientation data and to discuss them with the major economic organizations. These "Concerted Action" sittings were attended by representatives of the various ministries, the Bundesbank, the Kartellamt, the three main business organizations (BDA, BDI, DIHT), the DGB (and the main individual unions), the DAG (the non-DGB union federation) and the Council of Experts.

At the first meetings of concerted action in 1967, discussion centred on the government's stabilization policy package during which Schiller introduced the concept of social symmetry and stated that "in the coming phase of concerted action we will be working on general views of the medium term development of the German economy and therefore also of the foundations of income and property distribution".² The basis of social symmetry would be decided. Schiller defined social symmetry as meaning that when considering all financial and economic policy measures, account must be taken of whether only one group will be burdened or favoured and whether

1 Otto Schlecht, Konzertierte Aktion als Instrument der Wirtschaftspolitik, (Tübingen, Mohr, 1968), pp.12-13.

2 Quoted in H-D Hardes, Einkommenspolitik in der BRD: Stabilität und Gruppeninteressen: Der Fall Konzertierte Aktion, (Frankfurt, Herder und Herder, 1974), p.30.

compensation must be provided through other means.¹ The concept was interpreted by the unions as a promise by the government to ensure a "balanced" development of the income distribution as an objective.² But the employers interpreted it as a statement that only if the aims of the social partners were compatible could there be the simultaneous achievement of the four goals of low inflation, full employment, adequate growth and foreign balance.³

The unions' interpretation of social symmetry was based on their presumption that employees were disadvantaged and that symmetry entailed a recognition of the need to redress the balance. The employers were not drawn to make any judgement on the prevailing distribution - emphasizing instead that such questions lay beyond the scope of the four goals of policy and therefore beyond the remit of concerted action.⁴ In their projections for distribution carried out in 1969, the Economics Ministry stated that the government did not see its role as altering the factor distribution of income.⁵ This divergence made it impossible for agreement to be reached on the government's project of setting out medium term

1 *ibid.*, p.33.

2 H. Adam, "Soziale Symmetrie - Probleme einer Operationalisierung und politische Konsequenzen", WWI Mitteilungen, 24 (1971), pp.27-31.

3 Schleyer, quoted in Adam, WWI-Mitteilungen, 1971, p.21.

4 Harde, Einkommenspolitik, 1974, pp.43-4.

5 Quoted in K. Lübke, "Die Einkommensverteilung in den Zielprojektionen des BMWF, des DGB und des GDGW", RWI-Mitteilungen, (1972), p.250.

distributional aims and culminated in a break-down of concerted action. A compromise was reached and the disagreements side-stepped through the establishment of a working group to formulate proposals for the medium run evolution of distribution and wealth.

"Social symmetry" was once again the focus of disagreement within concerted action over the more pressing issue of the uneven development of distributive shares in the upswing from 1967. Despite the Council of Experts' advice, the government was unwilling to concede that any rebalancing was required in 1969. As noted above, the Council was particularly concerned about the role of the timing of distributional changes over the cycle in increasing the amplitude of the cycle, and were therefore seeking to dampen the upswing. The government's case appears to have followed that of the employers who argued that the profit share had still (by 1968) not been restored to the level of 1964 and that no redistribution was possible.¹ The difference of views about the extent to which wages should rise in 1969 was reflected, for the first time since the establishment of concerted action, in the absence from the communique of the usual statement that the participants were prepared to support the government's projections.

The following year, the government refrained from proposing guide-lines for collective bargaining wage increases - including in its report projections only for the growth of effective gross hourly earnings. This reflected the change in

1 Harde, Einkommenspolitik, 1974, pp.43,4.

the character of the unions' participation in concerted action following the unofficial strikes in 1969. The government's projection of rises of 10-11% was strongly criticized by the business associations who argued that collective bargaining rates could only rise by a maximum of 5 1/2%.

With the change in the economic climate in 1971, it was agreed that prices and wages were strongly influenced by the price and wage expectations of the unions, business associations and their members. The representatives of the associations declared that they were prepared to transmit to their members the view that the economic outlook was less optimistic.¹ Nevertheless disagreement remained as to the interpretation of the implications of the downturn for distribution: the unions understood it as meaning they would have to give up their claim to a higher wage share and accept a neutral distributional outcome, whereas the employers' interpretation was that the profit share would have to increase in view of its earlier decline as a result of the wage explosions.

3. The Role of Distribution: Union and Business Association Views

3.1 Unions

The explicit identification of a shift in the factor distribution of income as an objective in the expansive wages policy of 1954 was one catalyst for the continuing concern with distribution in the work of the authorities and the

1 *ibid.*, p.66.

collective bargaining parties. As was argued in chapter four, it was when the fear of unemployment had receded that the unions began to focus on questions of wages and distribution. Previously,

[t]hey [the unions] have been willing to permit large profits as an encouragement to this reconstruction; they have not wished to interfere, by raising costs unduly, with the revival of the export trade; and they have not wished to assume responsibility for an inflationary spiral.¹

The unions' distributional objective was primarily a normative one² although on occasion they developed arguments suggesting that a higher wage share would contribute to a higher level of economic performance by, for example, stimulating labour-saving technical progress and reducing the economy's dependence on exports. In an address to a business leaders conference in 1973, the DGB representative argued that a reduction in distributional tension through the shift in distribution to wages would lead to steadier growth. He claimed that a higher wage share would not endanger investment because steadier growth would reduce the riskiness of investment and therefore reduce the risk premium. "Thus a reduction in the share of investment which was self-financed would be quite compatible with unchanged investment since external finance would be cheaper".³

1 Clark Kerr, "Collective bargaining in post-war Germany", in A. Sturmhthal (ed.) Contemporary Collective Bargaining in Seven Countries, (Ithaca, Cornell University Press, 1957), p.205.

2 G. Leminsky, & B. Otto, Politik und Programmatik des Deutschen Gewerkschaftsbund, (Köln, 1974), p.251.

3 Reported in Jahresbericht des Bundesvereinigung der Deutschen Arbeitgeberverbände, 1973, p.67.

The normative argument begins with the notion that the existing distribution of wealth, personal income and factor income is unjust. The unions believed that the real income of employees should be increased so as to reduce the difference in income levels between the social groups.¹ Higher wages would enhance the ability of employees to save and to accumulate property, and would ultimately enable the participation of workers in the growth of productive capital.² Or, as it was put in the wage negotiations of 1955, "the social status of workers and salaried employees should be improved by a redistribution of the national product": the unions were not prepared to rely solely on labour productivity growth for increases in real wages.³

Beginning with the proposition that the existing distribution was unjust, the unions sought to change it through the one technique they felt was available to them: namely, their nominal wages policy. In much of the discussion, an isomorphism was assumed between changes in the factor distribution of income and the personal distribution. The unions believed that the employers always have an advantage in relation to the distribution of income:

in that they can make use of the possibilities for credit

1 H. Markmann, "Wirtschaftliche Bestimmungsgründe der Lohnbildung aus der Sicht der Gewerkschaften", in H. Arndt, (Hrsg.), Lohnpolitik und Einkommensverteilung, Schriften des Vereins für Sozialpolitik, N.F., Band 51, (Berlin, Duncker & Humblot, 1969), p.757.

2 H. Markmann, "Incomes Policy in Germany: A trade union view", BJIR, (1964), 322-339, p.329.

3 Fellner, The Problem of Rising Prices, 1961, p.339.

pre-financing of production, they can essentially co-determine the income of employees and can decide the price of their products and therefore can actually influence the residual income.¹

By contrast, employees can only raise their income through an increase in wage rates which is publically negotiated and for which union have to put forward concrete reasons.² The unions were concerned that this basic disadvantage created dangers for their participation in wage-guideline policies. They felt that they would end up paying the cost of any policy failures in the sense that wage formulas would be unable to prevent businesses from increasing prices and thereby reducing the real value of the wage bargain. The worries of the unions were expressed as follows:

It is not admissable, that the employees on the one side should make their full contribution to the stabilization of the price level with a nominal wage increase which corresponds to the development of productivity, whilst on the other side they must pay through price rises in real terms for the [system's] failure to control other areas of demand with the same firmness.³

The just distribution was conceived primarily in terms of distribution between employees and employers and not within the employed. This functional rather than personal distributional orientation was reflected in the criterion of

1 Markmann, "Wirtschaftliche Bestimmungsgründe", 1969, p.759.

2 R. Henschel, "Ordnungsbedingungen und Einkommensverteilung - Einfluss der autonomen Gruppen auf die Ordnungsbedingungen" in G. Bombach, et. al. (Hrsg.) Neue Aspekte der Verteilungstheorie, Bd 2, (Tübingen, Mohr, 1974), p.321.

3 Meinhold quoted by Bergmann et. al., Gewerkschaften, 1979, p.85.

success by which members judged the outcome of wage negotiations: the decisive issue for members was whether the union had maintained the position of its members in the hierarchy. A constant intra union wage structure was viewed as fair.¹

There are a number of significant land-marks in the way in which the unions applied these distributional principles to the practice of wage negotiations. A rough chronological ordering illustrates the evolution of the views in the union movement. In the early 1950's, Agartz, as head of the DGB research institute originated the expansive wage policy which was directed explicitly at an aggressive wage bargaining stance in the attempt to change the distribution of income and to force firms to rationalize. He saw in such a policy:

the most effective means to keep businesses continuously to a higher rationality to raise productivity and through that to lay the foundation for the expansion of wages.²

Agartz sought to measure the success of union collective bargaining policy by a rising wage share: "A dynamic and expansive wage policy can only orient itself on a rising wage share in business total costs."³

Agartz's rhetoric was superseded in 1955 with the publication of the DGB's Action Programme. The active wages policy which was introduced in the Programme was vague: rather than an explicit objective of a higher wage share, a

1 H. Kock, "Nettoreallohnnorientierung der Gewerkschaften und Stagflation", Konjunkturpolitik, (1977), 119-141, pp.128-129.

2 Agartz, quoted in Bergmann, Gewerkschaften, 1979, p.199

3 *ibid.*

more just share was sought. The more just distribution was not quantified and referred not only to wages but also to shorter working time and improved social security provisions. Indeed, the 1955 programme provided a wide scope within which the leaders of the different unions could formulate their wage claims.

There was a sharp difference between the interpretation of the active wage policy by the engineering union IG Metall and IG Bau-Stein-Erden, the construction industry union. IG Metall recognized the limits placed on the ability of the unions to make any progress toward socialist goals because of the parliamentary majority of the conservative parties and thus accepted the necessity of concentrating on concrete industrial objectives (wages and conditions). Nevertheless, the union continued through the late fifties and early sixties to seek a higher wage share and refused to accept the productivity oriented wage formula.¹

By contrast, IG Bau struck the aim of socialization from its statutes in 1957 and used a modified productivity rule before it was recommended by the Council of Experts.² Furthermore, they concluded from the experience of the 1950's that conventional wages policy was an unsuitable method of trying to achieve a just distribution of income and property. IG Bau's president, Leber said "We can, through the use of

1 For example, statements at the IG Metall Congress in 1958 cited by Fellner, The Problem of Rising Prices, 1961, p.348.

2 Bergmann, Gewerkschaften, 1979, p.206.

power, influence the nominal wage level but we can have no influence on the purchasing power of such a wage."¹ This conclusion led IG Bau to propose the increased participation of employees in the ownership of capital (die Vermögensbildung in Arbeitnehmerhand), drawing on the tenets of Christian socialism. Great emphasis was placed on the need for the share of investment to be maintained if the economy was to develop successfully and on the notion that broad ownership of capital would offset the tendencies toward increased concentration of industry. IG Bau rejected the traditional union argument that the tendency of the economy toward underconsumption/overproduction required an increase in the share of consumption.²

The Düsseldorf Grundsatzprogramm of 1963 reflected a compromise between the positions represented by IG Metall and IG Bau. The theoretical centrepiece of the new programme was the adoption of a Keynesian analysis of macroeconomic behaviour. Keynesian analysis had some attractions for the unions because of its emphasis on the role of government policy in ensuring full employment and because of the importance of consumption demand and therefore of wages.

It has often been noted that the objectives of the Düsseldorf programme can be read as anticipating components of the Stability and Growth Law. The difference was the explicit inclusion by the DGB of the objective of a just distribution

1 From a speech to the IG Bau Conference of 1963, quoted *ibid.*, p.205.

2 *ibid.*, pp.206-209.

of income and wealth and of a reduction in the misuse of economic power, which they defined as the outcome of growing concentration of business.¹ However, the Düsseldorf programme marked a clear break with the original Munich programme in its displacement of what were ultimate objectives in Munich (socialization, codetermination, planning) to the status of intermediate objectives or instruments which might be necessary to ensure the attainment of the new set of ultimate objectives: growth, full employment, price stability, and a just distribution. The DGB proposed a system of multilateral interest mediation and in 1963 and 1964 a working group was established of officials of the economics ministry and the DGB to develop such an incomes policy for a market economy.² This turned out to be the pre-cursor of the concerted action procedures.

Recognizing that a prices or profits policy was unlikely in Germany (for constitutional if not political reasons), the unions placed considerable weight on the strengthening of competition policy as a means of controlling price rises. The DGB supported measures to bolster the cartel act, arguing that limitations on industrial concentration and on resale price maintenance could make prices more flexible downwards.³ Belief in the advantages of greater competition on the domestic market was reflected in a shift in the DGB's stance

1 Extracts from the 1963 DGB Grundsatzprogramm, "wirtschaftliche Grundsätzen" quoted in Bergmann, Gewerkschaften, 1979, pp.168-173.

2 Schlecht, Konzertierte Aktion, 1968, p.12.

3 Harde, Einkommenspolitik, 1974, p.37.

toward the revaluation of the D-Mark in 1968-69. Initially, the DGB was against a revaluation because of fears that it might endanger the recovery from the 1966-67 recession. However, in 1969 their views changed and the revaluation was seen as the only tool available through which domestic competition could be increased. In addition, a high D-Mark would favour labour's share of national income.¹

3.2 Employers' and Industry Associations

The views of the business associations on distribution were never made as explicit as those of the trade unions. In 1960, the annual report of the BDI (Federation of Industry Associations) warned that the attempt by labour to obtain a higher proportion of GNP would result in a curtailment of investment and a loss of jobs.² The BDA (Federation of Employers' Associations) highlighted the differential effects of rises in unit labour costs across sectors, suggesting that in industrial branches, cost pressure was reducing profitability and endangering growth, whilst in construction and the services, rising inflation was the likely outcome.³ Concern with such differential effects led the BDA to renew its efforts to achieve greater coordination of wage bargaining amongst employers. They issued a new version of the 1956

1 W. Glastetter, "Die versäumte Aufwertung der D-Mark und ihre Konsequenzen für die Einkommensverteilung", WWI-Mitteilungen, 22 (1969), 182-190, pp.189-190.

2 Braunthal, The Federation of German Industry, 1965, p.279.

3 Jahresbericht der BDA, 1961, p.40.

publication: Memorandum on the Economic and Political Importance of the Solidarity of Employers in the Area of Wage Bargaining which stressed the need for a unified wage policy across skill and regional levels.¹

In their analysis of the causes of the 1966-67 recession, the BDA pointed firmly to a line of causation from excessive wage increases to unit cost increases and price increases. They claimed that the cumulative burden of years of cost increases reduced profits and led to a reduction in the incentive to invest and warned that signs of slowing inflation should not be interpreted as the attainment of a stable equilibrium. Rather, it signalled a squeeze on profits:

in view of the exhausted labour reserves, our economic growth is decisively borne by investment. The recent experience of falling investment highlights the danger should wage cost pressure continue.²

In the discussions held in 1967 under the aegis of concerted action regarding the aims of medium run stabilization policy, the BDA repeated this view, stating that distribution must be such as to ensure sufficient possibilities for the self-financing of investment. They emphasized that a balanced medium term income distribution was that consistent with the achievement of the four goals of economic policy spelled out in the Stability and Growth Law. The achievement of balanced growth would, on the basis of past

1 Noe discusses the development by Gesamtmetall (the engineering industry employers' association) of solidarity amongst its members in wage-negotiations. C. Noe, Gebändigter Klassenkampf: Tarifaautonomie in der BRD, (Berlin, Duncker & Humblot, 1970), pp.49-54.

2 Jahresbericht der BDA, 1966. pp.59-60.

experience, be put in jeopardy if the full employment target was an unemployment rate of only 0.8%. In their view, such a rate constituted over-full employment and would lead to a loss of productivity, falling morale of labour, and a shift in the balance of power toward the unions in wage bargaining which could result in an aggressive wage policy.¹

At first, the employers were wary of the move of economic policy toward overall macro economic management including a voluntary incomes policy. Whilst recognizing the effectiveness of wage orientation data in limiting wage increases in 1963, the employers were worried that the unions would come to affect decisions which had been exclusively the prerogative of employers. However, their reluctance to participate in concerted action was overcome by the increased bargaining leverage of the unions in the conditions of high employment. When agreeing to participate in the first concerted action session in 1966, they stressed the importance of wages policy in the proposed stabilization measures and insisted that wage guidelines would have to be low.²

In a contribution outlining the views of the employers on the determinants and consequences of wage formation, Eichler stated that "[u]nions have for a long time addressed their policy toward the achievement of a higher wage share. The

1 Harde, Einkommenspolitik, 1974, p.33.

2 Bergmann, Gewerkschaften, 1979, p.102; W. Eichler, "Wirtschaftliche Bestimmungsgründe und Konsequenzen der Lohnbildung aus der Sicht der Arbeitgeber", in Arndt (Hrsg.), Lohnpolitik, 1969, p.742.

employers are not prepared to accept a fall in their share."¹ He also suggested that both practice and theory had shown that wage bargaining policy was an unsuitable instrument to use to try to change distribution since the attempt to do so resulted in a deterioration in economic growth and stability. The Council of Experts' cost-neutral wage policy was deemed a satisfactory principle and the employers argued, for example, that the call by the unions for a "catch-up" wage increase in 1968/69 to compensate for the earlier fall in the wage share was unacceptable. "In the period 1964/68 real effective earnings rose scarcely less fast than did productivity... Also account must be taken of the rise in the cost of capital per unit output since 1964."²

In response to union claims in 1970 that businesses were answerable for the development of prices, the business associations presented data pointing to a long term fall in the profitability of industry. This trend, they claimed, showed that price increases were "hardly the consequence of the immoderate pursuit of profit but rather the consequence of the pressure of costs on prices".³ A high degree of coordination between employers as regards price-setting is suggested by the following description given in the mid 1960's:

A favorite procedure for raising prices is the press conference held by one of the leading entrepreneurs in a

1 *ibid.*, p.744.

2 Cited in Hardes, Einkommenspolitik, 1974, p.43.

3 J. Bretschneider, "Das Preisverhalten der Unternehmer", in Der Arbeitgeber, 6th November 1970, p.892-4.

particular branch of industry. He announces that due to various factors (usually wage demands) his costs have risen to the point where it is impossible to keep prices at the current level, and that he will reluctantly have to increase them as of a certain date. Within a few days or weeks all the other enterprises in that branch of industry follow suit.¹

4. The Distributional Projections of 1971-72: Summary and Conclusions

A convenient way of summarizing the differences between the government, the unions and the business associations in their qualitative and quantitative assessments of distribution is provided by the set of medium run projections carried out by each body in 1971-72. Summaries and comparisons of the projections are provided by Memoranda to the economics ministry from the research institutes.² The government states quite explicitly that the aim of its projections was to present what it saw as the optimal combination of price, employment, growth and external targets attainable within the constraints of the market economy order. They exclude a direct influence of the government on wages and salaries and on distribution. For this reason the wage assumptions have the character of a working hypothesis and not a direct

1 M. Edelman, & R. Fleming, The Politics of Wage-Price Decisions, (Urbana, University of Illinois Press, 1965), p.114.

2 Deutsches Institut für Wirtschaftsforschung, Möglichkeiten und Grenzen einer Einkommenspolitik im Rahmen der allgemeinen Wirtschaftspolitik im Lichte der mittelfristigen Projektionen der Bundesregierung, des DGB und des Gemeinschaftsausschusses der Deutschen Gewerblichen Wirtschaft, 1972; Löbbecke, RWI-Mitteilungen, 1972, pp.249-292.

constituent of the projections.¹

For the DGB, the "just" distribution remained the preeminent goal but a rider was inserted - it would be striven for to the point where the investment propensity of business was not endangered, prices could remain stable and full employment was secured.² Distribution plays a role in the projections of the joint business associations (the GDGW) to the extent that they rejected as abortive "every attempt to increase the wage share with the help of an aggressive wage policy" and supported a cost neutral wage policy instead.³

The numerical projections reflect these statements: whilst the government and business association projections for the wage share in 1976 are virtually identical, showing little change from the 1971 actual value, the DGB's is markedly higher, increasing at one percentage point per annum.⁴ The DIW identifies the source of this difference primarily in the projected growth of real wages where the spread is from an annual growth rate of 3.9% (GDGW) to 5.7% (DGB). There is little variation in the estimates of productivity growth. Estimated money wage increases of 10.1% on the part of the DGB

1 BMWi projections, 1969 quoted in Löbbbe, RWI-Mitteilungen, 1972, p.250.

2 R. Henschel, in Deutschen Volkswirtschaftlichen Gesellschaft (Hrsg.), Perspektiven der Wirtschaftsentwicklungen in der BRD 1971-1975, (Hamburg, 1971), p.60, quoted by Löbbbe, 1972, p.251.

