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FEDERAL REPUBLIC OF GERMANY

Medium-term economic trends and problems

F. Allgayer S. Gillespie M. Green H. Wortmann

Internal paper

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ABSTRACT

This paper is an analysis of the main medium-term economic trends and issues in the Federal Republic of Germany and forms part of an exercise being undertaken by the Commission staff to review medium-term developments in each of the Community countries. The paper describes the economic trends in the Federal Republic over a period of years, considers the medium-term outlook as foreseen by a number of independent forecasters and examines in particular the following issues : growth potential, structural change, international trade position and competitiveness, the labour market and energy questions.

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CONTENTS

ABREVIATIONS AND SYMBOLS USED

D	Federal Republic of Germany
F	France
UK	United Kingdom
EC(9)(10)	European Communities (without Greece)(total)
FRG	Federal Republic (of Germany)
JAP	Japan
USA	United States of America
DM	German Mark
ECU	European Currency Unit
EMS	European Monetary System
UKL	Pound Sterling
USD	United States Dollar
BF	Bundesministerium für Finanzen (Federal Finance Ministry)
BMWi	Bundesministerium für Wirtschaft (Federal Economics Ministry)
DIW	Deutsches Institut für Wirtschaftsforschung (German Institute for Economic Research, Berlin)
HWWA	Institut für Wirtschaftsforschung - Hamburg (Institute for Economic Research, Hamburg)
IAB	Institut für Arbeitsmarkt- und Berufsforschung (Institute for Research on Labour Market and Vocational Training, Hamburg)
Ifo	Ifo-Institut für Wirtschaftsforschung - München (Institute for Economic Research, Munich)
IfW	Institut für Weltwirtschaft (Institute for International Economics, Kiel)
IW	Institut der deutschen Wirtschaft (German Employers' Economic Research Institute)
RWI	Rheinisch-Westfälisches Institut für Wirtschaftsforschung (Rhine-Westphalian Institute for Economic Research, Essen)
StBA	Statistisches Bundesamt (Federal Statistics Office)
SVR	Sachverständigenrat (Council of Economic Advisers)
WLG	Westdeutsches Landesbank Girocentrale
ERP	European Recovery Programme
Eurostat	Publications of the Statistical Office of the European Communities
GATT	General Agreement on Tariffs and Trade
IEA	International Energy Agency
ILO	International Labour Organisation
IMF	International Monetary Fund

OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
Cmnd	Command Number
LDC	Less Developed Countries
MTOE	Million tonnes of petroleum oil equivalent
NACE/CLIO-P	General Nomenclature of Economic Activities in the European Communities - for Input-Output - Tables
NIC	Newly Industrialised Countries
TPE	Total Primary Energy Consumption
G + S	Goods and Services
:	Data not available
,	Decimal point
-	Not applicable

I. FOREWORD

The Directorate General for Economic and Financial Affairs (Directorate A) is presently undertaking an examination of the medium-term economic trends and problems, as well as related policy issues, for the individual member countries of the Community. These studies may be considered extensions of the analytical reports which the Commission services prepared as supporting material for the Fifth medium-term economic policy programme. They remain the sole responsibility of the Commission's services and are not intended to have a normative character.

Despite recent signs of recovery in certain of the European Economies many of them still face formidable problems particularly with regard to levels of unemployment, a lack of balance in the external and public sector accounts and in certain cases, inflationary pressures, high wage costs, a lack of competitiveness and an inadequate adaption of the economic structure to changing economic circumstances.

The Federal Republic of Germany faces some of these problems. Although in many respects its economy has shown a remarkable capacity to adjust, the German economy must still respond to some formidable challenges.

In this report an attempt has been made to give an outline of economic developments since the founding of the Federal Republic, and to examine specific aspects of the present situation, and particular trends, in greater depth so as to give the reader a clearer idea of the problems faced by economic policy makers.

The report has been written for the general public and presents a substantial body of economic data on the Federal Republic, together with the equivalent information for France, Germany's major European trading partner, and for the European Community as a whole. In order to keep the size of the paper manageable, only a limited number of topics have been chosen for treatment in depth with a view to identifying the main factors determining economic developments in the 1980s.

II. THE MEDIUM-TERM EVOLUTION OF THE GERMAN ECONOMY

A. Production, expenditure and employment

The rapidity of the post-war recovery of the F.R. of Germany and the high rates of economic growth achieved until the early nineteen sixties were so impressive that they gave rise to the term "Wirtschaftswunder" - economic miracle - to describe the gains made. They were impressive indeed. For example, if comparisons of real GDP per head between countries are made on the basis of purchasing power standards, a method which yields a more satisfactory measure of living standards than the direct application of exchange rates, then the level for the F.R. of Germany overtook the equivalent figures for France and the United Kingdom in the late nineteen fifties. France, despite achieving high rates of growth in the sixties and seventies, was unable to catch up again, while the United Kingdom tended to lag further and further behind (Table 1).

This remarkable performance has been the subject of considerable academic study. In the search for explanations, some (Abelshauser, 1982) have argued that a strong recovery was well underway in the years before the currency reform and the establishment of the Federal Republic. Other studies (Giersch, 1979), whilst acknowledging the impact of Marshall aid and similar recovery programmes, have also laid great stress upon :

- the initial shortage of physical capital which, together with low labour costs, helped to maintain a high profitability of investment and favoured a process of capital widening;
- the post-war movement of immigrants from eastern Europe, most possessing technical and entrepreneurial skills, which increased the supply of labour, and which helped to maintain low unit labour costs;
- an institutional structure favouring investment and entrepreneurial risk taking;
- a favourable exchange rate for the German Mark (DM) within the Bretton Woods system (Giersch, 1971).