3 GDGW Zielprojektionen quoted in Löbbbe, RWI-Mitteilungen, 1972, p.251.

4 Löbbbe, RWI-Mitteilungen, 1972, Table 8. p.266.

are well above those of the government and business associations - as is to a lesser extent the estimate of price inflation.¹ Differences in the inflation projections are limited by the fact that all three parties accept the price stability objective of the Stability and Growth Law and recognize the Bundesbank's obligation to defend the value of the currency. Using estimates based on the extrapolation of past relationships, both Löbbecke and the DIW point out that the DGB's outcomes for wage increases and price inflation imply a change in the trend in competitive conditions in the product market and/or in the pricing behaviour of firms.²

The DIW derives from the projections a comparable set of implications for the expenditure of national income. The sharpest differences emerge in the projected investment shares. The DGB shows the share of private business investment falling by 2 percentage points and that of government investment rising by over 2 percentage points over the period 1971-1976. Both the government and the GDGW show changes in the same direction as the DGB but of a much smaller magnitude.³

The differences in the development of the functional distribution of income and in investment are reflected in the projected changes in the financing of investment. Whilst the GDGW projected that the share of private business fixed

1 DIW, Möglichkeiten, 1972, p.33.

2 Löbbecke RWI-Mitteilungen, 1972, pp.273-280, DIW, Möglichkeiten, 1972, pp.34, 39-43.

3 *ibid.*, Table 14, p.54.

investment which was financed by retentions and depreciation would be slightly above the long run trend, the DGB shows a clear fall.¹ The DIW calculates an implicit halt to the trend decline in the business rate of profit at the historically low level of 1971 in the projections of the government and the business associations. The DGB results imply a continued fall from the actual value of 10.5% in 1971 to 7% in 1976.²

The DGB place great emphasis on the need for higher government investment to provide the infrastructure which they argue is necessary to prevent the deterioration of output per unit capital in the private sector³, projecting an annual average growth rate of nearly 20%. However in close conformity with the other bodies, any marked deterioration of the government financial balance is avoided so that the DGB must project higher increases in taxation.

In short, the DGB project a clear change in the functional distribution of income and a rise in the importance of government as compared with private investment. However, because of their concurrence with the constraint of the government deficit, they show a marginal decline in the post tax wage share, which reduces the discrepancy between their projection for the post-tax wage share and that of the other bodies. There is a close similarity between the projections

1 L8bbe, RWI-Mitteilungen, 1972, Table 12, p.287.

2 DIW, M8glichkeiten, 1972, p.65. The outturn for 1976 lay between the two - i.e. the effect of the oil shock was not sufficient to reduce profitability by as much as the DGB projection implied.

3 *ibid.*, pp.60-61.

of the government and the business associations for little change in distribution and a continued decline in investment.

The survey presented above indicates that virtually from the beginning of the period under consideration, the question of the role of the factor distribution in economic policy was of explicit or implicit concern to the major economic organizations. Whether as an objective or as a constraint, the distribution of income influenced the behaviour of government, unions and business associations. The task of formulating a theoretical framework within which to assess the endogenous and exogenous changes in distribution was begun by the Bundesbank and continued by the Council of Experts. What is perhaps most striking about the German case is that this concern surfaced so early, indeed as soon as a situation of full employment was in sight.

Chapter Eight

The Course of Profitability in West Germany, 1950 - 1973

1. Explanations of Trends in Profitability: Previous Studies

The discussion in chapter seven has revealed that the relationship between the factor distribution of income and both economic policy and performance has been a recurrent theme in the economic analysis of the major participants in German policy making. Nevertheless, there have been few attempts at a sustained analysis and interpretation of the empirical trends. Indicative of interpretative studies based at least in part on an analysis of the statistical trends (time series) which have been undertaken are those by Altvater et. al.¹ and the Memorandum Group². Blechschmidt provides a survey of number of further studies.³ Cross-section studies of profitability have also been conducted, including those in the industrial economics tradition by Neumann et. al.⁴.

Each of the time series studies puts forward a thesis as to why profitability declined over the period since the mid

1 E. Altvater, J. Hoffmann, & W. Semmler, Vom Wirtschaftswunder zur Wirtschaftskrise: Ökonomie und Politik in der Bundesrepublik, 2. Aufl. (Berlin, Olle & Walter, 1980).

2 Memorandum 1975. "Für eine wirksame und soziale Wirtschaftspolitik", in Blätter für deutsche und internationale Politik, Nr. 11, 1975. and Memorandum 1978, Memorandum "Alternativen der Wirtschaftspolitik", (Köln, 1978).

3 Blechschmidt, Rentabilität und Krise, 1981, pp.39-49.

4 M. Neumann, et. al., "Profitability, risk and market structure in West German industries", JIE, 27, 3 (1979), 227-242.

fifties. Altvater et. al. conduct their analysis from within a Marxist framework and in line with the orthodox Marxist approach emphasize the "law of the tendency for the rate of profit to decline". They identify the rising capital/output ratio as decisive for the fall in the rate of profit. However, there is a fundamental flaw in Marx's theory of the tendency of the rate of profit to fall - he failed to recognize that capitalists will not willingly introduce a new technique of production such as will raise the capital/output ratio unless the overall cost reduction through lower wage costs associated with the new technique increases the rate of profit.¹ In spite of this theoretical objection and of the evidence in their own data, Altvater et. al. were reluctant to acknowledge that a rising wage share could have played a role in the decline in profitability. They argue that until the mid-fifties, sufficient labour was available for growth to occur through an extension of production without the need to increase the capital/labour ratio.² Such "extensive" investment meant the absorption of the reserve of labour. In the second half of the fifties, investment took on an increasingly capital-intensive bias. With full employment in the sixties, these processes intensified and the capital/output ratio began to increase, in their view validating the law of the tendency of the rate of profit to fall.

The work of the Memorandum group takes an

1 See P. Van Parijs, "The falling-rate-of-profit theory of crisis: a rational reconstruction by way of obituary", Review of Radical Political Economics, 12.1 (1980), 1-16.

2 Altvater, Vom Wirtschaftswunder, 1980, p. 88.

underconsumptionist approach based on a rising degree of monopoly and the associated incipient lack of demand which, in a Kaldorian fashion, is reflected in a shift in distribution from profits to wages. They argue that as the economy develops, a process of increasing monopolization occurs within each industry. A hierarchy of profit rates emerges with monopolies receiving above average profits and smaller firms receiving below average returns. The rising degree of monopoly has the effect of raising the ex ante average propensity to save and thus ceteris paribus depresses consumption demand. If investment does not rise then prices fall and profits are squeezed: the higher ex ante profits are not realized. The Memorandum group also assume (in line with Robinson) that investment is directly related to profitability and thus that a fall in investment ensues in the wake of the decline in profitability. However, as will be argued in chapter nine, such an underconsumptionist theory does not fit easily with the facts of the German case, with the partial exception of the final cycle, 1969-1973.

In his survey, Blechschmidt notes that although calculations of rates and shares of profits were made in the 1960's (by the economic institutes, the employers' association, the DGB etc.), there was no empirically-based analysis of the trends in profitability. Blechschmidt identifies a number of Marxian-oriented studies focusing on the rise in the capital/output ratio as a result of "over-accumulation" which follow the lines of Altvater et. al. A second strand of analysis highlighted by

Blechtschmidt emphasizing distributive shares, is represented by the views of the Council of Experts in their 1973/4 and 1974/5 reports where the role of the government in raising the government's share of income (higher taxation) is seen to have contributed to a reduction in the share of profits. In guaranteeing full employment, the government also contributed to an increase in the monopoly power of unions in the labour market.

Cross-section studies of profitability have always been part of the industrial economics literature in the structure-conduct-performance tradition. Recently, such studies have been carried out for West German industry. Using average data for the period 1965-73 for a sample of joint-stock companies, Neumann et. al. found that concentration ratios, import ratios and export ratios (i.e. imports or exports as a proportion of industry turnover) were all significantly related to profitability.¹ On concentration, the coefficient was positive; on the import and export ratios, the coefficients were negative. The adverse effect of the import ratio was attributed to the effect of imports on domestic competition. The negative sign on the export ratio was interpreted as indicating the lower market power of firms in export markets: firms were unable to raise their prices to protect their profit margins in the face of the revaluations of the D-Mark. Similar results for the

1 Neumann, JIE, 1979, pp. 227-242.

import share were found for Germany by Pagoulatos and Sorensen¹ in a multi-country study using input output data from the 1965 EEC Input-Output Tables for 38 manufacturing industries. However, they found no significant effect on profitability of the export share.

It is useful to note here the results of a detailed disaggregated study of the relationship between effective protection and measures of performance, including profitability.² The study uses cross section data on 28 branches in manufacturing and mining for the German economy at three points within the period we are considering: 1958, 1964, 1970. Although the capital stock data available for the estimates of rates of profit was not entirely satisfactory, the results are unlikely to be seriously distorted. The study finds that of the branches with above average profitability in 1958, and with below average profitability in 1970, only one (fine ceramics) was in the group characterized by a high degree of protection. The authors also found that there was a higher rank correlation between the level of the profit rate in 1970 and the change in the value added price index from 1962 to 1970 in the more highly protected branches. They conclude that the branches which earned above average profits in 1970, were, in general, able to achieve a stronger increase in product price or benefitted from an especially favourable

1 E. Pagoulatos, & R. Sorensen, "Foreign trade, concentration and profitability in open economies", EER, 8 (1976), 255-267.

2 J.G. Donges, G. Fels, A.D. Neu, et. al., Protektion und Branchenstruktur der westdeutschen Wirtschaft, Kieler Studien, Nr. 123, (Tübingen, Mohr, 1973).

development of intermediate goods prices.¹

2. The Evolution of Profitability: A Cycle-by-Cycle Analysis

There is no well-established methodology for analyzing long-run trends in distribution. An approach illustrated by the time-series studies noted above is to attempt to test one particular theory against the data. However, the conclusions to the theoretical survey chapters together with the stylized facts characterizing the German economy over this period, suggest that it is highly unlikely that a single theory could account for the developments observed. This impression was confirmed when drawing out the lines of argument pursued by the various economic actors in their debates about distribution and in the more general analysis of the constraints on policy outlined in earlier chapters. For these reasons, an eclectic stance has been adopted as the starting point for the empirical analysis of the course of profitability.

Instead of directly attempting to estimate a summary regression equation, it seemed preferable to take a close look at what actually happened to the major determinants of profitability in a framework which would allow full weight to be given to the historical, institutional and policy context. Such an approach would provide guidance as to the variables likely to be significant in a regression. The second reason for beginning with a looser, non-econometric analysis is that

1 *ibid.*, p.108.

for a period of over twenty years, there can be no presumption that the same factors or factors will be contributing to the observed trends over the period as a whole. In other words, although it may be possible to depict satisfactorily the average path of profitability using a regression equation, there may well be important within period residuals still to explain. A more detailed cycle-by-cycle analysis will provide the material to enable this to be done.

Developments across each cycle are therefore examined in turn in this chapter using a common framework based on a set of statistical indicators derived from the theories surveyed in part one. As is frequently the case, there are difficulties in finding observable variables to fit the demands of the theory. The further problem of alternative interpretations of the same variables in different theories is dealt with explicitly in chapter nine. To examine the possible role played by supply-side factors suggested by neo-classical theory, attention is centred on changes in the supply of labour over the period: growth rates of the labour supply and of the capital stock, the unemployment and vacancy rates, and indicators of labour supply elasticity based on the inter-industry dispersion of wage rates will be used.

The neo-Keynesian theory suggests that the trend of capacity utilization will be important. Finally, the Kaleckian-type theories with their emphasis on the determinants of wage-bargaining power and the constraints on firms' price-setting behaviour draw attention to trends in the unemployment rate (a major determinant of union bargaining

power), and the financial and organizational strength of trade unions and employers' associations. Constraints on price-setting in the tradeables sector are indicated, on the one hand, by the movement of costs relative to those of competitors abroad, and on the other, by trends in the openness of the economy.

Additional insights into the pressures on profitability can be drawn from the warranted real wage growth calculations described in chapter four. These calculations highlight the changes in labour productivity growth, the terms of trade, capital costs and taxation which require the adjustment of real wages and or profitability.

Whilst a common set of statistical indicators is used to systematize the discussion, advantage is taken of the historical style of analysis to provide a richer depiction of the forces at work in each sub-period. For example, although simple proxies for changes in union bargaining power exist, the discussion in chapter two indicates that a closer institutional analysis of, for instance, conflicts within the union organization as to appropriate objectives and strategies may be essential for compiling an accurate picture of bargaining strength. Similarly, legislative changes are likely to be important. A further example is provided by the interpretation of the pressure of aggregate demand, which is central to the neo-Keynesian hypothesis. Since only incipient rather than actual changes in capacity utilization are strictly required by the theory for shifts in distribution, it is necessary to look more closely at government demand

management policy if the conclusion is to be drawn that a specific role was played by private demand. As a final example, particular care must be taken in interpreting domestic labour market indicators when foreign workers are potentially available.

2.1 Rising profits to 1955

The years from 1950 to 1955 saw an improvement in profitability from the already high level achieved. Rising capacity utilization, remarked on by growth accountants as reducing the investment cost of growth for Germany in these years, made a clear contribution to rising profitability. The economy continued to be characterized by a labour surplus, with the result that falling unemployment did not necessitate any accelerated scrapping of plant. Although a fall in unemployment would ceteris paribus be associated with a shift in bargaining power from employers to unions, this did not occur in these years because of countervailing institutional and organizational changes. For export profit margins, there was a further boost from declining relative unit labour costs (RULC). Producers of import-competing products were faced with growing competition from foreign suppliers but because of the readjustment of price levels occurring in this period, the price-cost margins of domestic firms were not affected.

Although a consistent data set is only available from 1950, indices for real product wages and productivity for industry (a category lying between business and manufacturing) derived in table 5.2 of chapter five indicate that the profit

share was increasing from 1948 to 1950. As outlined there, the balance between productivity, product wages and real materials costs was by 1951 somewhat more favourable to profits than had been the situation in 1938. The factor distribution was further shifted in favour of profits with the rise of the profit share from 1950 to 1955 of 3.1% p.a. in the business sector and 1.7% p.a. in manufacturing (see Table 8.1).

Table 8.1

Summary Indicators of Factors Influencing Profitability,
1950-55

(% p.a. growth rates)

A.			Profit rate		Profit share			
			mf	non mf	mf	non mf		
1950-55			2.3	8.3	1.7	5.0		
B.	U rate ^a	K/L	RULC	WG	sh. wld	Import	Capacity	
			mf	mf	exports ^a	penetr. ^a	utiliz. ^a	
50-55	-3.7	2.0	-3.2		8.1	8.7	3.9	
C. ^b	Warranted ↑ in		Actual ↑ in		Warr. ↑ in		Act. ↑ in	
	real prod. wage		real prod wage		cons. wage		cons. wage	
	mf	bus	mf	bus	bus		bus	
50-55	6.4	7.3	5.5	5.0	7.9		5.6	

Notes: ^a change in % points

^b The full decomposition of the growth of warranted real product and consumption wages showing the contribution of changes in capital costs, the terms of trade, and in direct and indirect taxes is given in Tables 4.11, 4.12, pp. 141-2.

Definitions of the data series are provided in the data appendix to this chapter.

Part of the explanation for rising profitability over this period lies in developments familiar from the analysis of the pattern of profitability over the business cycle and extended to longer run analysis by underconsumptionist theories of distribution (see the discussion in chapter two).

Capacity utilization rose from 88.4 to 92.4 per cent. The role of rising capacity utilization is particularly important for explaining the continuing upward trend of profits in manufacturing, where falling capital costs contributed 1% per annum to the warranted real product wage growth (see Table 8.1 and Table 4.11). This was mainly the result of a falling capital/output ratio as industrial capacity created during the war was repaired and converted to civilian operation.

Rising capacity utilization was also reflected in rapid productivity growth in manufacturing. In non-manufacturing, as is typical, productivity grew considerably more slowly than in manufacturing whilst prices rose much more rapidly. The balance between the two permitted a more rapid growth of both the profit rate and share than was the case in manufacturing (Table 8.1). Part of the reason for this was the greater concentration in the non-manufacturing sector of industries in which prices were deregulated in this period. Despite the greater increase in the profit rate in non-manufacturing the level of the profit rate in manufacturing was still much higher than in non-manufacturing in 1955 (35.6% in manufacturing; 19.5% in non-manufacturing).

Relative unit labour costs fell from 1950 to 1955 which would ceteris paribus have contributed to a rise in profitability as businesses which set prices in line with foreign price leaders in export markets benefitted from falling relative costs. Germany doubled its share of world export markets between 1950 and 1955. This was a period, as indicated in chapter five, in which trade was liberalized

throughout Europe. Import penetration in manufacturing in Germany increased - from 10.7% to 19.4% - but any increase in competition that this provided in the domestic market was insufficient to outweigh the other factors favouring an improvement in profitability. As noted in chapter seven, during this period, the prices of imports of manufactures were being adjusted downward in line with those of German suppliers.

In these years, it is likely that profit margins on export sales were greater than on domestic sales.¹ With export prices rising much faster than prices at home, German producers benefitted doubly: from rising profit margins and from increasing sales. Their products became more competitive in price and non-price terms as shown by the large rise in Germany's share of world export sales but this did not have to be "bought" by a reduction in profitability. Although the area and commodity composition of German exports provided a favourable boost to exports, three quarters of the increase in export sales volume from 1950 to 1955 was due to success in increasing shares of individual markets.²

The rate of unemployment fell from 7.9% to 4.2%.

1 The Bank deutscher Länder stated in 1956 (p.8) that prices obtainable on foreign markets were higher than at home. Boarman also stated: "The low level of German costs relative to the high prices of internationally traded goods made export business more profitable than sales to the home market". (P.M. Boarman, Germany's Economic Dilemma: Inflation and the Balance of Payments, (New Haven, Yale University Press, 1964), p.157).

2 Maizels, Industrial Growth, 1963, Table 8.5, pp.200-201.

However, with labour still in plentiful supply, there was no need for any accelerated scrapping of equipment in order to make labour available to operate new plants being brought into service. In the business sector as a whole, the capital/labour ratio rose at only 0.5% per annum. This measure underestimates the true or underlying rise in capital intensity because the increased utilization of capacity was reflected in a fall in capital per head on existing plant. Symptomatic of a labour surplus economy, capital intensity continued to fall in non-manufacturing.

Although money wages rose rapidly over this period, and in spite of the fall in unemployment, the period was not characterized by growing union bargaining power. On the contrary, there was a strengthening in the position of employers relative to unions marked by the passing of the Works Constitution Act in 1952. The employers' and industrial associations became better organized at a time when the DGB was floundering following the death of its leader, Hans Böckler in 1951. As discussed in chapter five, the growing cohesion of the employers' associations was reflected in their ability to control the allocation of scarce raw materials whilst there were still shortages, and the black-balling of non-conforming enterprises in price-setting. In addition, the banking system played a role in reestablishing discipline in the group: "In this closeknit employer community, banking institutions with their close control over credit availability can be and have been used as enforcement agencies."¹

1 Kerr, "Collective bargaining", 1957, p. 174.

By contrast, the unions were complacent after parity codetermination in the basic Montan industries (coal, iron & steel) was secured in legislation in 1951. It seems that they misinterpreted the reasons for the success in 1951 - it had occurred both because of the special circumstances in the iron and steel industry in 1951 and because it represented a confirmation of the status quo. Far from extending the coverage of parity codetermination from the basic industries as the unions had sought, the Works Constitution Act of 1952 weakened the position of unions at plant level. The DGB had hoped that unions would be able to share influence with works councils in the plant. The new law meant that unions were not permitted to present slates for works council elections and guaranteed that most labour members of the supervisory board were drawn from the plant rather than from the broader strata of union members or officials. The importance of the industry wide collective bargaining agreement as the means for setting average wages and conditions declined. It came to represent a minimum wage as rates were set to reflect the precariousness of employment and so as not to embarrass the marginal firm.¹ In these years of continuing high unemployment, during which public opinion polls reported that people prized a job more highly than the right to vote, moderation was the hall-mark of wage bargaining.

The incentive for employees to join unions was diminished both by the legislation (1949) which extended the reach of collective bargaining agreements to non-unionized firms in the

1 *ibid.*, p.205.

industry and by the growing importance of plant-level supplements to collective bargaining wage rates and conditions. The unions were disquieted by the increasing integration of individual employee groups into the company which led to the creation of privileged groups in individual companies and branches.¹ The reduction in the prestige and influence of the unions was reflected in a decline in union membership density - it fell from a peak of 36% in 1951 to 32% in 1955.²

The role of government policy in influencing the course of distribution in the years to 1955 extended beyond the sphere of industrial relations legislation. The government pursued a policy consistent with an increase in the share of investment in national income. Their policy was directed at both the financing and the incentive aspects of investment, although as shown in chapter five, the direct role of the government in investment promotion was confined to housing and the basic industries, where profitability was particularly low. Retentions were recognized as the most important source of investment finance. Depreciation allowances were raised in 1953 which exerted a pressure on firms to continue to invest to maintain the tax advantage.³

1 H. Hartmann, Authority and Organization in German Management, (Princeton, Princeton University Press, 1959), p.88.

2 Bergmann, et. al., Table 20, p. 459. The totals for employees in the table were corrected for the boundary change using SVR JG 1977/78, T.12*, p.236.

3 Bank deutscher Länder, Annual Report, 1955, p.8.

Rising capacity utilization was reflected in the increasing rate of profit and provided an additional incentive for investment for expansion. The government's policy was to encourage investment and exports - it was not part of a full-employment-oriented demand management policy. Maintaining demand through any means at a level so as to increase the utilization of productive resources was not viewed as guaranteed to ensure long-run growth. The government did not hold with the Keynesian or under-consumptionist view that increasing profitability through rising capacity utilization as the result of pump-priming was a necessary or sufficient condition for sustainable growth. The logic behind the government's specific attention to exports and investment was outlined in chapter five. It was prepared to see a slower attainment of full utilization of resources if this was necessary to engender an appropriate orientation toward export sales. Given high profitability, investment was to be further encouraged through fiscal incentives - the accelerator role of a more rapid achievement of full capacity utilization was downplayed.

The government ran a budget surplus from 1950 of about 5% of GDP. An indication of the government's stance is provided by the Bank deutscher Länder in its 1953 report:

The fact that exports rose so much in 1953 was probably less due to the circumstances of the world market than to the fact that the possibilities of domestic sales did not keep pace with the enlargement of productive capacity, and that industry was therefore obliged to seek an outlet for its rising production in foreign markets.¹

1 Bank deutscher Länder, Annual Report, 1953, p.11.

By 1954-5, labour shortages were beginning to make themselves felt in particular skill and regional areas. The Bank deutscher Länder pointed out that the great increase in the demand for labour in 1954 could only be met through a further lengthening of hours of work (which rose on average for industrial workers from 47.9 in 1953 to 48.6 in 1954). This signalled the beginning of a transition from labour surplus to labour shortage pointing to the fact that the increase in productivity was by this stage due mainly to the introduction of labour-saving technical improvements rather than to the better utilization of existing facilities.

The movement can therefore doubtless be regarded as being already, in the main, a result of the higher degree of rationalization which industry has been seeking to achieve during recent years in view of the gradual contraction in the reserves of labour, coupled with the growing foreign competition.¹

2.2 Transition to labour shortage, 1955-1961

By 1955, the profit rate and share in West Germany were very high relative to pre-war German levels and relative to the other major industrialized economies in the 1950's.² From 1955 to the achievement of full employment in 1960-61, the economy was transformed in ways which meant the erosion of a

1 BdL, Annual Report, 1954, p.6.

2 Although as noted in the introduction, such comparisons should be treated with caution, the business profit share in Germany in 1953 was close to 30% as compared with the other large European economies where it was less than 25%. The difference in profit rates is more striking with the business profit rate in Germany 26% but less than 15% in the other economies. In both manufacturing and business, the German profit share and rate was also above that in Japan and the US. (Data from Armstrong & Glyn, 1986).

number of the special conditions which had contributed to the establishment of such high profitability in West Germany. The most important change was the shift from an elastic to a very inelastic supply of labour. Unemployment fell from 4.2% in 1955 to 0.7% in 1961 (see Table 8.2). This in turn was reflected in a realignment of bargaining power toward employees as their market position strengthened.

Table 8.2
Summary Indicators of Factors Influencing Profitability,
1955-61

(% p.a. growth rates)							
A.		Profit rate		Profit share			
		mf	non mf	mf	non mf		
1950-55		2.3	8.3	1.7	5.0		
1955-61		-5.6	-2.3	-2.5	0.1		
B.		U rate ^a	K/L	RULC	WG sh. wld	Import	Capacity
				mf	mf exports ^a	penetr. ^a	utiliz. ^a
50-55		-3.7	2.0	-3.2	8.1	8.7	3.9
55-61		-3.5	6.3	2.6	4.9	6.7	-2.9
C. ^b		Warranted ↑ in		Actual ↑ in		Warr. ↑ in	
		real prod. wage		real prod wage		cons. wage	
		mf	bus	mf	bus	bus	bus
50-55		6.4	7.3	5.5	5.0	7.9	5.6
55-61		4.3	4.4	6.6	4.8	4.2	4.5

Notes: ^a change in % points
^b The full decomposition of the growth of warranted real product and consumption wages showing the contribution of capital costs, changes in the terms of trade and in direct and indirect taxes is given in Tables 4.11,4.12, pp. 141-2.
Definitions of the data series are presented in the data appendix to this chapter.

Over the same period, policy measures at home interacted with the closer alignment of German cost increases with those in her trading partners to increase the degree of competition

in the product market. The outcome of these processes was a decline in profitability and a shift in the factor distribution of income away from profits.

The net rate of profit fell at an annual rate of 5.6% in manufacturing; 4.0% in the broader non-agricultural business sector. Almost one half of the decline in profitability in manufacturing was accounted for by a shift in distribution whereas in non-manufacturing business, the profit share continued to rise up to 1961 (see Table 8.2). This discrepancy between the sectors, highlights the role played by the constraints on price increases in tradeables - unit labour costs rose marginally faster in non-manufacturing (3.4% p.a. compared with 3.1% p.a. in manufacturing) but value added prices rose 1.4 percentage points faster in non-manufacturing. Capital costs rose more rapidly in manufacturing.

Relative unit labour costs in manufacturing increased by 2.6% p.a. - of which two-thirds (1.8% p.a.) represented faster unit labour cost increases in Germany in national currencies. The remaining third was due to the revaluation of the D-Mark - in early 1961. The D-Mark was revalued by 5% against the dollar, which corresponded to an effective revaluation of about 4 1/2 %. The impact effect of the revaluation on profitability was reflected in the 1961 profits data - the rate of profit in manufacturing fell by 12% in 1961 as compared with the average annual rate of fall of 4.3% for the years from 1955 to 1960 (capacity utilization in 1960 and 1961 was not substantially different). The question of the

persistence of the step down in profits in 1961 will be examined in the next section.

The increasing openness of the German economy continued apace from 1955 to 1961. Import penetration rose from 19.4% to 26.1% exposing German industry to more wide-ranging competition. Germany's share of world exports continued to rise: from 15.4% in 1955 to 20.3% in 1961. However, as discussed in chapter six, by the second half of the fifties, Germany was relying more heavily on a favourable area and commodity composition of exports than on competitive strength to increase export volume. Only about one third of export growth (compared with three quarters for the early fifties) was due to increased competitive strength.¹

By 1955-56, shortages of labour were developing for particular skill categories and in particular regions. For example, the unemployment rate in Rhineland-Palatinate was reported to have fallen to 1% by the end of 1955.² The Bank deutscher Länder stated: "Matters went so far in some cases that employers enticed workers away from each other by open or concealed wage increases".³ They identified three indicators of labour shortage: the emergence of wage drift; the fact that for standard negotiated wage rates, all expiring contracts were terminated and in some cases, new agreements

1 Maizels, Industrial Growth, 1963, Table 8.5.
pp.200-201
.

2 Figure cited by Fellner, The Problem of Rising Prices, 1961, p.339.

3 BdL, Annual Report, 1955, p.9.

were made before the expiry of the old; and workers were successful in reducing the period of the wage contract.¹

Despite the rapid rise in the capital labour ratio, labour productivity growth slowed significantly, narrowing the scope for cost-neutral real wage increases. This supports the idea that the rapid growth of productivity prior to 1955 reflected short-run increasing returns as capacity was more fully utilized. Together with the turnaround in the trend of capital costs, this led to a sharp reduction in the warranted product wage increase.

The transition from labour surplus to shortage coincided with a reorientation of union strategy away from broad political objectives such as economy-wide codetermination and socialization of industry toward economic objectives. The shift reflected a recognition of the defeats of the previous decade. If political intervention was not to bring a radical redistribution of power and wealth, then the unions could take advantage of their improving market position to shift distribution from capital to labour. Parts of the union movement went further in this direction, suggesting that the redistribution of property toward employees would only occur through the process of a shift in the distribution of income which led to an increase in savings and eventually to the accumulation of property in the hands of workers.

The "expansive wage policy" which called for a shift in distribution to be achieved by higher wage awards was, as discussed in chapter seven, reflected in the DGB's 1955 Action

1 *ibid.*

Programme and in the rhetoric of wage claims in 1955. The engineering union refused the employers' offer of a reduction in the price of steel in exchange for a lower money wage increase and established their leadership of the annual wage round. The unions concentrated in this period on securing reductions in working hours at no loss of pay and between 1955 and 1961 average hours worked fell by 1.9% p.a..

Having established the principle of an annual wage round and with unions in a stronger bargaining position as a result of the tightening labour market, there were no strikes over wages in the years from 1955 to 1961. Whilst the government continued to urge that productivity growth should be reflected in falling prices, the unions sought to incorporate increases in the cost of living into wage awards as a standard procedure. Although the employers would not concede the principle, money wage awards amounting to at least average labour productivity growth plus the increase in the consumer price index were granted (see Table 8.2 and Table 4.12, p.142). Money wages were also boosted by wage drift of a further 1% point.

It was concern about the situation in the labour market with the wage claims of over 3.5 million employees still open at the beginning of 1960 which led the government to commission the Blessing Memorandum on wages and prices from the Bundesbank. Excess demand for labour was evident from the fact that vacancies were far outnumbering those registered as unemployed. The concern in the Bundesbank (discussed in chapter seven) about the implications of the shortage of

labour were twofold: on the one hand, they were worried about the inflationary consequences of the increases in labour costs and secondly they were worried that an inability of firms to protect their profit margins through raising prices would endanger the financing conditions for investment and reduce economic growth. They pointed out that even before the revaluation in 1961, German firms were losing their competitive edge in delivery times. Businesses ceased giving priority to export sales: "There was however the less reason to do so inasmuch as on world markets from mid-1960 onwards it was much harder to enforce price rises than on markets at home."¹

Initially the Bundesbank's argument appears contradictory. Since part of the source of excess demand in the labour market and of the easing of competition in the domestic product market was too high a level of demand, then surely a reduction in export demand and in investment as the result of the decline in profitability was to be welcomed as the appropriate equilibrating response. But the Bundesbank feared a collapse of investment. It also took the view that a strong export orientation carried with it benefits beyond simple demand effects. The government and the Bundesbank sought to reduce demand through a decline in consumption and a rise in imports.

The differentiation between the sources of demand was illustrated by the tariff cuts of 1956 and 1957. Labelled "konjunkturpolitische Zollsenkungen", import duties were

1 Bundesbank, Annual Report, 1960, p.19.

approximately halved in two steps. In 1956, duties on industrial products were reduced by 20 to 25% depending on the existing level of protection; in 1957, there was a further across the board reduction of 25%.¹ The effect of these measures was to increase the degree of competition in the domestic market.

Thus reductions in profitability due to increasing competition were viewed differently from those due to "excessive cost increases" and an associated fall in competitiveness. The consequences of the former were described in terms of benefits to consumers through limiting price increases and stimulating product and process innovation (presumably along the lines that greater competition would force incumbent firms to innovate to retain their market position). The consequences of the latter were seen to be a reduction of investment and of export "effort".

Erhard placed particular emphasis on increasing competition and reducing protection. For this reason he supported the use of revaluation to deal with the balance of payments surplus in the late fifties: he was opposed to the protection which the undervalued exchange rate afforded producers of tradeables. His view that a revaluation and the associated reduction in profitability was inevitable was eventually accepted throughout the administration in 1960. This change of view, with the Bundesbank moving into line with

1 J. Wemelsfelder, "The short-term effect of the lowering of import duties in Germany", EJ, (1960), p.94.

Erhard, occurred as a result of the loss of the monetary instrument as sterilization proved self-defeating in the upswing to 1960. It was also recognized that more rapid growth to reduce the balance of payments surplus was impossible given the labour supply situation.

2.3 Full employment and falling profits, 1961-1965

The German economy began this period with full employment. The total labour force was growing at a rate of only 0.2% p.a., with the non-agricultural labour force growing a little faster at 0.9% p.a.. Yet the business capital stock was growing at nearly 8% p.a.; in manufacturing, by more than 9% p.a.. Unemployment fell from 0.7% to 0.5% of the labour force. The period was one of partial adjustment to the initial disequilibrium in the availability of labour and capital, and in the wake of the revaluation, domestic rather than external manifestations of these imbalances predominated. The revaluation of 1961 was successful in reducing German competitiveness, and the cyclical peak in 1965 was associated with a sharply reduced surplus on current account.

The scarcity of labour meant that the initial impact on profitability of the 1961 revaluation on profitability was sustained. Market conditions pushed up the expected real wage which unions were able to negotiate. There was no slackening in the pace of money wage increases as a result of the boost to real wages from falling import prices in 1961 and 1962. Employers with newly installed plant were bidding away workers from older plant, which was therefore being scrapped at an

accelerated pace. The capital stock was on average at its "youngest" in 1962-63.¹ The rate of growth of the capital/labour ratio increased in manufacturing from 6.3% p.a. (1955-61) to 7.6% p.a. (1961-65) (see Table 8.3) and even more markedly in non-manufacturing business from 4.3% p.a. to 5.8% p.a. over the same periods.

Table 8.3

Summary Indicators of Factors Influencing Profitability,
1961-65

(% p.a. growth rates)

A.	Profit rate		Profit share	
	mf	non mf	mf	non mf
1950-55	2.3	8.3	1.7	5.0
1955-61	-5.6	-2.3	-2.5	0.1
1961-65	-6.3	-3.7	-2.4	-1.5

B.	U rate ^a	K/L	RULC mf	WG sh. wld mf exports ^a	Import penetr. ^a	Capacity utiliz. ^a
50-55	-3.7	2.0	-3.2	8.1	8.7	3.9
55-61	-3.5	6.3	2.6	4.9	6.7	-2.9
61-65	-0.2	7.6	0.6	-1.1	5.9	-0.5

C. ^b	Warranted $\uparrow$ in real prod. wage		Actual $\uparrow$ in real prod wage		Warr. $\uparrow$ in cons. wage		Act. $\uparrow$ in cons. wage	
	mf	bus	mf	bus	bus		bus	
50-55	6.4	7.3	5.5	5.0	7.9		5.6	
55-61	4.3	4.4	6.6	4.8	4.2		4.5	
61-65	4.7	4.2	6.5	5.0	4.5		5.3	

Notes: ^a change in % points

^b The full decomposition of the growth of warranted real product and consumption wages showing the contribution of capital costs, changes in the terms of trade and in direct and indirect taxes is given in Tables 4.11, 4.12, pp. 141-2.

Definitions of the data series are provided in the data appendix to this chapter.

1 R. Krengel, "Drastische Verschlechterung des Altersaufbaus und des Modernitätsgrades des industriellen Anlagevermögens in der Bundesrepublik Deutschland", VzW, 1 (1978), p.24.

Developments on the external side reinforced the effects on distribution of adjustment to labour shortage. Effective protection fell over this period and import penetration continued to rise (from 26.1% to 32.0%). In a detailed study carried out at the Institute for International Economics at Kiel, Donges et. al. have calculated rates of effective protection for different sectors of the German economy. They show that between 1958 (the year before any changes in connection with the formation of the EEC were made) and 1964, whilst there was an increase in effective tariff protection vis a vis the rest of the world, as a result of the harmonization of all EEC versus the rest of the world tariffs, protection within the EEC fell dramatically. The same pattern is shown by the more comprehensive measure of effective total protection: for industry as a whole (i.e. manufacturing plus mining), average effective protection in 1958 was at a rate of 14.9%; by 1964, the average for intra-EEC trade was 3.4% and for third countries, 22.1%.¹ In their 1965/66 report, the Council of Experts made specific reference to the role of increased import competition in placing a limit on price rises and thereby contributing to a deterioration in profits.²

The growth of unit labour costs as the result of the labour market situation fed through to a deterioration in relative unit labour costs. This contributed to the reduction in profitability and also combined with the direct effects of the revaluation on price competitiveness to produce a decline

1 Donges, Protektion, 1973, Table 10, p.80.

2 SVR JG 1965/6, Z 102, p.63.

in Germany's share of world export markets (from 20.3% in 1961 to 19.2% in 1965).¹ From the disaggregated EEC data (presented in Table 4.9 in chapter four), it can be seen that for three important branches: chemicals, machinery, and transport with above average levels of import penetration and export shares in 1965, profit rates and shares fell faster than the manufacturing average from 1961 to 1965.

The pattern of decline of profitability in manufacturing and non-manufacturing business over the years from 1961 to 1965 is rather similar (see Table 8.3) and suggests that a greater role was played by factor supplies as opposed to increasing openness of the economy. For the first time, the profit share in non-manufacturing business declined, and as was the case for manufacturing, accounted for about 40% of the decline in the rate of profit. Once again, rising capital costs meant that for both manufacturing and the broader category of business, the growth of real product wages which would have left the net rate of profit unchanged, was less than the growth of labour productivity (see Table 8.3 and Table 4.11, p.141).

Between 1961 and 1965, there was a reduction in the domestic labour force of 243,000 due to the fall in the size of the active population and to lower participation rates. The effect of this on employment was offset by a reduction in unemployment of 123,000, a further inflow of immigrants from Eastern Europe of 186,000 and most importantly by the

1 Batchelor, Industrialisation, Table 4.2, p.50.

recruitment of 840,000 Gastarbeiter.¹ The inflow of labour mitigated but did not eliminate the labour shortage. By 1965, only 0.5% of the labour force was unemployed whilst vacancies amounted to 2.4% of the labour force. The policy analyses conducted at the time by the OECD as well as by the various German authorities and expert panels referred persistently to the problem of inadequate availability of labour. Nevertheless, it is difficult to provide conclusive statistical confirmation of the extent of shortage.

Studies of the pattern of the variance of wages in developed economies have found that a narrowing of differentials occurs at times of peak demand for labour.² Those for Germany show inter-industry differentials declining until the mid sixties and then widening from the mid sixties to the mid seventies.³ There is some additional evidence which lends support to the view that labour shortage was more severe in the first half of the sixties than in the later years. A clear difference between the two periods lies in the supply elasticity of foreign workers to employers. It was only after 1966-67 that Gastarbeiter were recruited on a wide scale. Before that, recruitment was concentrated in a few

1 SVR JG 1964/65, p.51; JG 66/67, p.48; JG 69/70, p.14; JG 70/71, p.15.

2 For example, A. Okun, "Upward mobility in a high pressure economy", BPEA, 1, (1973) 207-252, M. Wachter, "Cyclical variations in inter-industry wage structure", AER, LX, 1 (1970), 75-84.

3 H. Gerfin, "Die interindustrielle Lohnstruktur in der Bundesrepublik Deutschland: Neue Tendenzen und ihre möglichen Ursachen", JfNS, 192 (1977), 127-147 and J. Cornwall, Modern Capitalism, (Oxford, Martin Robinson, 1977), p.94, Table 5.7.

branches and amongst large companies only.¹ For institutional reasons and because of lack of experience in the employment of foreign workers, it appears that the tension in the labour market in these years was not fully released by the existence of a pool of potentially available foreign labour.

The social and political limits to the absorption of foreign labour were highlighted in 1964-65 when the employers' association countered union claims for a further reduction in the working week by suggesting that such a cut would lead to the need for more foreign workers. The BDI and BDA followed up the call made by Erhard in 1964 for longer working hours in order to dispense with foreign workers, by pointing out that already one million jobs were taken by foreigners.²

In a study of wage rates in different industries in the years from 1953 to 1963, it was found that there tended to be an inverse relationship between the level of negotiated wage increases and of supplementary increases at the plant level. For example, the chemical industry had the highest negotiated increase but the lowest supplementary one, and textiles had a well below average negotiated increase but the highest supplementary increase.³ It appears that in the more poorly organized industries, the union was unable to negotiate wage increases in line with the wage leader, yet the labour market situation ensured that plant level supplements kept actual

1 Gerfin, JfNS, 1977, p.138.

2 Castles, & Kosack, Immigrant Workers, 1973, pp.168-170.

3 H-A. Pfromm, Konflikte solidarische Lohnpolitik, (Göttingen, 1975), p.65.

wages growing in line. In the case of textiles, actual wages actually grew faster than they did in chemicals. Thus for the period to the mid sixties, there was a widening of the variation between industries in the negotiated increases secured, but a narrowing of the variation in actual wages.¹

It is interesting to note that during this period when market conditions operated to shift the balance of power in wage negotiations in favour of the unions, the employers' associations were able to increase the level of cohesion between employers and to contribute to a realignment of the centre of gravity in the union movement toward moderation. As discussed in chapter seven, following an analysis of the differential effects of rising unit labour costs on the profitability of firms within and across sectors, the employers' association undertook to raise the level of discipline amongst employers in granting money wage increases. They identified the distortion emerging between industrial branches where profitability was falling and growth endangered, and non-manufacturing sectors such as construction and services where an inflationary response to rising unit costs was more likely.

The policy was implemented in 1962-3 in the engineering industry. As discussed in chapter seven, it was at this time that IG Metall was attempting to establish dominance in the DGB over IG Bau. IG Metall began the 1962 wage round with an aggressive campaign based explicitly on raising the share of wages in national income. The following year, when the

1 Gerfin, JfNS, 1977, chart 1, p.129, chart 2, p. 141.

employers raised their offer from zero to exactly the expected increase in productivity, the union again sought to establish that only wage increases sufficient to shift distribution would be acceptable. IG Metall called a strike which was met by a highly effective region-wide lock-out. The employers' resolve was strengthened by the down-turn in orders for engineering goods and not surprisingly, the union's arguments about the favourable effect on demand of an increase in the wage share did not carry weight at the bargaining table. IG Metall's lack of success in the 1963 wage round, and the increased moderation reflected in the DGB's 1963 Grundsatzprogramm reinforce the view that it was the forces of supply and demand in the labour market over the period and not an exogenous rise in union bargaining power which led to the average growth of money wages of 8.3% p.a. Further support for this interpretation is provided by the fact that actual earnings grew by one fifth more than did negotiated increases in wage rates, (a measure of so-called wage drift). Supplementary wage increases at plant level are outside union control.