Taken together, it is argued that these factors helped to provide an economic environment which made a significant contribution to the rapid economic growth observed in the F.R. of Germany in the

nineteen fifties, when the annual average growth rate of GDP reached 8,0 %. However, as the Federal Republic developed, so the impact of these special factors diminished, and Germany ceased to enjoy a steady expansion at this kind of pace. Rather, after abstracting from cyclical movements, the picture is one of a gradual deceleration in the rate of economic growth over a thirty year period. Thus, following the high rates of expansion observed in the nineteen fifties, the growth of GDP fell to 5 % in the nineteen sixties, and then to about 3 % in the nineteen seventies (Table below). For the whole of this latter period growth was below the Community average and significantly below that of France, its major trading partner within the Community.

The deceleration in the rate of expansion was also reflected in the behaviour of industrial production (excluding construction) which grew very rapidly in the nineteen fifties (at an annual average rate of about 10 %), markedly less in the nineteen sixties (just above 5,5 %) and by only just over 2 % in the nineteen seventies, significantly less than the growth of GDP.

	Average annual rates of volume change %			
	1950-1960	1960-1970	1970-1980	1980-1983
Gross domestic product	8,0	4,7	2,9	-0,4
Industrial production (excl. construction)	10,2	5,7	2,2	-1,6

Source : European Economy No. 14 and SVR, 1981/82

In spite of the long-term decline in growth, the expansion of economic activity in the nineteen sixties was still markedly better than that achieved in many other western countries and the reasons usually advanced to account for this are (Donges, 1980) :

- the formation of the European Economic Community and the development of the Common Market;
- the continuation of the favourable exchange rate for the DM, which assisted the growth of German exports.

However, in the first half of the nineteen seventies a number of events significantly changed the domestic and international situation facing the German economy; the following two factors are particularly important :

- the change over to a system of floating exchange rates for the major currencies led to substantial upward movements of the DM mark in the foreign exchange markets. The effective exchange rate, as calculated by the Bundesbank, (i.e. weighted against 23 currencies) rose almost 30 % in the four years between end 1972 and end 1976;

- a change in the distribution of income in favour of income from employment, and a corresponding fall in the share of profits. Indeed, in the five years to 1974, wages and salaries per head rose by 12,5 % per annum in nominal terms, compared with an average rate of growth of 7,8 % between 1960 and 1969.

The emergence of a generalised system of floating exchange rates gave the Bundesbank greater control over monetary growth, making possible, at the time of the first oil price shock, the adoption of a restrictive policy to combat the inflationary pressures generated. However, as a result of the price shock itself, and the interaction of the restrictive policy with the relatively rapid wage inflation that then occurred (as workers attempted to avoid any loss of real earnings), output grew by only 0,5 % in 1974 (Community average 1,7 %) and fell by almost 2 % in 1975; for the Community as a whole output fell by more than 7 % in 1974 and 1975 taken together. However, wage and price inflation then moderated very rapidly, in contrast to the experience in other Community countries. Output recovered vigorously in 1976, but then expanded at a somewhat slower pace (3 1/2 % per annum) in the period to 1980. The impact of the second oil price shock led to the stagnation of GDP from early 1980 onwards. The period 1978 to 1982 was again characterised by a growth in industrial production substantially below that of GDP.

The marked slowdown in the rate of growth of industrial production in relation to the growth of GDP has in recent years led to significant changes in the structure of production. Unlike other EC countries, the share of industry (including construction) within GDP remained stable and high (at 53%) between 1960 and 1970. Between 1970 and 1980 however, the proportion of total GDP accounted for by industrial production fell from 53 % to 47 % and that for agriculture, forestry and fishing from 3 % to 2 %. This points to a corresponding increase in the proportion contributed by the services sector from about 44 % to around 51 % (Table 2).

The distribution of employment by sector also reflects these changes with a significant shift into services and away from production industries. Generally, productivity growth in services is significantly below that of other sectors and so the weight of industries with slower rates of productivity growth within the economy has increased.

This development together with a marked fall in productivity in industrial production itself, is reflected in the data on the longer term movements of labour productivity (Table 4).

The slower average growth rate since the first oil price shock, has been accompanied by a trend decline in employment, despite the shift in the structure of production towards more employment intensive service activities (Tables 3 and 5). At the same time, the labour supply has begun to increase significantly, principally as a result of demographic developments although these were offset to some extent by changes in participation behaviour. As a result, the nineteen seventies witnessed a sustained increase in the numbers unemployed, a trend only interrupted for a short period between late 1978 and early 1980. However, despite this upward trend, the unemployment ratio in the Federal Republic remains significantly below that for the Community as a whole, although the rate of increase in the ratio, since 1979, has been as high as that for other Community countries (Table 5).

Although a number of factors account for the marked slowdown in the overall rate of growth in the German economy after 1973, one of the most important factors has undoubtedly been the slowdown in the growth of world trade, which has resulted in a correspondingly large fall in the rate of growth of German exports. The decline in German export growth from 8 % per annum in the years to 1973 to about half that rate thereafter, clearly influenced investors' confidence adversely and so contributed to the slowdown in the expansion of industrial capacity.

This course of events helps to explain the significant changes in the pattern of domestic demand in the nineteen seventies. In the period up to the first oil crisis, both the volume of private and public consumption, taken together, and fixed investment, expanded at a similar pace to GDP. Since the first oil crisis however, the rate of growth of fixed investment has fallen substantially below that of GDP. On the other hand the growth of the volume of consumption remained close to the growth of output (Table below and Table 6).