2.4 Interruption to the decline in profitability in manufacturing, 1965-1969

Profitability fell sharply with the fall in capacity utilization in 1966-67 but recovered rapidly, leaving the net rate of profit in manufacturing in 1969 almost two percentage points above its level in 1965. However, the trend was only interrupted in manufacturing: in non-manufacturing, both the rate and share of profit continued to decline at a faster rate

than was the case in the previous cycle. There is a relationship between the seriousness of the downturn in the 1965-69 cycle and the interruption to the trend decline in manufacturing profitability, but it appears that other factors played a role as well.

In view of the discrepancy between the record in manufacturing and non-manufacturing business in this period, it is instructive to note that an improvement rather than a deterioration occurred in the contribution of capital costs to the warranted real product wage increase in manufacturing and there was a substantial positive contribution from a reduction in the cost of material inputs to manufacturing (see Table 8.4 and Table 4.11, p.141). There was a slight increase in the rate of productivity growth in manufacturing as compared with the previous cycle (from 5.6% p.a. to 5.8% p.a.) whilst the rate of productivity growth actually slowed down in non-manufacturing.

This does not appear to accord with the fact that the growth of the capital/labour ratio slowed in manufacturing and increased in non-manufacturing. A possible resolution of the paradox is provided by the greater concentration of the effects of the recession within manufacturing and the extent to which rationalization occurred there as a consequence. In manufacturing, there was a sharp slow-down in the rate of decline of average hours worked per week over this cycle (from just less than 1% p.a. between 1961 and 1965 to only 0.3% p.a.). In business as a whole, however, reductions in hours continued at a faster rate than before - increasing to a rate

Table 8.4

Summary Indicators of Factors Influencing Profitability,
1965-69

(% p.a. growth rates)

A.	Profit rate		Profit share	
	mf	non mf	mf	non mf
1950-55	2.3	8.3	1.7	5.0
1955-61	-5.6	-2.3	-2.5	0.1
1961-65	-6.3	-3.7	-2.4	-1.5
1965-69	2.4	-4.2	1.3	-2.2

B.	U rate ^a	K/L	RULC mf	WG sh. wld mf exports ^a	Import penetr. ^a	Capacity utiliz. ^a
50-55	-3.7	2.0	-3.2	8.1	8.7	3.9
55-61	-3.5	6.3	2.6	4.9	6.7	-2.9
61-65	-0.2	7.6	0.6	-1.1	5.9	-0.5
65-69	0.2	6.2	0.6	0.3	7.0	2.4

C. ^b	Warranted ↑ in real prod. wage		Actual ↑ in real prod wage		Warr. ↑ in cons. wage	Act. ↑ in cons. wage
	mf	bus	mf	bus	bus	bus
50-55	6.4	7.3	5.5	5.0	7.9	5.6
55-61	4.3	4.4	6.6	4.8	4.2	4.5
61-65	4.7	4.2	6.5	5.0	4.5	5.3
65-69	6.7	5.4	5.7	5.5	2.7	2.8

Notes: ^a change in % points

^b The full decomposition of the growth of warranted real product and consumption wages showing the contribution of capital costs, changes in the terms of trade and in direct and indirect taxation is given in Tables 4.11, 4.12, pp. 141-2.

Definitions of data series are provided in the data appendix to this chapter.

of decline of 1.1% p.a..¹ This implies a very rapid rate of decline for non-manufacturing business and is consistent with the different pattern of output per person recorded. The capacity utilization effects both with regard to capital and labour costs were greater in manufacturing industry.

¹ Calculated from BLS data (U.S. Government, Underlying Data, 1984) on hourly and per person labour productivity (manufacturing) and from RWI data (Schmidt, "Das Anlagevermögen", 1982) on hourly and per person capital productivity (business).

The indicators of profitability in tradeables (import penetration, relative unit labour costs), show a continuation of the downward pressure on profits over this period (see Table 8.4). Relative unit labour costs deteriorated by about the same amount as over the previous cycle and import penetration increased. However, the ground lost in the previous cycle in the share of world export markets was partially recovered suggesting a greater attentiveness to export sales. There was a further reduction in effective protection over this period: by 1968, effective protection versus other members of the EEC had fallen from 3.4% to zero. Donges et. al.'s data show that from 1964 to 1970, effective total protection versus third countries fell from 22.1% to 19.3%.¹

To summarize, there was greater scope for real wage increases consistent with unchanged profitability due to the rise in capacity utilization, the improvement in productivity growth and the favourable shift in the "terms of trade" for manufacturing (see Table 8.4 and Table 4.11, p.141). This, combined with the decline in the growth of actual real wages due to the effects of the recession, plus the successful implementation of an incomes policy in the upswing following the recession outweighed the degree of monopoly factors operating through international competition.

The 1966-67 recession differed from previous troughs both in the extent of the decline in output and in particular, in the degree to which firms shed labour. Labour-shedding

1 Donges, Protektion, 1973, Table 10, p.80.

occurred both through the laying off of employees who would typically have been carried through a cyclical downturn and through the closure of plants. The extent of labour-shedding (see chapter six) makes the growth of productivity in the upswing especially noteworthy, since it suggests that there must have been an effect additional to the more efficient use of overhead labour than had been usual in the past.

The Council of Experts devoted a section of their 1969/70 report to an analysis of the so-called productivity miracle. They suggest that the recession had the effect of creating particularly favourable conditions for growth as many firms scrapped old plant, undertook investment with a high rationalization content, and reorganized the working environment to secure an increased intensity of labour. There was also a tendency toward "rationalization mergers" between firms.¹ The share of equipment investment in total investment increased from 61.6% to 66.9%² (for non-agricultural business) and although the share of total investment in GDP fell from 14.3% in 1965 to 13.0% in 1969, the share of private investment in equipment peaked in 1969.

Following the replacement of the Christian Democrat economics minister by Karl Schiller with the formation of the Grand Coalition government in 1966, and the development of the concerted action procedure for tripartite discussion, a consensus emerged about the need to bolster the recovery of

1 SVR JG, 1969/70, Z 50-54.

2 VGR, Revidierte Ergebnisse 1960 bis 1981, 1982, T.3.19, pp.186-190.

profitability and employment following the recession by limiting wage increases. The unions agreed to increase their discretion in wage bargaining (i.e. to refrain from using their bargaining power to the full).¹ This concession on the part of the unions was due to their political support for the Social Democrats who were the leading partner in terms of economic policy in the Grand Coalition and were elected to govern as the major party in 1969. They also expected improvements in the "social wage". This pact explains the acceptance of the increased burden of direct taxation on the real consumption wage over this cycle (see Table 8.4 and Table 4.12).

In 1968, negotiated wage rates rose by less than at comparable stages of previous upswings. For key branches, collective bargaining agreements were for moderate increases to run for long periods in exchange for improvements in job security. The result was that by mid 1969, i.e. after two years of upswing, negotiated wage rates were only some 6% higher than the year before.²

The Council of Experts warned of the dangers of an unbalanced course of distribution in the upswing and proposed that the large increase in profitability which had occurred in 1968 should be moderated in 1969.³ In their 1969/70 report

1 There is a useful discussion of the concept of variable bargaining intensity and its relationship to incomes policies in Flanagan et. al. Unionism, 1983, pp.25-29.

2 SVR JG 1969/70, Z 77-8.

3 Delays in the payment of profits taxation provided an additional boost to post-tax profits in 1968-69. SVR JG, 1969/70, Z 81.

they argued that real wages could have risen by 2.6% points more over the period from 1965 to 1969 without threatening price stability (i.e. by placing downward pressure on profitability). Their calculations involved estimating the effect of changes in the terms of trade, employers' social security contributions and value added tax on the scope for cost-neutral real wage increases afforded by the rise in productivity.¹ As Table 8.4 shows, real consumption wages were growing at little more than one half the rate of the previous cycle.

As predicted by the Council of Experts, the extent of the swing in distribution at a time of strong export and investment demand resulted in a breakdown of "discipline" on the part of both employers and employees. Unofficial strikes were rapidly settled with substantial enterprise and plant level wage increases. Wage drift of 2.4% points was recorded for 1969.² The threat provided to the unions by the success of the unofficial action in 1969 led to a change in union strategy. They were no longer able or willing to deliver the same degree of bargaining restraint.

2.5 Falling profits, 1969-1973

The striking characteristic of the years from 1969 to 1973 was the very sharp shift in distribution away from profits. The net rate of profit declined more sharply over the cycle than over any of the previous cycles but for the

1 SVR JG, 1969/70, Table 4, p.24, Z 76.

2 Flanagan et. al., Unionism, 1983, p.247.

first time most of the decline was accounted for by a shift in distributive shares (see Table 8.5). In both manufacturing and non-manufacturing business, over 80% of the fall in the rate of profit was accounted for by a falling profit share. The net profit share in manufacturing fell by one quarter in four years i.e. at an annual rate of 7%. The net rate of profit fell by 8.1% p.a. to a level of 15.2%. In non-manufacturing a similar pattern was recorded, although the extent of the decline was not as great, representing more of a continuation of developments in the previous cycles. In manufacturing there was a return to the pace of decline which was interrupted in 1965-69, i.e. in each cycle from 1955 until 1965, profitability declined in manufacturing at an increasing rate. If this rate of decline had continued at the same rate without interruption, then a rate of decline of about the 8% recorded would have been expected by simple extrapolation in 1969-73.

However, it will be argued here that the decline in profitability from 1969 was not simply the outcome of the catch-up of wages following the collapse of the concerted action incomes policy in 1969-70, nor of a continuation of the developments in 1961-65. The labour market remained taut during the years from 1969 to 1973 - unemployment remained about or just below 1% and vacancies fluctuated between 2 and 3% of the labour force. Yet the factor supplies explanation for the decline in profits does not appear to be sufficient for this period. Firstly, the labour supply situation may have been somewhat easier than in the first half of the

Table 8.5

Summary Indicators of Factors Influencing Profitability,
1969-73

(% p.a. growth rates)

A.	Profit rate		Profit share	
	mf	non mf	mf	non mf
1950-55	2.3	8.3	1.7	5.0
1955-61	-5.6	-2.3	-2.5	0.1
1961-65	-6.3	-3.7	-2.4	-1.5
1965-69	2.4	-4.2	1.3	-2.2
1969-73	-8.1	-4.0	-7.0	-3.7

B.	U rate ^a	K/L	RULC mf	WG sh. wld mf exports ^a	Import penetr. ^a	Capacity utiliz. ^a
50-55	-3.7	2.0	3.2	8.1	8.7	3.9
55-61	-3.5	6.3	2.6	4.9	6.7	-2.9
61-65	-0.2	7.6	0.6	-1.1	5.9	-0.5
65-69	0.2	6.2	0.6	0.3	7.0	2.4
69-73	0.3	6.4	8.1	2.6	3.0	-4.5

C. ^b	Warranted ↑ in real prod. wage		Actual ↑ in real prod wage		Warr. ↑ in cons. wage		Act. ↑ in cons. wage	
	mf	bus	mf	bus	bus		bus	
50-55	6.4	7.3	5.5	5.0	7.9		5.6	
55-61	4.3	4.4	6.6	4.8	4.2		4.5	
61-65	4.7	4.2	6.5	5.0	4.5		5.3	
65-69	6.7	5.4	5.7	5.5	2.7		2.8	
69-73	4.2	4.5	6.6	5.8	2.9		4.2	

Notes: ^a change in % points

^b The full decomposition of the growth of warranted real product and consumption wages showing the contribution of capital costs, changes in the terms of trade and in direct and indirect taxes is given in Tables 4.11, 4.12, pp. 141-2.

Definitions for the data series are provided in the data appendix at the end of this chapter.

1960's, and secondly, the simulation results in Tables 1.1 and 1.2 of chapter one suggest that adjustment to labour shortage is highly unlikely to produce such a large shift in distribution against the share of profits. Changes in the bargaining strength of the trade unions not directly related to changes in the unemployment rate appear to have played a

significant role, along with a further rise in the pressure of competition in product markets.

Although by 1969 unemployment had fallen back below 1% after being 1.7% in 1967 and 1.2% in 1968, for reasons noted above (in section 2.3), it seems that this did not correspond to as tight a labour market as it would have done earlier in the decade. The reason lies with the role of the Gastarbeiter. Recruitment of immigrant workers was put on a different footing after the recession, with the recognition that Gastarbeiter had become a permanent requirement of the German economy. Although there was still a reserve of unemployment in 1968, a new agreement for the recruitment of guest workers was concluded with Yugoslavia. There was a reorientation of policy toward the immigrant workers with more emphasis on long-term integration both of the workers and of the growing number of dependents who were joining them.¹ The widening dispersion of inter-industry wages between 1969 and 1973 does not support a hypothesis of increasing labour shortage. Even if 1970 is taken as the more correct indicator of the peak (because of the effect of the incomes policy), there is little difference between the variance between 1970 and 1973.²

Thus it was not mainly adjustment to a growing shortage of labour over the cycle which led to the shift in distribution (although continuing adjustment to the reduced availability of labour no doubt contributed to the decline).

1 Castles & Kosack, Immigrant Workers, 1973, p.42.

2 Gerfin, JfNS, 1977, Chart 1, p.9.

It seems probable that it was accounted for by an upward shift in union bargaining power for a given rate of unemployment and a marked increase in competitive pressure in product markets. Prompted by the unofficial action of their members in 1969 and again in 1973, the unions reduced the degree of bargaining restraint which had been exercised in 1968-69 in the context of the concerted action agreement (see section 2.3 of chapter six). There is also evidence suggesting there was an increase in bargaining power. For the first time since early in the 1950's union membership density increased. In addition, the unions were able to extract from the government an important change in industrial relations legislation which enabled an increase in official union presence at plant level, as well as an increase in employee representation in codetermination.

The 1972 Amendment to the 1952 Works Constitution Act rolled back important elements of the defeat in 1952 and in so doing provided the unions with a means of increasing their role at plant level. The 1972 amendment increased the number of works council members, especially those released from regular work, and allowed most unions to increase their presence within the works councils. It deemphasized the non-union character of the works council, "underlining instead its informal status as the institutional core of the union work-place organization". The new Works Constitution Act gave unions access rights to works councils, entitling, for example, works council members to union training courses at the employer's expense.

The 1972 amendment, although this was rarely stated openly, represented a massive increase of union security

within the plant and thereby considerably improved the conditions of union activity at the workplace.¹

Part of the reason for the rising density of union membership in the early seventies² was the increase in tacit closed shop agreements between employers and works councils. This reflected the increased codetermination rights of the works councils from 1972 and the influence of the unions within the works councils.

The reduction in bargaining restraint in 1970 led to money wage increases of nearly 17%. The rise in union bargaining power enabled the unions to secure wage rises of nearly 10% p.a. in the slight cyclical downturn of 1971 and 1972. An important difference between the period 1969-73 and the previous one is that employees were able to get money wage increases to cover the substantial increase in income tax. A way of illustrating this is to note that for the business sector as a whole, productivity grew by 3.9% p.a. but increased income tax meant that if real wages grew along with productivity, take-home pay would only rise by 1.6% p.a.. In fact real consumption wages rose by 4.2% p.a., contributing to the sharp decline in the profit share (see Table 8.5).

It is difficult to account for the poor performance of productivity growth especially in manufacturing industry in this period. From a rate of growth of 5.8% p.a. in the

1 Wolfgang Streeck, "Codetermination: the fourth decade", International Institute of Management, Berlin, Discussion Paper, 1983, pp. 20-21.

2 Membership of the DGB as a proportion of dependent employees increased in 1970 for the first time since 1951 and continued to rise to 1973 (29.6%, 1969; 31.5%, 1973). Bergmann, Gewerkschaften, 1979, Table 20, p.459.

previous cycle, productivity growth fell to 3.9% p.a.. As discussed in chapter six, this was below the average of the other major European economies during the early seventies. The slow-down in productivity growth in non-manufacturing business continued. This generalized slow-down cannot be explained by any deceleration in the growth rate of the capital stock. In non-manufacturing business, the gross capital stock was growing faster (at a rate of 8.5% p.a.) than in any earlier cycle, and in manufacturing, it was growing faster than in the 1965-69 cycle (at 6.3% p.a.). Since an increasing rate of growth of the capital stock with a constant labour force would be associated ceteris paribus with a fall in the average age of the capital stock, it would be expected that labour productivity growth would have increased or at least been maintained. However, the ceteris paribus assumption is misleading in this connection because we are not dealing with the transition between two steady states each with a balanced age structure of equipment. There was a significant change in the age structure of the capital stock.¹ Between 1960 and 1970, there was still a slight reduction in the percentage of the oldest plant but a much greater fall in the newest plant - the share of equipment less than five years old fell from 50% to 37%.²

Part of the decline in labour productivity growth (per

1 These calculations are based on assumptions of conventional lives of equipment and would not therefore reflect any acceleration in the rate of scrapping, thus understating the actual change in the age structure.

2 Krenzel, VzW, 1 (1978), p.24.

person employed) is accounted for by a reduction in hours worked. In manufacturing there was a resumption in the rate of decline of average hours begun in the first half of the 1960's with a per annum fall of 1.1% p.a.. For business as a whole, there was a faster rate of decline: 1.7% p.a. It is possible that difficulties in work organization also played some role in the slowdown in productivity growth in manufacturing.

There are two aspects to the role of Germany's international trade in contributing to the decline in profitability in these years. First, a number of indicators suggest that there was an increase in the intensity of international competition. Import penetration increased from 39% to 42%. With the implementation of the Kennedy Round of tariff cuts from 1968 to 1972, there was a general reduction in protection and therefore an increase in competition in product markets. The second aspect concerns the rapid appreciation of the D-Mark. As argued in connection with the revaluation in 1961, the impact effect on profits of a revaluation will only persist to the extent that (a) money wage increases do not decelerate to reflect the effect on prices of the higher exchange rate and (b) businesses are not able to maintain their profit margins on export sales by increasing their foreign prices by the amount of the revaluation.

From 1969 to 1973, Germany's relative unit labour costs deteriorated by an extraordinary 8.1% p.a.. This was due entirely to the appreciation of the D-Mark. If the change in

the parity of the D-Mark is excluded, there is an improvement in Germany's relative unit labour costs of 1.7% p.a..

The pricing behaviour of German firms in response to the appreciation is striking. They did not raise their foreign prices to protect their profit margins. In fact, whilst the nominal exchange rate rose by an average of 7.2% p.a., German export prices in D-Marks only increased by 3.7% p.a. - an index of world export prices of manufactures showed an increase of 9.1% p.a. indicating that the foreign currency price of German exports rose by just above the average rate. However, given that German exports are concentrated in sectors with a relatively low price elasticity of demand and that presumably in some cases German firms were amongst the price leaders by this time, the limited price rises are extraordinary. The price restraint shown makes more explicable the fact that Germany's share of world exports of manufactures continued to rise from 1969 to 1973, exceeding the previous peak of the early sixties.

From the disaggregated Eurostat data (Table 4.9, p.127), chemicals stands out as the archetypal industry in which profitability fell sharply in this period: declining cost competitiveness due to the appreciation of the exchange rate forced profitability down. The sector relies heavily on trade (having an above average level of import penetration and share of exports in value added) and in parts of the industry producing homogeneous or standard products must take prices in international markets. Chemicals experienced a fall in both the rate and share of profits greater than the manufacturing

average over the final cycle, and recorded a further rise in import penetration and export share. In electrical equipment, there was also a sharper than average fall in profitability and an increase in export share. An increase in import penetration was perhaps prevented by the pursuit of defensive pricing policies.

In a cross country study of export pricing behaviour using data from 1958 to 1972, Artus found that German export prices were much more sensitive to foreign prices than they were to domestic costs.¹ This relative sensitivity to foreign prices is greater than for any of the other countries in the sample. It is also striking that German export prices were found to be significantly positively related to capacity utilization (the US was the only other country for which this was true) confirming the impressionistic analysis that German firms took the opportunity to raise their export prices even at the cost of loss of volume when they could sell easily in domestic markets. Over this cycle (i.e. peak to peak), capacity utilization fell quite markedly (Table 8.5) and Artus' results confirm the interpretation that as a consequence, export effort was stepped up.

3. Conclusion

The detailed analysis undertaken for each of the post-war cycles indicates that a complex combination of forces lay behind the trends in distribution and profitability, with the balance between them changing over the course of the period.

1 Artus, IMF Staff Papers, 1974, pp.583-604.

From 1955 when profitability began to decline, the above analysis suggests that trends in the availability of labour and in the openness of the tradeables sector to foreign competition were reflected in changes in profitability. Over the period as a whole, capacity utilization appears to have played a minor role in cross-cycle developments.

From 1955 to 1961, the transition from labour surplus to labour shortage was the focus of attention; in the following period, adjustment to a tightening labour supply constraint appears paramount. Between 1965 and 1969, the trend decline in manufacturing profitability was interrupted, and the recession of 1966-67 and its policy aftermath is identified as having played a role. The most dramatic fall in profitability occurred over the final cycle, and here the evidence suggests that key parts were played by union bargaining power and the increased pressure of international competition, in a period when the exchange rate appreciated substantially.

With a monocausal explanation ruled out, attention turns in the next chapter to whether it is possible to formulate and test a regression equation capturing the major factors identified above.

DATA APPENDIX TO CHAPTER EIGHT

1. Sources of Data

<u>Series</u>	<u>Sources</u>	<u>Notes</u>
1. Net profit rate Net profit share Warranted increase in real wages		For definitions and sources see App. to chapter four, pp. 144-5.
2. Unemployment rate	a: T12*	Unemployment/Labour Force
3. Capital/labour ratio (manufacturing)	b: T3.50 T2.4 c: TA20 d: T23	Gross cap stock at const. prices (b T3.50 lnkd to c at 1960) / Employment (b T2.4 linked to d T23 at 1960).
4. Relative unit lab costs (manufacturing)	e: T10 f: p.53	German unit labour costs (\$)/ wted ave of US, UK, Fr, It labour costs (e, wts from f) linked to f at 1964.
5. West Germany's share of world manufactured exports	g: T20-22	
6. Import penetration (manufacturing)	a: T44*, 45* b: T3.2 d: T2	Imports of semi- & finished manuf. (a T45*) / [gross value added manuf. (b, d) - exports of mf (a T44*) + imports of mf].
7. Capacity utilization (manufacturing)	c: TA43	

SOURCES:

- a. SVR JG 1977/78, Anhang VII.
- b. Statistisches Bundesamt, VGR, Fachserie 18, Reihe S.5, Revidierte Ergebnisse 1960 bis 1981, 1981.
- c. DIW, Daten zur Entwicklung ..., 1977.

- d. Statistisches Bundesamt, VGR, Fachserie N, Reihe 3, Revidierte Reihen ab 1950, 1972.
- e. US Government, Underlying Data for Indices of Output/Hour etc., BLS, 1984.
- f. IMF International Financial Statistics Yearbook, 1979.
- g. National Institute Economic Review, 1960, 1969, 1972.

Chapter Nine

Broad Hypotheses and Interpretations

1. Broad Hypotheses

1.1 Introduction

The descriptive analysis of developments across each cycle in chapter eight identified factors which appear to have played a role in determining the course of profitability in Germany over the years from 1950 to 1973. No single theory emerges as capable of explaining profitability over the period as a whole. It therefore seems unlikely that in an aggregate statistical analysis, the data would permit a clear adjudication between competing hypotheses. Nevertheless, it is important to distinguish between on the one hand, hypotheses which suggest different channels through which a common underlying change in the economy has its effect on profitability and on the other, hypotheses which specify different underlying changes as the motive force for the trend in profitability. In the first case, several channels or transmission mechanisms may well be in operation together and the difficulty in disentangling them statistically is not critical. Other indicators (such as institutional changes) discussed in the detailed analysis above may help to confirm the balance between the processes at work in each sub-period.

In concrete terms, the factor supplies and monopoly power hypotheses rest in part on a common underlying source of the changes in distribution: changing conditions in the labour market. By contrast, a theoretical framework offering a fundamentally different explanation for the course of

profitability arises from the Kaldor-Robinson-underconsumptionist school. In their view, it is aggregate product market conditions which are decisive. We will look at these two groups of explanations in turn.

1.2 The role of the labour market

With the building of the Berlin Wall in 1961, there was a particularly sharp break in the elasticity of the supply of labour to the West German economy. Until the beginning of the 1960's, it can be argued that labour was freely available at the margin at the going real wage. In 1961, registered unemployment fell below 1% of the labour force and from this time it is appropriate to consider the possibility that a falling growth rate of the labour force in a fully employed economy was responsible for the decline in profitability. Thus, the Solow and vintage neo-classical theories which assume the existence of full employment are ruled out until the beginning of the 1960's.

In the period of full employment from 1961, a change in the scarcity of labour relative to capital is consistent with a decline in profitability in both the Solow-type neo-classical theory including the preferred vintage variant and in the monopoly power theory. The theories are not inconsistent - rather, they emphasize different aspects of the process of adjustment to the emergence of labour shortage. However, a coincident tightening of the labour market and shift in bargaining power (reflecting perhaps the cumulative effects of a period of low unemployment) will be difficult to

distinguish empirically.

A further problem of differentiating between hypotheses arises from the two paths through which the rise in money wages associated with a fall in the labour supply growth rate is translated into a rising wage share and falling profitability. In the factor supplies vintage approach, as long as there is a range of plants or of equipment of different vintages, adjustment will occur through accelerated scrapping of equipment in the context of either perfect or imperfect competition. Producers using the least efficient equipment will find that prices are not sufficiently high to maintain the profitability of the plant. But there is an additional constraint on the passing on of cost increases which will affect producers on the most efficient plant as well. In an open economy international competition in both export and import markets will constrain price increases.

Increasing openness of the economy to international competition will increase the weight of world prices in the pricing of import substitutes and of exports and will therefore increase the sensitivity of profitability to changes in relative unit labour costs. Any increase in openness will also directly affect the size of the markup since ceteris paribus there is an increase in the degree of competition in the product markets. Similarly, a rising intensity of international competition due, for example, to a decline in the rate of effective protection, will affect the size of the mark-up for sales of tradeables at home and abroad. Once again it will be difficult to distinguish between the two

hypotheses: compression of profit margins due to increasing openness and/or more intense international competition in product markets and the decline in profitability as a result of the domestic adjustment of the age profile and capital-intensity of equipment to labour shortage. Some support for the notion that both forces were at work is provided by the results of the simulation exercise with the vintage model reported in chapter one. Although it is not clear how much weight can be placed on the results of such a steady state exercise, the simulation showed that the fall in the rate of growth of the labour supply alone would not be sufficient to account for the fall in the share of profit observed. Similarly, a fall in the degree of monopoly alone would not be able to account for the rise in the capital/output ratio which contributed to the observed decline in the rate of profit (see Table 1.1 and pp. 38-9).

In addition to these hypotheses based on changes in labour market conditions deriving from steady state models, the role of disequilibrium in the explanation will be considered. The "disequilibrium hypothesis" also rests on changing labour market conditions. It was argued in chapter five that a number of special circumstances were responsible for the establishment of a very high level of profitability in the early 1950's. For both internal and external reasons, such a high rate and share of profits could not be maintained because of the implications of high profits for growth. A particularly high investment share was associated with the high profitability and produced a rapid rate of growth of the

capital stock. The internal ramifications of this were the absorption of reserves of labour and the move to full employment. This in turn was bound to reduce profits. Kindleberger's discussion of the transition from labour surplus to labour shortage in a dual sector model is one way of depicting this disequilibrium process.¹

An external disequilibrium was also established as Germany's competitiveness increased sharply to the mid fifties. The current account moved into surplus. This created policy problems for the authorities which with full employment in 1961, could not be dealt with by faster growth as a means of increasing the growth of imports. It could only be resolved by revaluation of the D-Mark and the associated reduction in profitability.

Successively larger revaluations were required because the slowdown in growth in the German economy along with rising household savings had the short run effect of exacerbating the tendency toward surplus (see chapter six). This led to the step adjustments of the exchange rate in 1961, 1969 and 1971. Just as the internal disequilibrium was moderated to some extent by policy measures - in particular, the inflow of foreign workers - the external manifestation was moderated albeit in a stop-gap fashion by the accumulation of foreign exchange reserves, capital controls and sterilization.

As was pointed out in chapter three, revaluation of the exchange rate will not result in a lasting change in

1 C.P. Kindleberger, Europe's Postwar Growth: The role of the labor supply, (Cambridge Mass., Harvard University Press, 1967), pp. 6-18.

profitability within the tradeable sector unless it occurs in the context of an upward shift in the "negotiable real wage schedule" i.e. an increase in the expected real wage which unions are able to negotiate through collective bargaining at each rate of unemployment. (We return below to consider the transmission of the impact effect of the exchange rate to the non-tradeables sector.) The reason is that in the absence of any such shift, the initial fall in profitability associated with the revaluation will be eroded over time. There is a temporary rise in the real wage due to the direct and indirect effects of the fall in the prices of imports. However, unless their bargaining strength has been increased, unions are unable to negotiate money wage increases which will maintain the higher real wage. The combination of revaluation and increased bargaining power appears to have been especially important in Germany at the end of the period, i.e. between 1969 and 1973.

It is also possible for a reduction in profitability in tradeables associated with a revaluation (or with any other source) to be transmitted to non-tradeables. A fall in profitability in manufacturing would tend to produce a reallocation of resources away from manufacturing. Although not much weight should be placed on comparative levels of profitability, it is worth noting that the rate of profit appears to have been lower on average in non-manufacturing than in manufacturing. Nevertheless, a shift in resources would still be expected in response to a fall in manufacturing profitability since at the margin, more attractive investment

opportunities in non-manufacturing are likely to have been revealed.

1.3 The role of the goods market and aggregate demand

The feature common to the neo-Keynesian (Kaldor-Robinson) approach to distribution is that shifts in distribution occur in response to changes in the level of aggregate demand. Exogenous changes in the employees' savings propensity or in investment are identified as the underlying cause of a shift in distribution. For example, a trend rise in the personal savings ratio would be associated with a trend decline in the profit share. The transmission mechanism in the Kaldor model operates through the reduction in the pressure of demand associated with higher savings dampening prices relative to nominal wages and therefore shifting distribution toward wages. Similarly, according to Robinson, a decline in the "animal spirits" of entrepreneurs would reduce the pressure of demand in the product market. Distribution would shift in line with the change in the composition of demand from investment to consumption.

An obvious way of testing the neo-Keynesian hypothesis would be to try to detect a trend in capacity utilization. However, the failure of the German data to display such a trend is not sufficient to rule out the hypothesis. The reason is that if, as Kaldor uncharacteristically assumed, adjustment to the exogenous trend in the savings ratio or "animal spirits" is instantaneous, then no trend in capacity utilization would be observed. There would simply be a change

in the composition of demand. Either slow adjustment or the more straightforward underconsumptionist theory in which the actual falling pressure of demand is the cause of the decline in profitability would be reflected in a trend in capacity utilization. Hence, whilst we can rule out the latter on empirical grounds, a different tack is required to evaluate the instantaneous adjustment version.

The neo-Keynesian approach to trends in distribution stresses changing patterns of private sector components of demand. A priori, it would seem that the rising personal savings ratio in Germany would provide support for such an explanation. However, to suggest that there was an incipient lack of demand which was corrected rapidly by the induced shift in the factor distribution of income toward wages flies in the face of a wealth of evidence. At least from 1959-60, the economy was on average characterized by an excessive level of ex ante demand. Even more important from the point of view of the present argument, is the fact that from the Currency Reform onwards, the authorities were concerned that the level of demand was too high. In other words, to give a primary causal status to private savings it would be necessary to argue that the government would have been unable and unwilling to achieve the same outcome for aggregate demand by, for example, running an increasing budget surplus.

Had private savings not increased, the government would have allowed the budget surplus to rise. The government encouraged the further growth of private savings through a series of tax concessions and the rise in household savings,

partly as a result of these incentives, was cited by the authorities as a reason for allowing the government surplus to decline. A second piece of evidence lies in the government's stated unwillingness to guarantee a level of aggregate demand which would secure full utilization of capacity, because it wanted to maintain the pressure on firms to seek markets abroad for their output. This was expressed as the use of export markets and the threat of import competition as a form of competition policy. Specific instances of its use were referred to above in chapter eight.

As was shown in chapter two, a necessary and sufficient condition for a change in the rate of profit at full capacity utilization in a closed economy with imperfect competition and identical firms, is a change in aggregate demand. Changing labour market conditions with a constant level of real aggregate demand will simply be reflected in inflation (or in accelerating inflation, depending on the expectations hypothesis). There would only be a change in distribution and in the rate of profit if the inflation itself resulted in a fall in the level of aggregate demand. This context lies behind the stress which Kaldor-Robinson put on product market conditions as the key to distributional shifts. Yet because of the ability of the government to influence aggregate demand directly through its budgetary policies or indirectly through its policies toward savings, imports, exports and investment, it is difficult to argue that divergent exogenous trends in private sector behaviour toward savings or investment were the underlying cause of distributional shifts.

As documented in chapter seven, the authorities repeatedly emphasized the unacceptability of businesses passing on in higher prices money wage increases associated either with a taut labour market or with increased union bargaining power, as a means of reversing any shift in distribution. The toleration of rising inflation was never viewed as a viable policy response to the pressures arising from the labour market. The social consequences associated with the loss of control of inflation in the interwar years as well as in the brief episode of open inflation in 1948-49 can account for this attitude.

Thus, whilst it is true that ceteris paribus lower household savings would have implied higher demand and less pressure on profit margins, had they in fact been lower, other things would not have been equal. The evolution of effective demand is an essential component of the story of profitability but there seems no case for "privileging" one component, household consumption.

1.4 A synthetic hypothesis

Drawing both on the detailed descriptive analysis of chapter eight and acknowledging the need to account for the phenomena considered important to the demand side explanation, the following broad hypothesis to explain the course of profitability can be formulated. For the initial period to 1955, the obvious explanation for rising profitability is the straightforward effect of rising capacity utilization and the reinforcing effect on labour productivity growth of rapid

investment, in conditions of labour surplus and weak trade unions. Contention is really confined to the latter period: 1955 to 1973. It would appear that elements of all three hypotheses which derive from developments on the supply-side can contribute to an explanation of falling profitability over this period. The three components are: firstly, elements of the factor supplies/capital intensity approach which reflect directly the tightness of the labour market; second, the monopoly power theory which encompasses i) the channel through which labour market tautness is reflected in money wage increases, ii) shifts in union bargaining power, and iii) the intensity of competition in tradeables; and third, the disequilibrium hypothesis which explains the necessary adjustment of the economy to the erosion of an initially elastic labour supply and an undervalued exchange rate.

Before attempting to gather additional support for this hypothesis by conducting a simple regression analysis, the phenomenon of the rising personal savings ratio in West Germany over this period remains to be accounted for in a manner consistent with the explanation proposed. It turns out that a rising household savings ratio is quite consistent with the broad hypothesis. It can either be thought of as having prevented the government from having to run an increasing budget surplus or as preventing the current account of the balance of payments from moving adversely as the economy moved from labour surplus to labour shortage. The latter is Kindleberger's explanation.

In order to account for the failure of the German economy

to display the predicted deterioration of the current account as the labour constraint was met, Kindleberger focused on the specifically German phenomenon of a sharply rising propensity to save out of disposable income.¹ In the standard case at full employment, where the current account deteriorates, it is assumed that overall private sector savings fall, i.e. the rise in household saving is less than the fall in business saving associated with the fall in profitability. However, Germany displayed an increase in household saving sufficient to offset the fall in business saving with the result that a surplus of domestic saving over domestic investment was maintained and reflected in a persistent balance of payments surplus.

2. Testing: The Regression Analysis

2.1 Explaining manufacturing profitability

As an attempt at a summary of the main factors underlying the trends in profitability proposed in the broad hypothesis, a linear multi-variate regression analysis was conducted to ascertain whether there was any significant relationship between the net rate of profit in manufacturing and indicators of the openness of the economy (import penetration), the development of labour costs relative to competitors (which includes an exchange rate term) and a measure of the tightness of the labour market. Capacity utilization was included so as

¹ Kindleberger discusses this in Europe's Postwar Growth, 1967, pp. 28-36, and on pages 128-135 of "Germany's persistent balance-of-payments disequilibrium revisited", BNLQR, 1976.

to capture the cyclical variation of profitability and any cross cycle changes in capacity utilization.

The import penetration term and relative unit labour costs were designed to capture the "degree of monopoly" effect of increasing openness and changing intensities of international competition. Relative unit labour costs and unemployment would be expected to reflect the labour market situation - both labour shortage and its implications for profitability through changes in capital intensity, and increasing union bargaining power. The disequilibrium hypothesis would be captured both by the exchange rate term (in relative unit labour costs) and by unemployment.

Equations to explain profitability using a similar set of variables have been estimated in a number of studies. Funke¹ estimated an equation for the net rate of profit in manufacturing in level form using data from 1961 to 1981. He found a positive and significant coefficient on the capacity utilization term and on the share of German exports in world exports; a negative and significant coefficient on time, on the percentage rate of change in unit wage costs and on relative unit labour costs. Weisskopf² estimated an equation from 1958 to 1981 in logs and found that capacity utilization and the import share were significant and of the expected sign. The coefficient on the lagged unemployment rate was

1 M. Funke, "Einflüsse auf die Entwicklung der Kapitalrentabilität im verarbeitenden Gewerbe in der Bundesrepublik Deutschland", Berlin, unpublished mimeo, 1985.

2 T. Weisskopf, "Sources of profit rate decline in the advanced capitalist economies", University of Michigan, unpublished mimeo, 1985.

positive but insignificant. Sutch and Chan-Lee in an OECD Working Paper¹ also estimate equations for the rate of profit in log form. They use observations for the years 1964 to 1982. As regressors, they use capacity utilization, relative unit labour costs, time and the percentage change in the GDP deflator. Only capacity utilization and relative unit labour costs were significant.

The set of variables in our study appears to have a sounder theoretical basis than those in the studies outlined. In particular, it seems essential to include both relative unit labour costs and import penetration in order to capture the constraints on the ability of firms to pass on unit cost increases. Furthermore, two of the three earlier studies included time as a regressor - clearly time must be eliminated in a satisfactory explanatory equation. The third major difference lies in the period of analysis. None of the other studies uses data before 1958 and thus they omit the period of rising profitability to 1955. The present study does not go beyond 1973 - it would seem likely that a close analysis of the possibility of a change in structure at 1973 would be required because of the effect on profitability of the rapid change in the price of oil. All of the other studies include pre- and post-1973 data but do not test for structural change.

The equation described above was estimated in logarithmic

1 H. Sutch, & J.H. Chan-Lee, "Profits and rates of return in OECD countries", 1985.

form¹ using ordinary least squares with the results reported in Table 9.1. The data series and sources are presented in the data appendix to this chapter.

Table 9.1
Regression Results, Net Rate of Profit, Manufacturing, 1950-73

Dependent variable: Net rate of profit in manufacturing, NPR

Independent variables: Capacity utilization, CAPUT
Import penetration, IMPEN
Relative unit labour costs, RULC
Unemployment rate, URATE.

Period: 1950-1973, annual data.

NPR	CONSTANT	CAPUT	IMPEN	RULC	URATE
Coeff:	-0.864	1.951	-0.219	-0.925	0.069
T-stat:	-0.37	4.25	-2.67	-6.09	2.07

R-bar squared: 0.96 Durbin-Watson: 1.54

LM Test for 1st, 2nd and 3rd order autocorrelation, where the null hypothesis is the absence of autocorrelation:
F(3,16) = 0.599, marginal significance level = 0.625.

Hausman Test for simultaneity, where the null hypothesis is that the OLS estimates are consistent (i.e. there is no simultaneity):
F(5,19) = 2.501, marginal significance level = 0.067.

On the standard criteria of the R-bar squared and the T-statistics, the equation performed satisfactorily, with each of the independent variables having a significant coefficient with the expected sign. The Durbin-Watson statistic was close to the margin of the indeterminate zone at which the possibility of serial correlation must be considered. The

1 Since the unemployment term was a rate, it would seem more intuitively desirable to use the raw data rather than the logarithm. However, the equation performed more satisfactorily with the unemployment rate in logarithms as well.

problems with the Durbin-Watson statistic led to the implementation of a more general test for autocorrelation. A Lagrange Multiplier (LM) test¹ on a regression of the OLS residuals on three lags of the residuals was done to test for the presence of first, second or third order autocorrelation. The test was easily passed (see Table 9.1).