	Average annual rates of volume change %			
Period	Gross Domestic Product	Private Consumption	Public Consumption	Fixed Investment
1960-1973	4,5	4,8	4,1	4,5
1973-1980	2,4	3,0	2,3	1,6
1980-1983	-0,4	-1,1	0,7	-2,7

Source : European Economy No. 14

These longer term trends disguise relatively marked year-to-year movements. In 1974 and 1975,taken together, total fixed investment fell very sharply indeed, by some 13 1/2 % in volume terms when the decline for the Community as a whole was only 8 1/2 %. The subsequent recovery in Germany was vigorous with the volume of investment growing at an average rate of 5 1/2 % between 1976 and 1980 at a time when the annual average growth of GDP was 3 1/2 %. However, the volume of fixed investment fell by more than 3 1/2 % in 1981, a year of zero growth, and in 1982, a further fall of 6 % occurred albeit at a time when GDP also fell by about 1 %. As a result of these movements the share of investment in GDP had, by 1982, fallen significantly below the level registered in the sixties and early seventies, although it remained consistently above the EC average.

The decline in the relative rate of growth of investment has been the main factor behind the gradual slowdown in the rate of growth of productive potential of the German economy, estimated by the Council of Economic Experts (Sachverständigenrat)(SVR 1981/82) to have fallen from 4,5 % prior to 1973 to under 2 % after 1980,the lowest level recorded in the history of the Federal Republic. This is only about half the rate of growth observed over the period from 1960 to the mid-1970's (Table 6 and Table on page 12).

As the rate of economic growth has slowed down so there has been a marked change in the structure of the public sector. Between 1960 and 1981 expenditure by General Government rose faster than GDP so that the proportion of General Government expenditure in GDP increased from 33,0 % to 48 %. On the other hand total General Government revenue rose less rapidly, from 36 % to 44 % as a percentage of GDP, indicating a significant move into deficit. Indeed the move into deficit occurred in 1974, following a period of some ten years over which General Government deficits and surplusses largely offset each other(Graph 1). The deficit became substantial in 1975 as the economy moved into recession, but the situation improved in the period of recovery following the first oil crisis,although borrowing remained at a high level compared to the experience in the nineteen sixties and early seventies. Following the second oil price crisis the deficit increased again as a percentage of GDP, but it is now moderating somewhat as the authorities make strenuous efforts to reduce the high levels of General Government borrowing despite the strength of the recessionary forces (Table 7).

The growth of the total of General Government expenditure reflects increases in both General Government consumption and in transfers payments. On the consumption side, the last two decades have been marked by an extension of the activities and responsibilities of Government in the fields of defence, health care and education, and this development has been associated with a rise in the public sector wage and salary bill due to the increase in the numbers employed (Chapter IV.B).

The growth of public transfers reflects both the dynamics of the social security system as determined by the existing legislation, and the gradual extension of its coverage in the course of the nineteen sixties. As a consequence, expenditure in the main subareas such as health insurance, unemployment benefits and old-age pensions have all been rising at rates well in excess of the growth rate of GNP. In contrast, investment outlays of General Government have moved onto a weaker trend: their share in GNP in 1981 was similar to that obtaining in 1960, a significant fall from the higher levels reached in the early nineteen seventies (Table 7).

Although the total of General Government revenues had advanced strongly as a percentage of GDP, this development is not so much due to an increase in the burden of direct and indirect taxation, which has remained surprisingly stable, but rather reflects the increase in social security contributions (half of which are borne by employers and half by employees) stemming from the widening of the social security system. Thus, there has been a marked increase in social security contributions as a proportion of total gross wages and salaries. Present policy points to an increase in the proportion, in 1983, to well above a third.

Contributions; % of gross wage or salary of eligible person

Contributions towards	1960	1970	1980	1983
- Pensions	14,0	17,0	18,0	18,5
- Unemployment	2,0	1,3	2,0	4,6
- Health Insurance	8,4	8,2	10,5	12,0
Total	24,4	26,5	30,5	35,0

Source : Commission staff

B. Prices and incomes

From the establishment of the European Community (1958) to the first oil price shock (1973) the rate of consumer price inflation in the Federal Republic was usually somewhat below the Community average. However, in contrast to the experience elsewhere in the Community, the rate of price inflation did not accelerate in Germany after 1973-74, but fell back slightly, averaging only 4,5 % in the seven years to 1981, compared with a Community average in excess of 10 %. The outlook is that in 1983 Germany's satisfactory relative price performance will be maintained (Table 8).

An examination of year-to-year movements in consumer price inflation, over the longer term, shows the extent to which not only the level, but also the variability of inflation, is significantly less in Germany than elsewhere. Thus the range between the highest and lowest rates registered in Germany, over the period 1970 to 1981, was only 5,3 percentage points, markedly less than in other major Community countries and in the USA and Japan (Table 10).

The Federal Republic has also experienced low rates of price inflation for investment and export goods in recent years. Price movements in these sectors tend to benefit from the longer term improvements in productivity which occur in manufacturing industry and which are greater than in other sectors of the economy. The gap in performance between Germany and the Community average widened considerably after 1973 ; thus, the rise in export and investment goods' prices accelerated sharply in most Community countries, while in Germany the rate of increase in the price of investment goods fell, and the rate for export prices remained stable (Table below).

Average annual percentage rates of change (a)

	1960-67	1968-73	1974-81
Investment goods prices			
D	3,2	6,8	4,7
F	3,7	5,8	11,0
EC 10	3,5	7,8	10,5
Export prices			
D	1,0	3,3	3,4
F	1,0	4,8	8,7
EC 10	1,2	5,0	9,1

(a) National accounts basis : implied deflators
Source : Eurostat and Commission staff

The very moderate price increases for German exports, since 1973, in DM terms, has helped to strengthen the competitive position of German industry, and so offset the adverse effects on German exports of the upward pressures on the DM exchange rate. The strength of the DM has in turn, by reducing import prices, helped to sustain a lower rate of domestic inflation in Germany than in its main competitor countries.