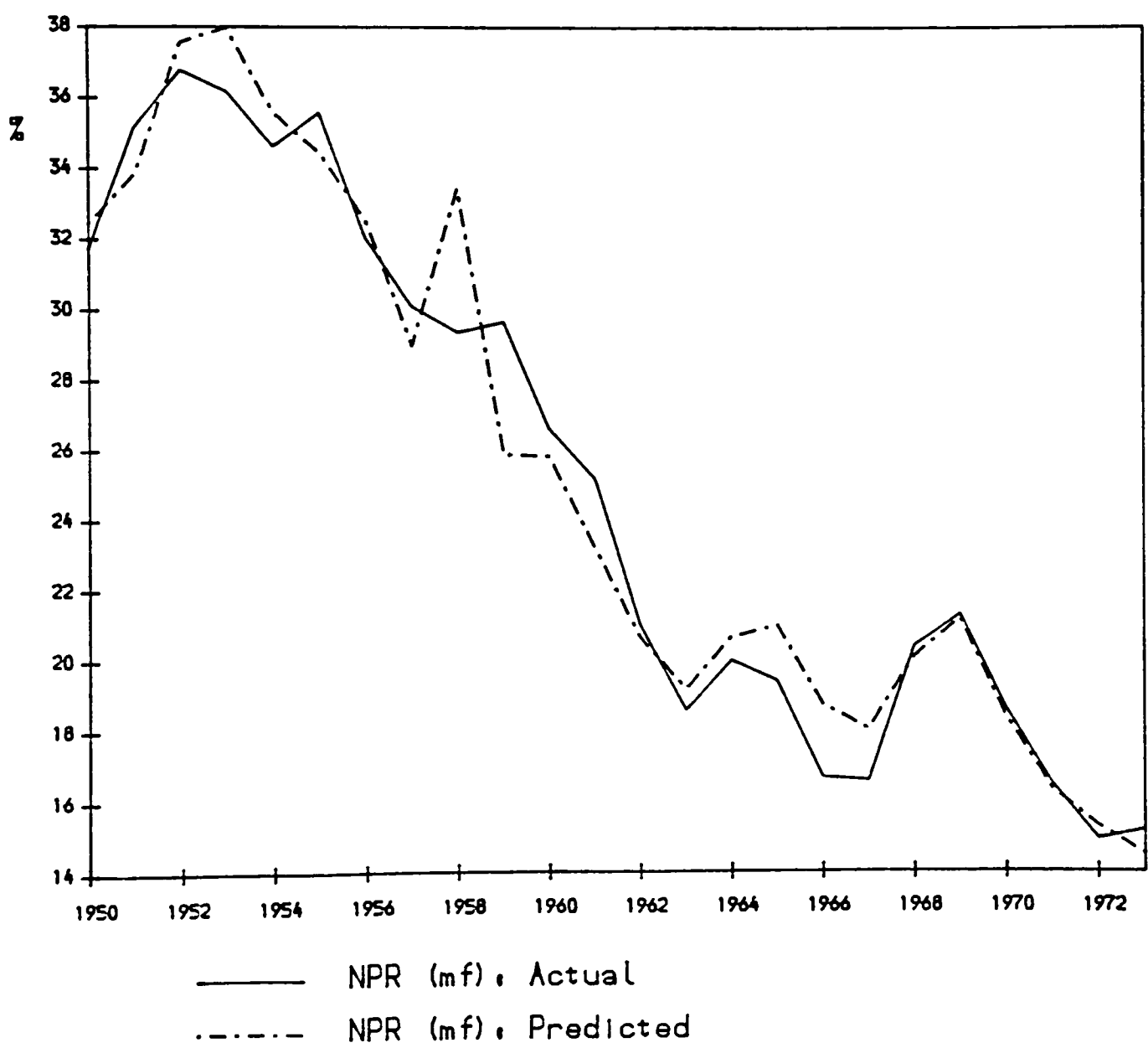
The second test was designed to capture any significant simultaneous equations bias in the equation. This was considered necessary, since for example, changes in unemployment might be thought to be a function of profitability via labour demand or investment functions. Any simultaneity would render the OLS coefficient estimates inconsistent. The Hausman specification test² examines the null hypothesis that the coefficient vector of the OLS regression was equal to the coefficient vector in a two stage least squares regression where two lags of each independent variable was used to create an instrument for the independent variable. The coefficients from the 2SLS regression of the net rate of profit on the instruments for capacity utilization, relative unit labour costs, import penetration and unemployment were, by construction, consistent and if they were not significantly different from the OLS coefficients then there is no evidence of simultaneity. The equation just passed the Hausman test at the 95% level (see Table 9.1). There are therefore grounds for placing some weight on the

1 A.C. Harvey, The Econometric Analysis of Time Series, (Oxford, Philip Allan, 1981), pp.167-175.

2 J.A. Hausman, "Specification tests in econometrics", Econometrica, 46, 6, (1978) 1251-1271.

value of the coefficients from the OLS regression. Figure 9.1 illustrates the actual and predicted values for the manufacturing profit rate, 1950-1973.

Figure 9.1
Actual and Predicted Net Rate of Profit
Manufacturing, 1950-1973



The equation lends support to the hypothesis that a declining availability of labour, increasing openness and an appreciating exchange rate all play a part in explaining the trend in profitability. Using the coefficients from the regression equation, a fall in the net rate of profit of 3.5%

p.a. over the period from 1950 to 1973 is predicted. The actual rate of decline was 3.2% p.a.. Of the 3.5% p.a., the equation estimates show forty per cent (i.e. 1.4% points) due to the rise in relative unit labour costs, just less than this (i.e. 1.3 % points) due to the rise in import penetration, and the bulk of the remainder (i.e. 0.6% points) to falling unemployment. Over the period as a whole, the influence of capacity utilization was small (0.2% points).

2.2 Explaining the profit share and non-manufacturing profit rate

Before looking at the predicted role of each of the independent variables for the explanation of changes in profitability over each cycle as a way of summarizing the findings of the study, the regression results for the profit share in manufacturing, and for the rate of profit in business and in non-manufacturing will be noted.

(i) Manufacturing profit share

Running the same equation as above with the net profit share as the dependent variable results in a fairly similar but less satisfactory equation than was obtained for the profit rate.

Manufacturing net profit share

Period: 1950-1973, annual data.

NPSHARE	CONSTANT	CAPUT	IMPEN	RULC	URATE
Coeff:	3.828	0.645	-0.073	-0.740	0.023
T-stat:	3.21	2.78	1.76	-9.63	1.40

R-bar squared: 0.948

Durbin-Watson: 1.57

As would be expected, capacity utilization has a smaller

coefficient than in the equation for the rate of profit, reflecting the additional effect there of capacity utilization on the capital/output ratio. Nevertheless, it remains significant. The competitiveness coefficient is of slightly smaller magnitude but is once again highly significant. The coefficients on both import penetration and the unemployment rate have the correct sign but the latter is no longer significant at the 5% level, it is significant at 10%.

11) Non-manufacturing and business profit rates

The broad hypothesis proposed to account for the trends in profitability in West Germany contains two components which would be expected to apply at least in the first instance to the tradeables sector: the pressure on profitability associated with overseas competition in the product market and the role of exchange rate changes. However, as argued above, it is plausible that such pressures would be transmitted to the non-tradeable sector. With these arguments in mind the same independent variables were used in the regressions for the non-manufacturing profit rate and the business profit rate. (Sector-specific capacity utilization rates were used).

Non-manufacturing net profit rate

Period: 1950-1973, annual data.

NPRATE	CONSTANT	CAPUT(nonmf)	IMPEN	RULC	URATE
Coeff:	0.602	1.766	0.042	-1.357	-0.055
T-stat:	0.15	2.17	0.41	7.37	1.34

R-bar squared: 0.795

Durbin-Watson: 0.79

Business net profit rate

Period: 1950-1973. annual data.

NPRATE	CONSTANT	CAPUT(bus)	IMPEN	RULC	URATE
Coeff:	0.172	1.829	-0.075	-1.195	0.013
T-stat:	0.07	3.47	1.00	9.02	0.43

R-bar squared: 0.929 Durbin-Watson: 0.60

These equations fit the data much less well than does the equation for manufacturing. For both non-manufacturing and business, manufacturing import penetration and the unemployment rate are not significant, and the Durbin-Watson statistics indicate the presence of serial correlation. Capacity utilization and relative unit labour costs remain strongly significant. The extent of the explanatory power of RULC is rather surprising, suggesting a very rapid transmission of, in particular, exchange rate effects. To check that RULC was not simply operating as a trend variable, a time trend was added to an equation including RULC, with the following result:

Non-manufacturing net profit rate

Period: 1950-1973. annual data.

NPRATE	CONSTANT	CAPUT(nonmf)	RULC	TIME
Coeff:	2.038	1.362	-1.277	0.058
T-stat:	0.52	1.70	7.02	1.88

R-bar squared: 0.775 Durbin-Watson: 0.74.

Capacity utilization and RULC are significant (the former only at 10%), with their coefficients little changed and the time trend is also significant. Hence the RULC variable is not simply acting as a trend. The time trend is positive, suggesting that a variable offsetting the negative effect of

RULC for non-manufacturing profitability has been omitted. Perhaps a measure of concentration of industry in non-manufacturing would fulfill this role. Unfortunately this could not be tested as a time series for concentration in non-manufacturing is not available.

2.3 Applying the manufacturing regression coefficients to each cycle

To conclude the discussion of the major determinants of the course of profitability in Germany, we will compare the predicted changes in the rate of profit in manufacturing (using the coefficients of the regression equation) with the actual changes for each cycle. The weights attributed to the different factors in each cycle will be compared with the conclusions of the cycle-by-cycle descriptive analysis conducted in chapter eight. The aim of this procedure is in part to bring out the shortcomings of the estimated equation as a tool for describing within period changes. The need to look at the data in the institutional and historical context to adequately account for the residuals is clearly illustrated.

1950-55

For this period, the descriptive analysis highlighted the role of rising capacity utilization and rising competitiveness for the increase in profitability. This interpretation is confirmed by the regression estimates. Applying the regression coefficients to the change in capacity utilization, import penetration, relative unit labour costs and

unemployment rates, the role of capacity utilization and competitiveness are clear:

Estimated effects (% p.a.) on the manufacturing profit rate for 1950-55 of:

CAPUT	IMPEN	RULC	URATE	Ttl estim.	Actual.
+2.0	-2.6	+3.0	-0.9	1.4	2.2

Actual profitability rose substantially more in this period than is predicted by the aggregate equation. This is largely accounted for by the fact that although unemployment fell, there was still an elastic supply of labour, with the result that the predicted effect of unemployment was much greater than its effect in practice. Until full employment was reached in 1961, the neo-classical mechanism through which a fall in the growth rate of the labour supply would result in a shift in distribution and fall in the rate of profit could not have operated. Secondly, as documented in chapter eight, there was no shift in these years in the balance of bargaining power toward labour. If anything, the reverse occurred as the employers became better organized. The greater strength of the employers as compared with the employees was reflected in the form of the Works Constitution Act of 1952 which weakened the position of the unions at plant level.

1955-61

For this period, the regression equation assigns the fall in unemployment and the increase in RULC with the largest contributions to the decline in profitability. Increasing

openness and a fall in capacity utilization also contribute.

Estimated effects (% p.a.) on the manufacturing profit rate for 1955-61 of:

CAPUT	IMPEN	RULC	URATE	Ttl estim.	Actual.
-1.3	-1.1	-2.3	-2.1	-6.7	-5.7

This accords well with the descriptive analysis of developments over this cycle, where the period was characterized as representing the transition from labour surplus to labour shortage. The unions were able to take advantage of their strengthening market position by shifting their objectives firmly toward wage increases and the reduction in hours of work without loss of pay. The German economy was becoming more open to competition from abroad and the appreciation of the D-Mark in 1961 put additional downward pressure on the rate of profit.

1961-65

In the earlier discussion, this period was identified as reflecting most clearly the sustained pressure on profitability arising from the growth in the demand for labour relative to its supply. Evidence on the inter-industry dispersion of wage rates was presented in chapter eight in support of the proposition that labour was in particularly inelastic supply in these years. Whilst the regression estimates show rising openness, falling competitiveness and falling unemployment as all contributing to the fall in profitability, the predicted fall underestimates by far the

actual fall.

Estimated effects (% p.a.) on the manufacturing profit rate for 1961-65 of:

CAPUT	IMPEN	RULC	URATE	Ttl estim.	Actual.
0	-1.1	-0.7	-0.6	-2.4	-6.5

The reason for this is the absence from the equation of an adequate indicator of labour shortage. Once full employment was attained in 1961, the unemployment rate ceases to reflect one of the key transmission mechanisms from labour market tension to profitability. As stressed in the theoretical discussion, the neoclassical mechanism operates through the effect on the choice of technique and the average age of the capital stock of changes in the relative growth rates of the labour supply and the capital stock under the assumption of full employment. This period saw the most rapid growth in the capital/labour ratio (Table 8.5), confirming the impression provided by the descriptive analysis that the course of profitability was mainly the outcome of changing relative factor supplies.

1965-69

This is the cycle over which manufacturing profitability actually increased, reflecting the effects on productivity and on wage behaviour of the recession and its policy aftermath. The regression estimates predict no change in the rate of profit, whereas in fact it rose at a rate of 2.2% p.a..

Estimated effects (% p.a.) on the manufacturing profit rate for 1965-69 of:

CAPUT	IMPEN	RULC	URATE	Ttl estim.	Actual.
+1.0	-1.1	-0.5	+0.6	0	+2.2

Capacity utilization and the unemployment rate contribute positively, as would be expected, although the unemployment rate probably does not accurately portray the greater elasticity of the supply of labour in these years associated with the stepping up of the recruitment programme of foreign workers discussed earlier (chapter eight, section 2.4). Growing import penetration continued to exert a constraining influence on profit margins. The negative contribution of relative unit labour costs arises almost entirely from the revaluation of the D-Mark in 1969 - by 1968, the deterioration in competitiveness of nearly 4% which was recorded in 1966 had been recovered but the appreciation meant a fall of 2.4% the following year.

1969-73

The striking feature of the final cycle is the extremely high estimated contribution of the fall in competitiveness to the decline in profitability.

Estimated effects (% p.a.) on the manufacturing profit rate for 1969-73 of:

CAPUT	IMPEN	RULC	URATE	Ttl estim.	Actual.
-2.4	-0.4	-7.1	+0.6	-9.7	-8.5

This reflects the sharp appreciation of the D-Mark over this

period. As noted in the cycle-by-cycle discussion, German firms showed extraordinary price restraint in the face of the appreciation, with the result that profitability was sharply reduced. The exchange rate term appears to be picking up the fact that the high money wage increases achieved by the unions in this period, as a result of the shift in bargaining power, prevented the erosion over time of the effects of the exchange rate changes. The effects of the wild-cat strikes on union behaviour, the change in the trend of union membership density and innovations in industrial relations legislation favourable to the unions were all identified earlier as contributing to the consolidation of the real wage gains consequent on the appreciation of the exchange rate.

The cyclical peak in 1973 was relatively weak as compared with previous occasions largely as the result of the failure of investment to respond in the customary way to the export-led upswing. As shown in Table 6.9, real investment fell in each of the two years following the trough of 1971. Thus it seems that over this final cycle, some contribution to the decline in profitability is made by the Kaldor-Robinson mechanism: a part of the fall in profits was a consequence of the fall in the pressure of demand. This is captured in the estimated contribution of the fall in capacity utilization to the decline in profitability.

3. Conclusion

In spite of the difficulties both in separating out the competing hypotheses and in finding appropriate indicators for

the variables suggested by the different theories, simple regression analysis has proved to be a useful adjunct for the examination of the trends in profitability in Germany. Greater weight at the theoretical and empirical levels was given to the manufacturing sector and questions remain as to the explanation of non-manufacturing behaviour. A disaggregation of the disparate industries collected under the heading of non-manufacturing would be required to pursue this further.

The regression exercise acted as a useful check on the accuracy of the lines of argument developed in the detailed examination of chapter eight. However, the limitations to such an aggregative exercise were highlighted by the residuals which emerged when the regression coefficients were in turn applied to each cycle. It is clear from this analysis, that a single equation which performs satisfactorily for the period as a whole need to be supplemented by historical, institutional and descriptive statistical approaches. Using a combination of methodologies, it has been possible to develop and test with some degree of success a broad hypothesis to account for the profitability performance of the West German economy from 1950 to 1973.

DATA APPENDIX TO CHAPTER NINE

1. Data Series for Regressions

(For definitions and sources of data see data appendix to chapter eight)

(%)	NPR Mf	NPR Non-mf	NPR Bus
1950	31.74	13.12	19.86
1951	35.19	13.90	21.69
1952	36.78	17.54	24.84
1953	36.17	16.26	23.96
1954	34.64	16.13	23.28
1955	35.58	19.52	25.79
1956	32.03	20.00	24.86
1957	30.09	20.42	24.40
1958	29.37	17.87	22.53
1959	29.66	19.07	23.23
1960	28.60	19.32	22.87
1961	25.18	17.01	20.20
1962	20.98	16.17	18.02
1963	18.58	14.60	16.16
1964	19.99	15.00	16.98
1965	19.41	14.65	16.54
1966	16.67	14.06	15.09
1967	16.58	12.73	14.28
1968	20.42	13.03	15.91
1969	21.31	12.32	15.76
1970	18.61	12.08	14.52
1971	16.47	11.42	13.31
1972	14.92	11.59	12.82
1973	15.18	10.45	12.16

	CAPUT Mf	CAPUT Non-mf	CAPUT Bus
1950	88.41	88.38	88.39
1951	91.27	90.06	90.57
1952	92.68	90.82	91.62
1953	92.30	92.53	92.43
1954	90.92	91.40	91.18
1955	92.30	92.51	92.41
1956	90.61	92.53	91.64
1957	88.61	90.73	89.74
1958	85.83	86.69	86.29
1959	86.94	87.33	87.15
1960	90.15	89.11	89.60
1961	89.16	88.92	89.04
1962	86.52	87.53	87.04
1963	83.79	85.81	84.83
1964	86.63	86.75	86.69
1965	88.34	86.68	87.50
1966	84.82	85.60	85.22
1967	79.61	82.64	81.14
1968	85.50	83.60	84.54
1969	91.28	86.40	88.84

1970	90.63	88.59	89.62
1971	86.58	88.48	87.50
1972	84.57	87.49	86.00
1973	86.77	86.26	86.53

	MPEN Mf	RULC	U RATE
1950	10.67	77.57	7.90
1951	11.30	77.62	7.10
1952	12.86	69.14	6.70
1953	13.03	67.03	6.10
1954	16.32	65.77	5.80
1955	19.44	65.89	4.20
1956	20.21	65.71	3.40
1957	22.31	68.57	2.90
1958	22.60	69.27	3.00
1959	25.06	70.73	2.10
1960	27.53	70.93	1.00
1961	26.12	77.01	0.70
1962	26.93	80.86	0.60
1963	29.23	81.43	0.70
1964	29.51	80.00	0.60
1965	31.97	78.90	0.50
1966	33.25	81.90	0.60
1967	34.10	79.90	1.70
1968	36.07	78.90	1.20
1969	39.00	80.80	0.70
1970	38.11	92.20	0.60
1971	38.93	95.90	0.70
1972	40.24	99.00	0.90
1973	42.01	110.50	1.00

Conclusions

One conclusion that emerges clearly from this study is that the analysis of trends in functional distribution and profitability is a highly complex matter, requiring a variety of theoretical and empirical approaches. In contrast to many previous investigations, the attempt made here has been to combine insights from several different theories to provide what appeared to be a coherent explanation for the observed trends.

Rather than summarizing the contents of the thesis, these few concluding paragraphs attempt, instead, to indicate where and to what extent existing theories of functional distribution had to be modified or adjusted either to make them analytically sounder and more precise or to bring them closer to the reality of a modern, open and highly developed economy.

Taking the neoclassical approach first, this was enriched by paying considerable attention to the mechanisms through which the profile of productive equipment would adjust to changes in supply conditions using vintage production models. Although the comparative steady state results do not diverge markedly from those of the simple aggregate production function model (Solow), it was felt necessary to base the analysis of changes in production (the choice of technique and rate of scrapping) on firmer foundations. The neoclassical emphasis on the supply side and in particular on the implications of changes in labour supply growth for profitability established its a priori plausibility. The numerical simul-

ations provided further guidance, suggesting that the falls in the profit share and rate observed would be consistent with a combination of a fall in labour supply growth and a fall in the mark-up. These two themes turned out to provide the basis for our explanation.

The essentially micro-economic character of the neoclassical theory bypasses the means through which a parameter change actually brings about the corresponding change in relative factor prices and meant that the analysis was incomplete for application to a study of macroeconomic trends. A second shortcoming of the neoclassical model was the limited scope provided for examining imperfect competition in labour and product markets. Both aspects are addressed by Kalecki who, by contrast, did not look at the production structure at all. He stressed the conditions under which money wage increases would be reflected in a shift in distribution and emphasized the key role in distributional trends played by market imperfections.

It was, however, necessary to go beyond these basic insights to build sound micro-foundations for the determinants of shifts in union bargaining power and in the price-cost margin. An important determinant of union bargaining power is the rate of unemployment, suggesting a second channel through which labour market conditions could affect profitability. The literature on imperfect competition provided the basis for the hypothesis that growing openness was a reason for a declining mark-up in the tradeables sector.

The usefulness of the third theoretical approach, the

neo-Keynesian, lay in its emphasis on the role of demand in any explanation of the factor distribution of income. Although changes in private sector components of demand are of little explanatory value for the German case, the need to examine the neo-Keynesian theory proved illuminating in highlighting the role of demand management policies pursued by the authorities.

This thesis has attempted an explanation of the trends in factor distribution without an evaluation of their consequences. That would probably require at least one volume of similar size to this one. But, as an "agenda for future research", some topics of possible interest can at least be mentioned. One obvious one, could be the study of the consequences of the factor distribution trends for the personal distribution in postwar Germany, and in particular whether the degree of personal income equality increased or not over the period.

Another, equally obvious, topic could be an extension of the story to the present through the eventful years that followed the first oil shock. Here a comparative approach would be particularly interesting, but this would have to build on an understanding of the pre-OPEC evolution of profitability and the attitudes it engendered. Indeed the strong action initiated by the Bundesbank in early 1973 to dampen economic activity and restrain wage and price-setting behaviour sheltered Germany from the full impact effect of OPEC I on inflation. From the point of view of the Bundesbank, the external shock may have been a blessing in

disguise in lending credibility to their attempt to break the pattern of wage bargaining and thus take the pressure of profitability. It is very striking that profits declined less in Germany in the years after OPEC I than in Japan or the other major European economies.

But clearly the most interesting extension of this work would look at the significance of the trends examined here on the overall growth of the economy. Could Germany have grown even faster had the return to capital not declined? Or did that decline, after all, help growth in indirect ways by, for instance, strengthening the social consensus?

The present work should be of assistance in answering some of these major questions - the impact of a given fall in profitability may well depend on what caused it. For example, if the fall was the outcome of a rise in union bargaining power unrelated to the immediate labour market situation, employer confidence could be eroded and the incentive to invest reduced. By contrast, if profits declined because of the inevitable erosion of particularly favourable initial conditions, investment may not have been adversely affected and could even have been stimulated by the greater incentive to substitute capital for labour.