In examining the forces that generate a particular inflationary profile, attention must be focussed upon labour costs, in most cases the major component of inflation. This again reveals a growing disparity between Germany and the Community average since 1973.

In the decade to the first oil price shock, compensation of employees per head in Germany rose at a rate close to that of the Community as a whole but from 1974 onwards the average annual rate of growth was only 7 % compared to 14 1/2 % for France and 12 1/2 % for the Community (Table 8). This impressive performance on the wages side is also reflected in the development of unit labour costs in manufacturing industry. Thus, while between 1960 and 1973 unit labour costs in German manufacturing industry increased faster than in the major trading partner, France, and were close to the average for the Community, largely reflecting the slowdown in the average rate of growth in German manufacturing output compared with the nineteen fifties, the relative position of German manufacturing industry improved markedly after the first oil price shock (Graph 2 and the accompanying Table). This can be accounted for by a combination of lower income growth than in other countries, and the somewhat faster rate of growth of labour productivity experienced in the Federal Republic since 1973 (Section A below).

There are three basic domestic factors which have helped the Federal Republic to achieve a better inflation performance than most other countries : (a) higher priority has generally been given to price stability than elsewhere and a greater consensus has developed on the need to accept that stiff measures are often necessary to contain inflationary pressures; (b) the independence of the Bundesbank, which has legal powers to withhold support for Government policy, should this be inconsistent with its main task of "protecting the currency", and (c) a trade union and management system whose structure and practices have made it easier to adapt to technological change as well as being conducive to levels of pay settelement that have had a less inflationary impact on costs than in other countries.

The third of these factors is particularly important.Indeed, it is argued that the orderly development of the wage bargaining process has avoided wage cost inflation on the scale experienced in other countries (Streeck 1981). An indication of the more modest inflationary bias of the German system of income determination is given by examining the total increase in compensation per employee, for the three years 1973, 1974 and 1975 taken together, which cover the oil price shock and its after effects, a period when wage bargainers were under particular pressure to maintain the level of real earnings. In the Federal Republic the total increase was 36 % in nominal terms (but 12 % in volume terms), in France 57 % (17 %) in the United Kingdom 76 % (12 %) and in the Community as a whole 59 % (13 %). Consequently, the lower rate of wage inflation in Germany was not associated with any significantly slower growth of real incomes when compared to the Community. Nonetheless, it can still be argued that a growth of real incomes of 12 % per head, in the period to 1975 and following the first oil price shock,was far too large given the structural adjustment required at the time.

The substantial increase in oil prices and the subsequent shift in the distribution of incomes, and the marked deterioration of the external position of the western industrial countries, pointed to the need for a substantial switch of resources into net exports,particularly of manufactured goods. At the same time, every effort was needed to avoid the generation of inflationary spirals, which would clearly hamper the adjustment process and damage longer term growth and employment prospects.To some extent the German economy was able to respond in this way to the challenge of the oil crisis. However, the response could well have been even more satisfactory,thus ensuring a more sustainable recovery in later years,had the growth of real wages been less,so reinforcing the competitive strength of the German economy.

The other important component of price inflation,import costs,was favourably influenced by the behaviour of the DM exchange rate which maintained a sustained upward movement against the dollar over the ten year period to 1980(Table 9).Graph 3(upper part)shows that this strength substantially reduced the level of imported price inflation in every year over that ten year period. The effect was particularly marked in 1973 and in 1978.In the latter year the strength of the DM against the dollar made a major contribution towards the fall in the annual rate of consumer price inflation to just above 2 %.

Overall however,despite the satisfactory relative price performance, the decade to 1980 was one in which inflationary pressures in Germany,as in other countries, were greater than recorded in the fifties and sixties and

were certainly far in excess of the pressures envisaged at the time when the Law on Stability and Growth was passed in 1967 [1] .While this was partly the result of exogeneous factors over which the Federal Republic had no control,the importance of these factors should not be exaggerated.For example, the direct and indirect impact of the second oil price shock on the price deflator of GNP in 1979 and 1980 has been estimated by the Bundesbank,using its econometric model, to be about 1/2 % in each year. Incomes,however,grew at a fast enough pace to ensure a sustained increase in real earnings and in real personal disposable income;thus standards of living,as conventionally measures continued to rise in the period to 1980.This longer term trend was, however,interrupted in 1981 when a small fall in real disposable income was recorded,the first reduction in any year since the establishment of the Federal Republic(Bundesbank,No.4,1981).A further fall occurred in 1982 (Tables 11 and 1).

The sustained increase in real earnings to 1980 occurred at a time when productivity growth fell below the rates recorded in previous decades and as a result the overall share of wages and salaries in total net incomes (the so-called wage share or Lohnquote),adjusted for changes in the structure of employment,increased significantly from 62,9% in 1970 to 66,1% in 1975.

Wage share (adjusted for changes in employment structure) %

1960	1970	1975	1980	1982
60,1	62,9	66,1	64,7	64,8

Source : SVR, 1981-82

After falling somewhat in the late nineteen seventies the wage share increased again to the 1975 level by 1981.

A comparative analysis (European Economy No. 14,1982) shows that the changes in the wage share in the Federal Republic, since the first oil price shock, have been quite modest compared to the movements observed in other countries.Moreover,forecasts of developments in 1983 suggest that the upward trend has been reversed,with the accumulated fall in the wage share over the period 1981-1983 bringing it back to the levels observed in the early nineteen seventies.This is evidence in favour of the view that the German economy is adjusting satisfactorily(albeit with a marked delay)to the second oil price shock.Indeed,the adverse movement in the terms of trade inevitably implied a loss of real incomes for oil importing countries.

1 This Law commits the Federal and Länder Governments to secure the stability of prices, a high level of employment and external balance under conditions of steady and adequate economic growth.

C. Trends in the external accounts

The Federal Republic enjoyed a marked surplus on the balance of trade from the early nineteen fifties to the late nineteen seventies, and in particular throughout the period 1973-1975 when the initial impact of the first oil price shock pushed France, and other major industrial countries, into marked trade deficit (Table 12). Although adjustment to the second oil shock was somewhat slower, the current balance returned to surplus in 1982. A particular feature in more recent years has been the importance of the markets of the Organisation of Petroleum Exporting Countries (OPEC) to German exporters. However, the marked changes in both real and nominal oil prices that have occurred since 1973 have made these markets rather volatile.

Up to 1969 the trend towards increasing trade surpluses registered by the German economy can be accounted for by export volume growth being somewhat faster than import volume growth, a development which many commentators believe was assisted by a favourable exchange rate for the DM within the Bretton Woods System (Table 9). Between 1969 and 1972 however, import volume growth was greater than that of export volume and the substantial trade surpluses registered were largely due to improvements in the terms of trade which, in turn, were a reflexion of the appreciation of the DM. Indeed, over this period German producers and exporters managed to maintain, if not improve, their value share of world trade by strenuous efforts to limit the adverse impact on export volumes of the loss of competitiveness resulting from the strength of the German currency (Table 13 and Chapter IV.C).

Significant changes in external trade performance took place at the time of the first oil price shock. In 1973 and 1974 the Federal Republic achieved a most vigorous rate of export volume growth while the monetary stabilisation programme introduced at that time restrained the growth of imports. Taken together, these developments more than offset the effect on the trade balance of the decline in the terms of trade due to the oil price rise.

The Federal Republic's external trade position following the first oil price crisis

	% changes			
	1973	1974	1975	1976
Export volume growth } goods	14,1	12,0	-8,3	12,6
Import volume growth } goods	1,4	1,6	3,7	13,6
Terms of trade	-5,6	-6,5	5,9	-2,3
Trade balance (DM'000 mill.)	40,6	57,4	43,3	42,0
as % of GDP	4,4	5,8	4,2	3,7

Source : Commission staff

Indeed, the volume of German exports increased so rapidly at this time that the share of German exports in world trade particularly for manufactures rose substantially (see Chapter IV.C).

Although export volumes fell markedly in 1975, as the industrialised world moved into recession, the Federal Republic benefitted again from a significant improvement in the terms of trade to which the appreciation of the DM made an important contribution.

However, the response of the German economy to the second oil price shock appeared to be less satisfactory than it was to the first. In 1979 and 1980 the volume movements of exports and imports of goods were not sufficient to offset the deterioration in the terms of trade occasioned by the oil price rise and, as a consequence, the trade surplus declined sharply and downward pressures built up in the foreign exchange markets, an unusual experience so far in the history of the Federal Republic.

However a marked improvement in the trade balance began in the course of 1981, a development which reflected :

- the stagnation of domestic activity and the decline of import volumes;
- the vigorous growth of exports particularly to OPEC;
- the improvement in the terms of trade, as a result of weak commodity prices and an appreciation of the DM.

The impact on the German economy of the two oil price shocks together with the enlargement and development of the European Community explain, in part, the marked changes in the structure of trade that have occurred (Tables 14 and 15). On the export side, the relative importance of trade with the EC increased significantly between the nineteen sixties and nineteen seventies, whereas trade with the other European countries declined substantially. The response of German exports to the disequilibria generated by the two oil price shocks is clearly reflected in the increase in the importance of OPEC in total German exports in 1975, and again in 1981. Indeed,between 1980 and 1981 exports to OPEC increased by 52 % in value terms and there was also a substantial increase in the value of exports to the other developing countries (23 %). The recent increase in exports to OPEC together with subdued oil imports, due in part to energy saving measures and the favourable development of oil prices, means that in 1982 Germany moved into surplus with the OPEC countries (Table below).

Balance of trade with the OPEC countries DM'000 mill.

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Exports(fob)	4,7	6,0	10,5	16,7	20,7	24,9	24,5	19,2	22,8	34,9	38,0
Imports(cif)	8,3	10,4	23,8	20,2	24,4	23,5	19,4	27,0	37,4	37,5	32,8
Balance fob/ cif	-3,6	-4,4	-13,3	-3,5	-3,7	1,4	5,1	-7,8	-14,6	-2,6	5,2

Source : Bundesbank

As a counterpart to these movements the North American market has declined in importance both for exports and as a source of imports (Tables 14 and 15).

Exports from the Federal Republic are dominated by manufactured goods which account, on average, for some 85 % of the total. Furthermore, a substantial proportion of German manufactured exports are produced by a small number of branches, namely the machine-tool, road vehicle, chemicals, electrical goods and iron manufacturing industries. However, although the proportion of total exports accounted for by this group of industries has remained broadly constant over the past two decades at about 62 %, there have been significant adjustments in the structure at the more detailed level and the rate of structural change accelerated distinctly after the first oil price crisis (HWWA, 1980).

Imports are less concentrated in particular sectors and the changes that have occurred in the sectoral composition reflect price movements (particularly of raw materials and fuels) rather than volume movements (HWWA, 1980).

The more marked change in the structure of exports following the first oil price rise, and the associated change in the structure of imports, illustrates the favourable response of the German external position to the first oil price crisis already noted. Thus, vigorous export growth over this period led to a sharp increase in the trade surplus for manufactured goods from 1973 onwards, and in particular for investment goods (Table 16) offsetting the increased deficit on raw materials and related items.