It may well be that the circumstances described in this study which contributed to the very sharp decline in profitability in West Germany in the years just before 1973 had impacts on policy and the long-term performance of the German economy which are still being felt.

BIBLIOGRAPHY

I. Primary Sources

Bank deutscher Länder	<u>Monthly Report, Annual Report,</u> (Frankfurt, Bank deutscher Länder, 1948/9-1956).
Bundesministerium für Wirtschaft	<u>Bericht über die Wirtschafts- entwicklung im Jahre 1962 und die Aussichten für 1963,</u> (Bundestagdrucksache IV/1010, 1963).
Deutsche Bundesbank	<u>Monthly Report, Annual Report,</u> (Frankfurt, Deutsche Bundesbank, 1956 onward)
Deutsche Bundesbank	<u>Memorandum on Wage and Price Movements,</u> (Frankfurt, Deutsche Bundesbank, 1960).
Deutsches Institut für Wirtschafts- forschung	<u>Anlageinvestitionen und Anlagevermögen in den Wirtschaftsbereichen der BRD, Beiträge zur Strukturforschung, Heft 41, Berlin, 1974.</u>
Deutsches Institut für Wirtschafts- forschung	<u>Daten zur Entwicklung des Produktionspotentials, des Einsatzes von Arbeitskräften und Anlagevermögen sowie der Einkommensverteilung in Wirtschaftsbereichen der BRD 1950-75,</u> (Berlin, DIW, 1977).
Eurostat	<u>Structural Data Base,</u> computer printout, 1986.
H.M.S.O.	<u>Overseas Economic Surveys: The Federal Republic of Germany: Economic and Commercial Conditions in the Federal Republic of Germany and West Berlin</u> (London, HMSO, 1955).
I.M.F.	<u>Supplement on Price Statistics,</u> (Washington D.C., IMF, 1981).
I.M.F.	<u>International Financial Statistics, Yearbook,</u> (Washington D.C. IMF, various issues).
O.E.C.D.	<u>Economic Outlook,</u> (Paris. OECD, various years).
O.E.C.D.	<u>Economic Survey: Germany,</u> (Paris, OECD, various years).

O.E.C.D.	<u>Labour Force Statistics</u> , (Paris, OECD, various years).
O.E.C.D.	<u>Historical Statistics</u> , (Paris, OECD, various years).
O.E.C.D.	<u>National Accounts 1950-1968</u> , (Paris, OECD, 1970).
O.E.C.D.	<u>Monetary Policy in Germany</u> (Paris, OECD, 1973).
O.E.E.C.	<u>Statistics of National Product and Expenditure</u> , No. 2 1938 & 1947 to 1955 (Paris, OEEC, 1957).
O.E.E.C.	<u>A Decade of Co-operation: Achievements and Perspectives</u> , (Paris, OEEC, 1958).
Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung	<u>Jahresgutachten</u> , (Stuttgart & Mainz, Kohlhammer, annual since 1964/65).
Statistisches Bundesamt	<u>Statistisches Jahrbuch</u> , (Stuttgart & Mainz, Kohlhammer, various years).
Statistisches Bundesamt	Volkswirtschaftliche Gesamtrechnungen Fachserie N, Reihe 3, <u>Revidierte Reihen ab 1950</u> , (Stuttgart & Mainz, Kohlhammer, 1972).
Statistisches Bundesamt	Volkswirtschaftliche Gesamtrechnungen Fachserie 18, Reihe S.5, <u>Revidierte Ergebnisse 1960 bis 1981</u> , (Stuttgart & Mainz, Kohlhammer, 1981).
Statistisches Bundesamt	<u>Wirtschaft und Statistik</u> , various issues.
U.N.E.C.E.	<u>Europe in 1948</u> (Geneva, U.N., 1949).
U.N.E.C.E.	<u>Economic Survey of Europe in 1949</u> (Geneva, U.N., 1950).
U.N.E.C.E.	<u>Economic Survey of Europe Since the War: A Reappraisal of Problems and Prospects</u> (Geneva, U.N., 1953).
U.N.E.C.E.	<u>Economic Survey of Europe in 1961, Part 2. Some factors in Economic Growth in Europe in the 1950's</u> (Geneva, U.N., 1964).
U.N.E.C.E.	<u>Economic Survey of Europe in 1964</u> (New York, U.N., 1965).

U.N.E.C.E.	<u>Economic Survey of Europe</u> , (Geneva, U.N., various years).
United Nations	<u>Statistical Yearbook</u> , (New York, U.N., various years).
U.S. Government	<u>Underlying Data for Indices of Output/Hour etc.</u> , (Washington D.C., Bureau of Labor Statistics, 1984).
Wissenschaftlicher Beirat beim Bundesministerium für Wirtschaft	<u>Sammelband der Gutachten von 1948 bis 1972</u> (Göttingen, Otto Schwarz, 1973).

II. Secondary Sources

Abelshauser, Werner	<u>Wirtschaft in Westdeutschland, 1945-1948: Rekonstruktion und Wachstumsbedingungen in der amerikanischen und britischen Zone</u> , (Stuttgart, Deutsche Verlags-Anstalt, 1975).
Abelshauser, Werner	"Ansätze korporativer Marktwirtschaft in der Koreakrise der frühen fünfziger Jahre", <u>Vierteljahrshefte für Zeitgeschichte</u> , 30,4 (1982), 715-756.
Abelshauser, Werner	"West German economic recovery, 1945-1951: A Reassessment", <u>Three Banks Review</u> , 135 (1982), 34-53.
Adam, H.	"Soziale Symmetrie - Probleme einer Operationalisierung und politische Konsequenzen", <u>WWI-Mitteilungen</u> , 24, 1 (1971), 27-31.
Adamsen, Heiner R.	<u>Investitionshilfe für die Ruhr: Wiederaufbau, Verbände und Soziale Marktwirtschaft 1948-1952</u> , (Wuppertal, Peter Hammer Verlag, 1981).
Adebahr, H.	"Zu den Ursachen der chronischen deutschen Exportüberschüsse", <u>Schmollers Jahrbuch</u> , 91 (1971), 385-409.

- Albach, Horst "The rate of return in German manufacturing industry: measurement and policy implications", in Daniel M. Holland, (ed.) Measuring Profitability and Capital Costs: An International Study, (Lexington Mass., Lexington Books, 1984).
- Allsopp, Christopher "Inflation", in A. Boltho (ed), The European Economy: Growth and Crisis, (Oxford, Oxford University Press, 1982).
- Altvater, E.
Hoffmann, J.
Semmler, W. Vom Wirtschaftswunder zur Wirtschaftskrise: Ökonomie und Politik in der Bundesrepublik, 2. Auflage, (Berlin, Olle & Walter, 1980).
- Alworth, Julian "Germany", draft chapter four for M.A. King & Don Fullerton (eds), The Taxation of Income from Capital, (Chicago, University of Chicago Press, 1984).
- Ambrosius, Gerold "Marktwirtschaft oder Planwirtschaft? Planwirtschaftliche Ansätze der bizonalen deutschen Selbstverwaltung 1946-1949", Vierteljahresschrift für Sozial und Wirtschaftsgeschichte, 66, 1 (1979), 74-110.
- Armstrong, P. & Glyn, A. "Accumulation, profits and state spending: data for advanced capitalist countries, 1951-1983", Oxford Institute of Economics and Statistics, mimeo, 1986.
- Arndt, H. (Hrsg.) Lohnpolitik und Einkommensverteilung, Schriften des Verein für Socialpolitik, N.F. Band 51, (Berlin, Duncker & Humblot, 1969).
- Arndt, Klaus Dieter "Wohnungsversorgung und Mietenniveau in der Bundesrepublik", DIW Sonderheft, N.F. Nr.35, (1955).
- Arnold, C. "Der Arbeitsmarkt in den Besatzungszonen", in DIW (Hrsg), Wirtschaftsprobleme der Besatzungszonen, (Berlin, DIW, 1948).
- Artus, Jacques. R. "The behaviour of export prices for manufacturing", International Monetary Fund Staff Papers, 21 (1974), 583-604.

- Ashworth, M.,
Kay, J.A.
Sharpe, T.A.E. "Differentials between car prices in the UK and Belgium", Institute for Fiscal Studies Report Series, No.2, 1982.
- Atkinson, A.B. The Economics of Inequality (Oxford, Oxford University Press, 1975).
- Bacharach, Michael Economics and the Theory of Games, (London, Macmillan, 1976).
- Bain, J.S. Barriers to New Competition: their Character and Consequences in Manufacturing Industry, (Cambridge Mass., Harvard University Press, 1956).
- Balogh, T. "Germany: an experiment in planning by the "free" price mechanism", Banca Nazionale del Lavoro Quarterly Review, 3, 13 (1950), 71-102.
- Bardhan, Pranab "Equilibrium growth in a model with economic obsolescence of machines", Quarterly Journal of Economics, LXXXIII, 2 (1969), 312-323.
- Bardhan, Pranab "More on putty-clay", International Economic Review, 14, 1 (1973), 211-222.
- Batchelor, R.
Major, R.
Morgan, A. Industrialisation and the Basis for Trade, (Cambridge, Cambridge University Press, 1980).
- Bauer, W. "Der allgemeine wirtschaftliche Charakter der Zonen", in DIW (Hrsg.), Wirtschaftsprobleme der Besatzungszonen, (Berlin, DIW, 1948).
- Baumgart, E.
Krengel, R.
Moritz, W. Die Finanzierung der industriellen Expansion in der BRD während der Jahre des Wiederaufbaus, (Berlin, Duncker & Humblot, 1960).
- Baumgart, E. "Investitionen und ERP Finanzierung", DIW Sonderhefte, N.F., Nr. 56, Berlin, 1961.
- Baumgarten, P. Selbstfinanzierung und Einkommensverteilung, Schriftenreihe des Instituts für Angewandte Wirtschaftsforschung, Bd. 18 (Tübingen, Mohr, 1971).

- Bergmann, J.
Jacobi, O.
Müller-Jentsch, W. Gewerkschaften in der Bundesrepublik,
3. Auflage, (Frankfurt/New York,
Campus, 1975).
- Bergmann, J. &
Müller-Jentsch, W. "The Federal Republic of Germany:
Cooperative Unionism and Dual
Bargaining Systems Challenged" in
S. Barkin (ed) Worker Militancy and
its Consequences 1965-75, (New York
Praeger, 1975).
- Binmore, Ken
Rubinstein, A.
Wolinsky, A. "The Nash bargaining solution in
economic modelling", Rand Journal of
Economics, 17, 2 (1986), 176-188.
- Blackaby, F. (ed), Deindustrialisation, (London,
Heinemann-NIESR, 1981).
- Blechschiidt, Aike, Rentabilität und Krise: Diskussion und
Berechnung der Rendite von 1960-1975
für die gewerbliche Wirtschaft in der
BRD, (Frankfurt (Main), Campus Verlag,
1981).
- Bliss, C.J. "On putty-clay", Review of
Economic Studies, XXXV (2), 102
(1968), 105-132.
- Bliss, C.J. Capital Theory and the Distribution of
Income, (Amsterdam, North Holland
1975).
- Board of Trade Journal 30 March 1957: "Trends in Exports
of United Kingdom Compared with Other
Countries", 665-673.
- Boarman, P.M. Germany's Economic Dilemma: Inflation
and the Balance of Payments (New
Haven, Yale University Press, 1964).
- Boltho, Andrea Japan. An Economic Survey 1953-73
(Oxford, Oxford University Press,
1975).
- Boltho, Andrea (ed.) The European Economy: Growth and
Crisis, (Oxford, Oxford University
Press, 1982).
- Braunthal, Gerard The Federation of German Industry in
Politics, (Ithaca, Cornell University
Press, 1965).
- Bretschneider, J. "Das Preisverhalten der Unternehmer",
Der Arbeitgeber, 22 (1970), 892-4.

- Brinkmann, Theodor "Gewinnentwicklung und Gewinnprognose", Beiträge zur Wirtschafts- und Sozialpolitik, 58, (Köln, Institut der deutschen Wirtschaft, 1978).
- Brown, C. & Sheriff, T. "De-industrialisation: a background paper", in F. Blackaby (ed), Deindustrialisation, (London, Heinemann, 1979).
- Burchardt, F.A. & Martin, K. "West Germany and reconstruction", Bulletin of Oxford Institute of Statistics, 9, 12 (1947), 405-416.
- Cairncross, A.K. "The Economic Recovery of West Germany", Lloyds Bank Review, NS 22 (1951), 19-34.
- Carlin, Wendy & Soskice, David. "Real wages, unemployment, international competition and inflation: a framework for analysing closed and open economies", Oxford Institute of Economics and Statistics, mimeo, 1985.
- Castles, S. & Cosack, G. Immigrant Workers and Class Structure in Western Europe (Oxford, Oxford University Press, 1973).
- Cave, M. & Hare, P. Alternative Approaches to Economic Planning, (London, Macmillan, 1981).
- Caves, R.E. "International trade and industrial organization", European Economic Review, 28 (1985), 377-395.
- Clarke, R. & Davies, S.W. "Market structure and price-cost margins", Economica, 49, 195 (1982), 277-287.
- Clay, Lucius D. Decision in Germany (London, Heinemann, 1950).
- Cornwall, John Modern Capitalism: its Growth and Transformation, (Oxford, Martin Robinson, 1977).
- Courakis, A.S. "Monetary thought and stabilisation policy in the FRG 1960-1976", in S.F. Frowen, et. al., Monetary Policy and Economic Activity in West Germany, (London, Surrey University Press, 1977).

- Cowling, K. & Waterson, M. "Price-cost margins and market structure", Economica, 43, 171 (1976), 267-274.
- De Menil, George Bargaining: Monopoly Power versus Union Power, (Cambridge Mass., MIT Press, 1971).
- Denton, G. Economic Planning and Policies in Britain, France & Germany, (London, PEP, 1968).
- Forsyth, M. & MacLennan, M.
- Dernburg, H.J. "Germany's external economic position", American Economic Review, 44, 4 (1954), 530-558.
- Deutsche Bundesbank, (Hrsg.) Währung und Wirtschaft in Deutschland 1876-1975, (Frankfurt, Knapp, 1976).
- Deutschen Volks- wirtschaftlichen Gesellschaft, (Hrsg.) Perspektiven der Wirtschafts- entwicklung in der BRD 1971-1975. Prognosen und Projektionen, (Hamburg, 1971).
- Deutsches Institut für Wirtschafts- forschung (Hrsg.) Wirtschaftsprobleme der Besatzungs- zonen, (Berlin, Duncker & Humblot, 1948).
- Deutsches Institut für Wirtschafts- forschung Möglichkeiten und Grenzen einer Einkommenspolitik im Rahmen der allgemeinen Wirtschaftspolitik im Lichte der mittelfristigen Projektionen der Bundesregierung, des DGB und des Gemeinschaftsausschusses der Deutschen Gewerblichen Wirtschaft, (Berlin, DIW, 1972).
- Dixit, A. "Recent developments in oligopoly theory", American Economic Review Papers and Proceedings, 72, 2 (1982), 12-17.
- Dixit, A. "The role of investment in entry deterrence", Economic Journal, XC, 1 (1980), 95-106.
- Domes, Jürgen & Wolffsohn, Michael "Setting the course for the FRG: major policy decisions in the Bizonal Economic Council and party images, 1947-49", Zeitschrift für die gesamte Staatswissenschaft, 135, 3 (1979), 332-351.

- Donges, J.B.
Fels, G.
Neu, A.D. et. al. Protektion und Branchenstruktur der westdeutschen Wirtschaft, Kieler Studien, Nr.123, (Tübingen, Mohr, 1973).
- Dorow, F. "Vermögenseinkommen und Unternehmensgewinne 1960-72", Wirtschaft und Statistik, 4 (1974), 246-259.
- Dunlop, J. &
Galenson, W. Labor in the Twentieth Century, (New York, Academic Press, 1978).
- The Economist (London, various dates).
- Edelman, M. &
Fleming, R.W. The Politics of Wage-Price Decisions, (Urbana, University of Illinois Press, 1965).
- Eichler, W. "Wirtschaftliche Bestimmungsgründe und Konsequenzen der Lohnbildung aus der Sicht der Arbeitgeber", in H. Arndt (Hrsg.), Lohnpolitik und Einkommensverteilung, (Berlin, Duncker & Humblot, 1969).
- Eltis, W.A. Growth and Distribution, (London, Macmillan, 1973).
- Emminger, Otmar "The D-Mark in the conflict between internal and external equilibrium, 1948-75", Essays in International Finance, (Princeton), 122, (1977).
- Erdmann, Gerhard Die deutschen Arbeitgeberverbände im sozialgeschichtlichen Wandel der Zeit, (Berlin, Neuwied, 1966).
- Erhard, Ludwig Prosperity through Competition: The Economics of the German Miracle, 3rd ed. (London, Thames & Hudson, 1962).
- Feldstein, M. &
Summers, L. "Is the rate of profit falling?", Brookings Papers on Economic Activity, I (1977), 211-218.
- Fellner, William
et. al. The Problem of Rising Prices, (Paris. OECD, 1961).
- Fellner, William Competition Among the Few: Oligopoly and Similar Market Structures, (London, Frank Cass, 1965).

- Fels, G. "Die Auswirkungen einer Exportorientierten Entwicklungsstrategie auf die Branchenstruktur in der Bundesrepublik", Beihefte der Konjunkturpolitik, 19 (1972).
- Fels, G. "Inflation in Germany", in Krause, L.B. & Salant, W.S. (eds.) Worldwide Inflation, (Washington, D.C., Brookings, 1977).
- Flanagan, Robert J.
Soskice, David W.
Ulman, Lloyd Unionism, Economic Stabilization and Incomes Policies: European Experience, (Washington D.C., Brookings Inst., 1983).
- Flemming, J.S. &
Wright, J.H. "Uniqueness of the internal rate of return: a generalisation", Economic Journal, 81, 2 (1971), 256-263.
- Flemming, J.S.
et. al. "Trends in company profitability", Bank of England Quarterly Bulletin, 16,1 (1976) 36-52.
- Frowen, S.F.
Courakis, A.S.
Miller, M.H. (eds) Monetary Policy and Economic Activity in West Germany, (London, Surrey University Press, 1977).
- Funke, Michael "Einflüsse auf die Entwicklung der Kapitalrentabilität im verarbeitenden Gewerbe in der BRD", Berlin International Institute of Management, mimeo, 1985.
- Gahlen, B. &
Liefert, E. "Die Vorschläge des Sachverständigenrats zur Einkommenspolitik", in B. Gahlen (Hrsg.), Wachstumszyklen und Einkommensverteilung, (Tübingen, Mohr, 1974).
- Gahlen, B. (Hrsg.) Wachstumszyklen und Einkommensverteilung, Schriften zur angewandten Wirtschaftsforschung, Band 31, (Tübingen, Mohr, 1974).
- Gerfin, Harald "Ausmaß und Wirkung der Lohndrift", in Arndt, H. (Hrsg.), Lohnpolitik und Einkommensverteilung, (Berlin, Duncker & Humblot, 1969)
- Gerfin, Harald "Die interindustrielle Lohnstruktur in der Bundesrepublik Deutschland", Jahrbücher für Nationalökonomie und Statistik, 192, (1977), 127-147.

- Giersch, Herbert Growth, Cycles & Exchange Rates: The Experience of West Germany, (Stockholm, Almqvist & Wicksell, 1970).
- Gimbel, John The American Occupation of Germany (Stanford, Stanford University Press, 1968).
- Gimbel, John The Origins of the Marshall Plan (Stanford, Stanford University Press, 1976).
- Glastetter, W. "Die versäumte Aufwertung der D-Mark und ihre Konsequenzen für die Einkommensverteilung", WWI Mitteilungen, 22, (1969), 182-190.
- Glyn, A.
Sutcliffe, B. British Capitalism, Workers & the Profit Squeeze, (Harmondsworth, Penguin, 1972).
- Görzig, B. &
Kirner, W. Möglichkeiten und Grenzen einer mittelfristigen Einkommenspolitik im Rahmen einer allgemeinen Wirtschaftspolitik, DIW Beiträge zur Strukturforschung, Heft 25, 1973.
- Görzig, B. "Entwicklung von Gewinnen und Renditen im Unternehmensbereich", Vierteljahrshefte zur Wirtschaftsforschung, 4 (1981), 321-334.
- Görzig, B. "Die Komponenten der Gewinn- und Renditeentwicklung in den Wirtschaftszweigen", Vierteljahrshefte zur Wirtschaftsforschung, 2 (1982), 167-193.
- Görzig, B. "Das Sachvermögen in den Wirtschaftsbereichen der Bundesrepublik Deutschland", DIW Beiträge zur Strukturforschung, Heft 71, 1982.
- Graf, W.D. The German Left Since 1945: Socialism and Social Democracy in the German Federal Republic, (Cambridge, Oleander Press, 1976).
- Günter, H.
Leminsky, G. "The Federal Republic of Germany" in Dunlop, J.T. & Galenson, W. (eds), Labour in the Twentieth Century (New York, Academic Press, 1978).