These developments are reflected in studies which attempt to establish the factors explaining German export growth. Little stress is laid upon the loss of competitiveness due to the strength of the DM. Rather, the major explanatory factor is seen as being an appropriate commodity and geographical structure of exports matching, where necessary, the major growth points of world trade (HWWA, 1980).

It should be noted that the proportion of exports that might be classified as high technology goods has risen distinctly in the nineteen seventies, pointing to a move away from low technology products and those based on the use of unskilled labour (European Economy, No. 4 1979). However, this increase was somewhat less than that registered for imports. In particular the proportion of high technology imports from the USA increased almost fourfold over this period and from Japan by six times (HWWA, 1980).

Although the Federal Republic has as a rule achieved substantial surpluses on the balance of trade, it has experienced a sustained and substantial deficit on services and factor incomes (in most years accounted for by the deficit on travel and tourism) and on transfers (partly a reflection of the substantial population of foreign workers in Germany - Gastarbeiter).

For the major part of the post-war period the external trade surpluses have offset the deficits on services and transfers and the current account has remained in surplus. However the deterioration of the trade balance consequent on the second oil price shock was so marked that the current account moved into deficit for the first time since 1965. The subsequent improvement in the external position from late 1981 onwards reflects;

- the improvement in the trade balance already noted;
- the appearance of a more favourable trend for net earnings from services;
- the stabilisation of the deficit on transfers.

The first and second oil price shocks caused substantial changes in the pattern of capital flows (Table 17). Since 1973 there has been a substantial increase in the level of outward, private sector, long term capital movements, whilst the equivalent capital imports have remained on average at a somewhat lower level. A major part of this development can be accounted for by changes in the pattern of direct investment.

For much of the post-war period, Germany benefited from considerable net direct inward investment which facilitated the process of industrial reconstruction. The subsequent substantial build-up of outward direct investment from the mid-nineteen seventies onwards, has led to concern that the Federal Republic is, in some way, exporting jobs. However,an analysis of the factors behind direct investment abroad suggests that it is primarily related to establishing a marketing and servicing structure associated with a given level of German exports, and does not result from the desire to exploit a more efficient and profitable manufacturing environment (IfW, 1979).

III. THE MEDIUM-TERM EVOLUTION OF FISCAL AND MONETARY POLICY

In Chapter II it was noted that in the Federal Republic;

- the rate of growth of GDP has been slowing down since the nineteen fifties,
- the inflationary pressures generated by the two oil price shocks were more successfully contained than elsewhere;
- the vigorous response of export volumes in the period of 1973-74 and, after some delay, in 1981, made a significant contribution to the necessary adjustment to the two oil price shocks.

Most assessments of medium-term prospects for the German economy point to a continuation of these trends. The growth rate of GDP is seen to be relatively modest compared to the performance of the nineteen fifties and sixties. Most medium term forecasts, available at the time of writing (including those of the Commission's medium term COMET model), point to an average rate of growth of GDP in the next 3-5 years of between 2 and 3 % (Jaumann, 1981; IFW,1981 and 1983; RWI,1981; WLG,1982; Ifo 17/18, 1982). Combined with unfavourable demographic developments in the years ahead, this points to a marked increase in unemployment (Chapter IV.D). At the same time a further easing of domestic inflationary pressures is expected as well as the maintenance of external equilibrium over the longer term. German exports are expected to continue to gain market share, even if world trade growth is sluggish. A set of the more recent medium term forecasts is summarised in Table 18. From the point of view of output and unemployment these trends are by no means satisfactory, and there is at present a vigorous debate, both within and outside the Federal Republic as to how economic policy should be geared so as to improve the overall outlook for growth.

This suggests it would be useful to consider how economic policy, and in particular monetary and fiscal policy, have developed over the last decade.

A. Fiscal policy

As Chapter II.A has shown, the period between 1960 and 1975 was one during which General Government expenditure, as a proportion of GDP, increased significantly (Table 7 and Graph 1). This was due to substantial increases both in General Government consumption, and in current transfers particularly to households; the proportion of GDP accounted for by fixed investment increased only marginally. In

contrast to expenditure, General Government revenues did not increase so rapidly over this period, and so General Government as a whole moved from a position of net surplus in the nineteen sixties, to net deficit from the mid-nineteen seventies onwards (Table 20 and Graph 4).

The marked growth of General Government expenditure, combined with the move into deficit, has led some analysts to argue that the fiscal stance has had a positive impact on the level of economic activity for much of the period. Indeed, in a recent study, the OECD has stated that "over the past two decades public sector transactions had a dampening effect on activity in only two years" (OECD, Economic Survey, Germany, 1982) (Table 19). This judgement is based on a demand weighted measure of fiscal impact, i.e. one which allows for variations in the multipliers associated with the different components of demand and revenue, and which also allows for secondary demand effects. On the basis of this measure the stance of policy made a modest contribution to activity up to 1972 with the exception of 1969, a year of relatively rapid growth following the 1967 recession.

The OECD analysis points to very marked variations in fiscal impact from 1973 onwards, with the fiscal stance contributing to growth in the aftermath of the first oil price shock (1974 and 1975) becoming more restrictive as growth recovered (1976 and 1977) and then providing support to activity.

However, it can be argued that this demand orientated analysis is unsatisfactory and does not give a clear picture of the contribution of the public sector to the level of activity. Rather, the increase in public sector borrowing in 1974 and 1975 set up excessive pressures in financial markets which would have threatened growth in subsequent years had the move to a more restrictive policy not occurred. Furthermore, the slowdown in growth since 1979 would reflect, in part, the move to a higher level of General Government borrowing from 1977. One reason why a high government deficit is considered to be unfavourable to longer term economic growth is that such deficits may favour consumption at the expense of investment (as experience suggests that most measures to constrain such deficits tend to fall on investment) and therefore adversely affect the longer term growth potential of the economy. This points to the possibility that government consumption replaces private investment, a most undesirable form of crowding-out.