- Hankel, W. "West Germany" in Kohl, W.L. (ed) Economic Foreign Policies of Industrial States, (Lexington Mass., D.C. Heath, 1977), pp.105-123.
- Hansen, B. Fiscal Policies in Seven Countries, 1955-1965 (Paris, OECD, 1969).
et. al.
- Hardes, H-D. Einkommenspolitik in der BRD. Stabilität und Gruppeninteressen: Der Fall Konzertierte Aktion, (Frankfurt, Herder & Herder, 1974).
- Hartmann, Heinz Authority and Organization in German Management, (Princeton, Princeton University Press, 1959).
- Harvey, A.C. The Econometric Analysis of Time Series, (Oxford, Philip Allan, 1981).
- Häuser, K. "West Germany" in NBER, Foreign Tax Policies and Economic Growth, (New York, Columbia University Press, 1966).
- Häuser, K. "The partition of Germany", in W. Stolper, et. al., The German Economy 1870 to the Present (London, Weidenfeld & Nicolson, 1967).
- Hausman, J.A. "Specification tests in econometrics", Econometrica, 46,6 (1978), 1251-1271.
- Heller, W.W. "The role of fiscal-monetary policy in German economic recovery", American Economic Review Papers and Proceedings, 40, 2 (1950), 531-547.
- Helmstädter, E. "The trend of income distribution in the Federal Republic of Germany, from the standpoint of distribution theory", German Economic Review, 5, 4 (1967), 278-292.
- Hensche, Detlef "Grundsatzprogramm und Wirtschaftsordnung. Zur gewerkschaftlichen Programmatik seit 1945" Gewerkschaftlichen Monatshefte, 27, 11 (1976), 688-696.

- Henschel, R. "Ordnungsbedingungen und Einkommensverteilung - Einfluß der autonomen Gruppen auf die Ordnungsbedingungen" in G. Bombach u.a. (Hrsg.) Neue Aspekte der Verteilungstheorie, (Tübingen, Mohr, 1974).
- Hill, T.P. Profits and Rates of Return (Paris, OECD, 1979).
- Hofmann, Hans "Prognosen und Erklärungen des SVR zur Entwicklung der Ausrüstungs Investitionen der BRD", Zeitschrift für Wirtschafts- und Sozialwissenschaften, (1974), 123-150.
- Holmes, P.A. Industrial Pricing Behaviour and Devaluation, (London, Macmillan, 1978).
- Jahresbericht des Bundesvereinigungen der Deutschen Arbeitgeberverbände (various years).
- Janssen, Jürgen "Nochmals zur Lohnquotenbereinigung", Jahrbücher für Nationalökonomie und Statistik, 198, 1 (1983), 77-83.
- Jeck, A. "The trends of income distribution in the Federal Republic of Germany" in J. Marchal & B. Ducros, (eds), The Distribution of National Income, (London, Macmillan, 1968).
- Kaldor, N. "The German War Economy", Review of Economic Studies, XIII, (1), 33 (1945/46), 33-52.
- Kaldor, N. "Alternative theories of distribution", Review of Economic Studies, XXIII, (2), 61 (1955-56), 94-100.
- Kalecki, Michal "Costs and prices", (1943) reprinted in M. Kalecki, Selected Essays on the Dynamics of the Capitalist Economy, (Cambridge, Cambridge University Press, 1971).
- Kalecki, Michal, "Distribution of national income", (1938), (1954), reprinted in Selected Essays on the Dynamics of the Capitalist Economy (Cambridge, Cambridge University Press, 1971).

- Kasper, Wolfgang "Stabilization Policies in a Dependent Economy: Some Lessons from the West German Experience of the 1960's", in Emil Claason & Pascal Salin (eds.), Stabilization Policies in Interdependent Economies (Amsterdam, North Holland, 1972).
- Kay, J.A. "Accountants, too, could be happy in a golden age: the accountant's rate of return and the internal rate of return", Oxford Economic Papers, N.S. 28, 3 (1976), 447-460.
- Kendall, Walter The Labour Movement in Europe (London, Allen Lane, 1975).
- Kerr, Clark "The trade union movement and the redistribution of power in post-war Germany", Quarterly Journal of Economics, LXVIII, 4 (1954), 535-564.
- Kerr, Clark "Collective bargaining in post-war Germany" in Sturmthal, Adolf (ed.), Contemporary Collective Bargaining in Seven Countries (Ithaca, Cornell University Press, 1957), pp.169-209.
- Kindleberger, C.P. "Germany's persistent balance of payments disequilibrium" in R.E. Baldwin, (ed.), Trade, Growth and the Balance of Payments, (Amsterdam, North Holland, 1965).
- Kindleberger, C.P. Europe's Post-War Growth (Cambridge Mass., Harvard University Press, 1967).
- Kindleberger, C.P. "Germany's persistent balance of payments disequilibrium revisited", Banca Nazionale del Lavoro Quarterly Review, XXIX, 117 (1976), 118-150.
- King, M.A. & Don Fullerton (eds.) The Taxation of Income from Capital (Chicago, University of Chicago, 1984).
- Kießmann, C. "Betriebsräte und Gewerkschaften in Deutschland 1945-1952" in Winkler, H.A. (Hrsg.), Politische Weichenstellungen im Nachkriegs-deutschland, Geschichte und Gesellschaft Sonderheft 5, (Göttingen, 1979), pp.44-73.

- Klopstock, F.H. "Monetary Reform in Western Germany", Journal of Political Economy, 57, 4 (1949), 277-292.
- Kloten, N. "Erfolg und Mißerfolg der Stabilisierungspolitik 1969-1974" in Deutsche Bundesbank (Hrsg.), Währung und Wirtschaft, (Frankfurt, Knapp, 1976), pp.643-690.
- Knapp, Manfred "Deutschland und der Marshallplan: Zum Verhältnis zwischen politischer und ökonomischer Stabilisierung in der amerikanischen Deutschlandpolitik nach 1945" in Claus Scharf and Hans-Jürgen Schröder, Politische und Ökonomische Stabilisierung Westdeutschlands, 1945-1949 (Wiesbaden, Franz Steiner Verlag, 1977).
- Kock, H. "Nettoreallohnenorientierung der Gewerkschaften und Stagflation", Konjunkturpolitik, (1977), 119-141.
- Kornai, János Anti-Equilibrium: On Economic Systems Theory and the Tasks Of Research (Amsterdam, North Holland, 1971).
- Kornai, János & Martos, Béla "Autonomous control of the economic system", Econometrica, XLI, 3 (1973), 509-28.
- Kornai, János The Economics of Shortage, Vols. A & B. (Amsterdam, North Holland, 1980).
- Kravis, I.B. & Lipsey, R.E. "Price behaviour in the light of balance of payments theories", Journal of International Economics, 8 (1978), 193-246.
- Kreile, M. "West Germany: The Dynamics of Expansion", in P.J. Katzenstein (ed.) Between Power and Plenty (Madison, University of Wisconsin Press, 1978).
- Krengel, Rolf "Die Investitionstätigkeit der westdeutschen Industrie seit Mitte 1948 im konjunkturellen Verlauf", Vierteljahrshefte zur Wirtschaftsforschung, 1 (1957), 49-68.
- Krengel, Rolf Anlagevermögen, Produktion und Beschäftigung der Industrie im Gebiet der Bundesrepublik Deutschland von 1924-56, (Berlin, DIW, 1958).

- Krengel, Rolf "Drastische Verschlechterung des Altersaufbaus und des Modernitätsgrades des industriellen Anlagevermögens in der BRD", Vierteljahrshefte zur Wirtschaftsforschung, 1 (1978), 22-27.
- Lamberts, W. Wachstum und Strukturbildung bei Ausländerbeschäftigung, (Essen, RWI, 1976).
- Leminsky, G. "Zur Entwicklung des DGB - Aktionsprogramms", Gewerkschaftliche Monatshefte, 27, 11 (1970), 696-709.
- Leminsky, G. & Otto, B. Politik und Programmatik des Deutschen Gewerkschaftsbund, (Köln, 1974).
- Link, Werner Deutsche und amerikanische Gewerkschaften und Geschäftsleute 1945-75: Eine Studie über transnationale Beziehungen, (Düsseldorf, Droste Verlag, 1978).
- Löbbe, Klaus "Die Einkommensverteilung in den Zielprojektionen des BMWF, des DGB und des GDGW", RWI-Mitteilungen, 23, 4 (1972), 249-292.
- Löbbe, Klaus "Zur Entwicklung der Lohnquote - methodische Probleme und empirische Ergebnisse", RWI-Mitteilungen, 32, 4 (1981) 293-317.
- Lützel, Heinrich "Estimates of capital stock by industry in the Federal Republic of Germany", Review of Income and Wealth, 23 (1977), 63-78.
- Lutz, F.A. "The German currency reform and the revival of the German economy", Economica, N.S. XVI, 62 (1949), 122-142.
- Lutz, F.A. "Germany's economic resurgence", Lloyds Bank Review, N.S. 39 (1956), 12-27.
- Maddison, Angus Economic Growth in the West: Comparative Experience in Europe and North America (London, Allen & Unwin, 1964).

- Maddison, Angus Phases of Capitalist Development,
(Oxford, Oxford University Press, 1982).
- Maizels, A. Industrial Growth and World Trade,
(Cambridge, Cambridge University Press, 1963).
- Malinvaud, E. The Theory of Unemployment
Reconsidered, (Oxford, Blackwell, 1977).
- Mandelbaum, K. "Germany's wage bill and national income in the first year of the war",
Bulletin of the Oxford Institute of Statistics, 3, 10 (1941), 223-5.
- Marchal, J. &
Ducros, B. The Distribution of National Income,
International Economic Association
(London, Macmillan, 1968).
- Marglin, S.A. Growth, Distribution and Prices
(Cambridge Mass., Harvard University Press, 1984).
- Markmann, Heinz "Incomes policy in Germany: A Trade Union View", British Journal of Industrial Relations, 2, 3 (1964), 322-339.
- Markmann, Heinz "Wirtschaftliche Bestimmungsgründe der Lohnbildung aus der Sicht der Gewerkschaften" in H. Arndt (Hrsg.), Lohnpolitik und Einkommensverteilung, (Berlin, Duncker & Humblot, 1969).
- Marvel, H. "Foreign trade and domestic competition", Economic Inquiry, XVIII, 1 (1980), 103-122.
- Marx, Karl Capital, Vol. I, (1867)
(Harmondsworth, Penguin, 1976),
Vol. III, 1894 (London, Lawrence & Wishart, 1959).
- Matthews, R.C.O. "The new view of investment: Comment",
Quarterly Journal of Economics,
LXXVIII, 1 (1964), 164-172.
- May, J. &
Paterson, W. "Die Deutschland Konzeption der britischen Labour Party 1945-1949", in Scharf & Schröder (Hrsg.), Politische und Ökonomische Stabilisierung Westdeutschlands 1945-1949, (Wiesbaden, Franz Steiner Verlag, 1977).

- Mayer, C.P. & Meadowcroft, S. "Equity rates of return in the UK - evidence from panel data", Recherches Economiques de Louvain, 50, 3-4 (1984), 363-398.
- Mayer, C.P. "Recent developments in industrial economics and their implications for policy", Oxford Review of Economic Policy, 1.3 (1985), 1-24.
- Memorandum 1975 "Für eine wirksame und soziale Wirtschaftspolitik", in Blätter für Deutsche und Internationale Politik, Nr. 11, 1975.
- Memorandum 1978 Memorandum Alternativen der Wirtschaftspolitik, (Köln, 1978).
- Mendershausen, H. "Prices, money and the distribution of goods in post-war Germany", American Economic Review, XXXIX, 4 (1949), 646-72.
- Mertens, Y. & Ginsburgh, V. "Product differentiation and price discrimination in the European Community: the case of automobiles", Journal of Industrial Economics, XXXIV, 2 (1985), 151-166.
- Michaely, M. The Responsiveness of Demand Policies to the Balance of Payments: Postwar Patterns (New York, Columbia University Press, 1971).
- Milward, A.S. The Reconstruction of Western Europe, 1945-1951 (London, Methuen, 1984).
- Müller, G.
Rödel, U.
Sabel, C.
Stille, F.
Vogt, W. Ökonomische Krisentendenzen im Gegenwärtigen Kapitalismus, (Frankfurt, Campus Verlag, 1978).
- Müller-Jentsch, W. "Strikes and strike trends in the Federal Republic of Germany, 1950-1978", Industrial Relations Journal, 12, 4 (1981), 36-57.
- Nadiri, M. Ishaq "Some approaches to the theory and measurement of total factor productivity: A survey", Journal of Economic Literature, VIII, 4 (1970), 1137-1177.

National Institute
Economic Review

(London, various issues).

Neumann, M. et. al.

"Profitability, risk and market structure in West German industries", Journal of Industrial Economics, 27.3 (1979), 227-242.

Nickell, S.J.

"A bargaining model of the Phillips' Curve", L.S.E. Centre for Labour Economics, Discussion Paper No. 130, June 1982.

Nickell, S.J. &
Andrews, M.

"Unions, real wages and employment in Britain 1951-1977", Oxford Economic Papers, Supplement, N.S.35 (1983), 183-206.

Nikolinakos, Marios

Politische Ökonomie der Gastarbeiterfrage, Migration und Kapitalismus (Reinbek Rororo Aktuell, 1973).

Noé, C.

Gebändigter Klassenkampf, Tarifaautonomie in der Bundesrepublik Deutschland (Der Konflikt zwischen Gesamtmetall und IG Metall vom Frühjahr 1963) (Berlin, Duncker & Humblot, 1970).

Noll, Werner

"Lohn-Lag und Zyklenbildung", Schmollers Jahrbuch, 90 (1970), 1-17.

Oberhauser, Alois

"Geld- und Kreditpolitik bei weitgehender Vollbeschäftigung und mäßigem Preisanstieg, 1958-1968", in Deutsche Bundesbank, (Hrsg.), Währung und Wirtschaft, (Frankfurt, Knapp, 1976), pp. 609-642.

Okun, A.

"Upward mobility in a high pressure economy", Brookings Papers on Economic Activity, 1 (1973), 207-252.

Opie, R.G.

"'Competition and Growth - the lesson of West Germany': Comment", American Economic Review, 50, 5 (1960), 1022-24.

Osborne, D.K.

"Cartel Problems", American Economic Review, 66, 5 (1976), 835-844.

Oswald, Andrew

"The economic theory of trade unions: an introductory survey", L.S.E. Centre for Labour Economics Discussion Paper No. 211, Feb. 1985.

- Pagoulatos, E. & Sorensen, R. "Foreign trade, concentration and profitability in open economies", European Economic Review, 8 (1976), 255-267.
- Pfromm, H.A. Konflikte solidarischer Lohnpolitik - zur ökonomischen und sozialen Problematik tarifpolitischer Lohnstrukturnivellierung, Schriftenreihe der Kommission für wirtschaftlichen und sozialen Wandel, Bd. 55. (Göttingen, 1975).
- Prais, S.J. Productivity and Industrial Structure (Cambridge, Cambridge University Press, 1981).
- Pugel, T.A. "Foreign trade and US market performance", Journal of Industrial Economics, XXIV, 2 (1980), 119-129.
- Reuss, Frederick Fiscal Policy for Growth without Inflation: the German Experience (Baltimore, Johns Hopkins, 1963).
- Riese, Hajo "Strukturwandel und unterbewertete Währung in der BRD, Bemerkungen zur theoretischen Position des Instituts für Weltwirtschaft Kiel", Konjunkturpolitik, 24 (1978), 143-169.
- Ritschl, Albrecht "Die Währungsreform von 1948 und der Wiederaufstieg der westdeutschen Industrie", Vierteljahrshefte für Zeitgeschichte, 33, 1 (1985), 136-165.
- Robinson, Joan "A model of accumulation", in Joan Robinson, Essays in the Theory of Economic Growth, (London, Macmillan, 1962), pp.34-59.
- Robinson, Joan The Accumulation of Capital, (London, Macmillan, 1965).
- Roskamp, K.W. Capital Formation in West Germany, (Detroit, Wayne State University Press, 1965).
- Rowthorn, Bob "Demand, real wages and economic growth", Thames Papers in Political Economy, 1981.
- Rowthorn, R. & Wells, J. Deindustrialization and the Structure of Trade, (Cambridge, Cambridge University Press, forthcoming 1987).

- Rudzio, Wolfgang "Die ausgebliebene Sozialisierung an Rhein und Ruhr: zur Sozialisierungspolitik von Labour-Regierung und SPD 1945-1948", Archiv für Sozialgeschichte. XVIII (1978), 1-39.
- Salomon, R. Begriff und Problematik der wirtschaftlichen Engpässe, Kieler Studien, Nr. 29, 1954.
- Salter, W.E.G. Productivity and Technical Change, 2nd ed. (Cambridge, Cambridge University Press, 1966).
- Sawyer, Malcolm The Economics of Michal Kalecki, (Basingstoke, Macmillan, 1985).
- Scharf, Claus & Schröder, H-J. (Hrsg) Politische und Ökonomische Stabilisierung Westdeutschlands, 1945-1949 (Wiesbaden, Franz Steiner Verlag, 1977).
- Schatz, K.W. Wachstum und Strukturwandel der westdeutschen Wirtschaft im internationalen Verbund (Tübingen, Mohr, 1974).
- Schiller, Karl Preisstabilität und globale Steuerung der Marktwirtschaft, Vorträge und Aufsätze aus dem Walter Eucken-Institut, Nr. 15, (Tübingen, Mohr, 1966).
- Schlecht Otto Konzertierte Aktion als Instrument der Wirtschaftspolitik (Tübingen, Mohr, 1968).
- Schmidt, Eberhard Die verhinderte Neuordnung 1945-52 (Köln, Europäische Verlaganstalt, 1970).
- Schmidt, Joachim "Das Anlagevermögen in der Bundesrepublik Deutschland, 1960 bis 1978", RWI-Papiere, Nr. 17, 1982.
- Schmidt, U. & Fichter, T. Der erzwungene Kapitalismus: Klassenkämpfe in den Westzonen 1945-48 (Berlin, Wagenbach, 1971).
- Segré, _G. "Medium Term Export Finance", Banca Nazionale del Lavoro Quarterly Review, XI, 45 (1958), 113-271.

- Snyder, Wayne.W. "Measuring the efforts of the German budget policies 1955-65", Weltwirtschaftliches Archiv, 104 (1970), 302-324.
- Sohmen, Egon "Competition and Growth: the lesson of West Germany", American Economic Review, XLIX, 5 (1959), 986-1003.
- Solow, R.M. "Neoclassical growth with fixed factor proportions", Review of Economic Studies, XXXIII (2), 94 (1966), 79-115.
 Tobin, J.
 von Weiszäcker, C.C.
 Yaari, M.
- Solow, R.M. Growth Theory: An Exposition (Oxford, Clarendon Press, 1970).
- Spitäller, E. "The 1961 revaluations and exports of manufacturing", International Monetary Fund Staff Papers, 17 (1970), 110-126.
- Stamp, A.M. "Germany without Incentive", Lloyds Bank Review, N.S. 5 (1947), 14-28.
- Stolper, W. & Roskamp, K. "Planning a Free Economy: Germany 1945-1960", Zeitschrift für die gesamte Staatswissenschaft, 135, 3 (1979), 374-404.
- Streeck, Wolfgang "Codetermination: the fourth decade", International Institute of Management Discussion Paper, 1983.
- Sutch, H. & Chan-Lee, J.H. "Profits and rates of return in OECD countries", OECD Economics and Statistics Department Working Papers, No. 20, 1985.
- Turner, P. "Import competition and the profitability of UK manufacturing industry", Journal of Industrial Economics, XXIX, 2 (1980), 155-166.
- Van Parijs, P. "The falling rate of profit theory of crisis: a rational reconstruction by way of obituary", Review of Radical Political Economics, 12,1 (1980), 1-16.
- Vickers, John "Strategic competition amongst the few", Oxford Review of Economic Policy, 1,3 (1985), 39-62.

- Vogt, Winfried Makroökonomische bestimmungsgründe des wirtschaftlichen Wachstums der BRD von 1950-1960 (Tübingen, Mohr, 1964).
- Wachter, M. "Cyclical variations in inter-industry wage structure", American Economic Review, LX, 1 (1970), 75-84.
- Wallich, H.C. Mainsprings of the German Revival (New Haven, Yale University Press, 1955).
- Weisskopf, T.E. "Marxian crisis theory and the rate of profit in the post-war US economy", Cambridge Journal of Economics, 3 (1979), 341-378.
- Weisskopf, T.E. "Sources of profit rate decline in the advanced capitalist countries", University of Michigan, mimeo. 1985.
- Wells, S.J. British Export Performance: A Comparative Study (Cambridge, Cambridge University Press, 1964).
- Wemelsfelder, J. "The short-term effect of the lowering of import duties in Germany", Economic Journal, LXX, 1 (1960), 94-104.
- Wied-Nebbeling, S. Industrielle Preissetzung, Schriften des Instituts für angewandte Wirtschaftsforschung, Bd. 127, (Tübingen, Mohr, 1975).
- Willeke, F-U. "Preiserhöhungsspielräume und Aufwertung bei heterogener und oligopolistischer Struktur der Export- und Importmärkte", Weltwirtschaftliches Archiv, 108 (1972), 1-28.
- Winkler, H.A. (Hrsg.) Politische Weichenstellungen im Nachkriegsdeutschland, Geschichte und Gesellschaft Sonderheft 5, (Göttingen, 1979).
- Winter, Gerd, "Sozialisierung in Hessen 1946-1955", Kritische Justiz, 7 (1974), 157-175.
- Yergin, Daniel Shattered Peace: The Origins of the Cold War and the National Security State (Harmondsworth, Penguin, 1980).
- Zink, H. The United States in Germany 1944-1955 (Princeton, Van Nostrand, 1957)