The Council of Economic Advisers (SVR) in its assessments of the economic situation in Germany undertakes two analyses of the stance of fiscal policy (SVR, 1982-83). In the first of these analyses an attempt is made to estimate the levels of General Government revenue and expenditure that would arise if economic activity was, in some sense, on trend. The difference between the resulting "conjuncturally neutral deficit" and the actual deficit, is then termed the "conjunctural impulse" arising from the budget. The Table below suggests that the

Components of General Government deficit (a) DM billions

	1975	1976	1977	1978	1979	1980	1981	1982
1. Conjuncturally neutral deficit	-19,5	-18,7	-17,9	-8,9	-3,2	-7,4	-18,3	-17,9
2. Conjunctural impulse	35,9	16,5	3,8	20,1	34,0	42,2	49,3	49,1
3. Actual deficit (1-2)	-55,5	-39,4	-25,4	-30,2	-37,6	-49,7	-67,6	-67,0

(a) positive : expansionary; negative : contractionary.
Source : SVR, 1982-83

conjunctural impulse generated by the budget increased markedly between 1977 and 1981, suggesting that the budget gave quite pronounced support to activity. However, one member of the Council of Economic Advisers (Hans-Jürgen Krupp) has disagreed with this conclusion (SVR, 1982/83) and has argued in particular that the force of fiscal policy, insofar as it affects employment, is given by changes in the conjunctural impulse and not by the level of the impulse itself. On this basis the impact of the budget declined considerably from 1979 onwards. Analysis of a related kind is undertaken by the European Commission where two components of the change in the budget deficit from one year to another for each Member State, namely the effect of the change in economic activity, and the effect of the change in net interest payments, are separated out (Annual Economic Review 1982-83, Chapter 6).

In addition to the above analysis, which tries to measure the expansionary or contractionary impact of the budget on economic activity, the SVR undertakes another analysis of the government deficit with a view to identifying that part of the deficit that would be reduced if economic activity recovered. To this end, the SVR subdivides the General Government deficit into the following three components :

- borrowing due to an inadequate level of capacity utilisation (and related to the cyclical position of the economy),
- a normal level of borrowing linked to the conjuncturally neutral deficit (and considered to be about 1 % of total productive potential),
- the structural deficit which may be considered to represent the longer term underlying disequilibrium between expenditure and revenue (SVR, 1982).

The results of this analysis are set out in Graph 5. It points to a substantial growth in the structural deficit in the period to 1981 but a fall thereafter.

Overall there is some evidence to suggest that budgetary policy has been actively used to influence the level of economic activity, although, in more recent years, the calculation of the impact of changes in the level of Government borrowing on other sectors of the economy has become a matter of dispute. However, there is now a wide consensus that the budget structure requires a period of correction before there will be further significant scope for traditional anti-cyclical action through discretionary tax and expenditure measures. This points to the need for a medium-term strategy for Government expenditure and borrowing, to contain expenditure well within the growth of GDP and to bring about the necessary restructuring of expenditure and revenue.

B. Monetary policy

Ever since its creation in 1957, the Deutsche Bundesbank has had a major influence on the course of the German economy. In accordance with the Bundesbank Act, the Bank, in the event of a conflict with the objectives of the Government's general economic policy, has to give priority to its primary task, namely safeguarding monetary stability. In particular, the Bundesbank has always shown itself to be aware of the importance of the Public perceiving its determination to achieve this aim. Consequently, the Bank makes a major effort in matters of presentation, pursues its aims with great persistance and is always eager to achieve a consensus for its policies.

Against the background of great uncertainty and inflation, created by the first oil price shock coupled with the rapid growth of earnings in German industry, the Bundesbank introduced in 1974, the first major central bank to do so, a system of monetary targets, defined in terms of the growth of Central Bank Money Stock. The control of this aggregate, the trend movements of which were close to those of the money supply in its broader definition (M3), was facilitated by the free floating exchange rate system that followed the ending of the Bretton Woods arrangements and which removed the obligation for the Bank to purchase and sell large amounts of foreign exchange at a fixed rate. The announcement of a commitment to

monetary targeting would, it was felt, influence expectations and behaviour both in the domestic labour market and in financial markets, in such a way as to have a beneficial impact upon inflation.

In establishing the form of the target for the Central Bank Money Stock the Bundesbank takes account of the following four considerations :
- the expected growth of the productive potential of the economy;
- desired changes in the level of capacity utilisation;
- the unavoidable increase in prices;
- the expected change in the velocity of circulation of money.

The chosen target therefore made allowance for the need to restrain inflationary pressures as well as to provide adequate room for the growth of activity.

However, it should be stressed that controlling the growth of the Central Bank Money Stock is only one of the instruments of monetary policy which facilitates the Bundesbank's task of ensuring currency stability - or more generally, internal and external equilibrium - whilst at the time supporting economic growth and employment. Moreover if, in a given period real activity, inflation and the external position, all develop satisfactorily, then the extent to which this is associated with the achievement of a given monetary growth rate could well reflect changes in the velocity of circulation and in the demand for money resulting from structural factors. Conversely, failure to meet the target, need not necessarily suggest a mismanagement of monetary policy, particularly if economic growth, inflation, and the balance of payments are moving in the desired direction. Thus although in the years immediately following the inception of the system (in particular, in the period to 1978 when it was formulated in terms of point targets), the monetary authorities had only a limited success in actually achieving their targets for monetary growth (Table 21), it can be argued that the system had a beneficial impact on inflationary expectations as, by 1978, the annual increase of consumer prices had fallen to significantly below 3 %.

In order to provide an increased degree of flexibility in the operation of monetary policy the Bundesbank from 1979 onwards, adopted, instead of a single point, a targe <u>range</u> for the growth of the Central Bank Money Stock (Table 21 and Graph 6) with the refinement that, early in the year, an indication would be given whether the Bundesbank was aiming

for the uppor or lower part of the target range. It was felt that such an approach would increase the room for manoeuvre available to the monetary authorities, to react to unexpected disturbances affecting prices, exchange rates or levels of economic activity without threatening the credibility of monetary targeting.

To ensure overall financial stability and to bring about a particular growth of the monetary aggregates, the Bundesbank has used all the instruments of monetary policy. In consequence it has not tried to carry out a liquidity or interest rate policy for its own sake. However, changes in monetary conditions have led to shifts in the emphasis placed on the various instruments. Thus often a greater use of interest rate policy has been required; at other times the emphasis has been upon controlling liquidity be means of rediscount 2 quotas, limits on Lombard facilities as well as intervening in the money markets which in recent years has become of particular importance.

During 1980 and 1981, when the balance of payments current account was in substantial deficit and when the DM was weak, in particular vis-à-vis the USD, the growth of the Central Bank Money Stock moved along the lower end of the target range, but accelerated thereafter (Graph 6). Developments in 1982 in particular,reflected the concern of the Bundesbank over the stagnation of economic activity in the Federal Republic. Indeed,the fall in interest rates since the autumn of 1981 has been marked and real rates of interest have come down in early 1983 to their long run average, about 3,5 % (long-term) and 2 % (short-term).

In conclusion, monetary policy in the years ahead is likely to be less constrained by the external situation than has been the case since 1980. If due attention is given to the foreseeable low level of capacity utilisation, Bundesbank policy can be expected to exert an expansionary impact on economic activity while containing inflationary pressures to levels well below those experienced in the 1970's.

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2 Rediscount quotas determine the extent to which the Bundesbank will accept and rediscount commercial bills already accepted and discounted by the commercial banks.

IV. MAIN MEDIUM-TERM ECONOMIC ISSUES

A. Growth potential

Productive potential is sometimes defined as the total output obtainable under conditions of normal utilisation of available production factors and sometimes as that achievable through their full utilisation such as is observed rarely, usually at peaks in the business cycle. However, for the purpose of analysing long-term trends, the distinction between normal and full capacity utilisation becomes of relatively minor importance (Stark, 1982). In contrast to the actual level of output in an economy which is reflected in statistically observable volumes, estimates of productive potential are based on a hypothetical production function which describes the functional relationship between factor input (labour and capital) and potential national output. It is not surprising therefore, that significant differences of approach to the concept and calculation of productive potential can be observed. The concept of productive potential was first introduced into the economic policy debate by the Council of Economic Advisers (SVR) (beginning in 1967, drawing upon the groundwork carried out by the German Institute for Economic Research (DIW) in Berlin, and then by the Bundesbank (1973). Whereas initially the SVR took the DIW definition of productive potential, as the maximum level of GDP growth achievable under conditions of full capacity utilisation, basing its estimates on the productivity of capital at the upper turning point of the business cycle, it has recently extended its concept and now calculates figures for productive potential under conditions of normal utilisation of fixed assets as well as under conditions of full capacity utilisation. This new concept is closer to the Bundesbank approach, which takes productive potential to mean the level of GDP which can be achieved, using all available production factors and taking account of technological progress, under conditions of average capacity utilisation. An important aspect of the Bundesbank estimates is that it uses them as one of its criteria in determining money supply targets.

The methods used in the two estimating procedures are in fact quite different. Under the method used by the SVR, productive potential is calculated as the aggregate potential value added

of enterprises, government, the renting of dwellings, households and private organizations. In the case of the non-entrepreneurial sectors, it is assumed that their productive potential is always fully utilized and can therefore,be treated as equivalent to their contributions to gross value added. The real problems involved in the estimates thus boil down to estimating the potential output of enterprises. The SVR (like the DIW) focuses exclusively on the stock of gross fixed capital available during particular periods. Potential ouput is thus limited by the level of the available capital stock. An estimate of the potential productivity of capital is derived as a trend function of the empirical productivity of capital, taking into account the impact of structural developments, reductions in working hours, factor substitution and technological progress.

The Bundesbank,by contrast,assumes that the economy's productive potential can be expressed by a Cobb-Douglas type production function for which the variable production factors are the available labour supply (measured in hours), the stock of economically viable gross fixed capital and (a recent development) the degree of scarcity of energy supplies. Technological progress is assumed to be autonomous, so that its realization is not linked to the level of gross investment, and the capital stock is homogeneous in the sense that its age structure does not have any direct influence on potential output. Furthermore, the use of a Cobb-Douglas function implies ex-post substitutionality of production factors. The available production factor units can therefore,always be incorporated fully in the production process. This means that the problem of structural unemployment is not reduced so much to a lack of physical capital, as is the case under the SVR approach, but is rather more a matter of factor price relationships. If however, the capital stock is regarded from an ex-post point of view as a limiting factor of production that cannot or can only to a very limited extent, be combined with a variable amount of labour, the existence of structural unemployment implies that the approach of the Bundesbank probably overstates somewhat the productive potential of the Federal Republic.

The trend paths of productive potential under the two estimating procedures (SVR and Bundesbank) are set out in Graph 7. The fluctuations in the trend of actual GDP, also shown in the Graph,

indicate variations in the extent to which productive potential was utilized. (The corresponding growth rates are given in Table 22). The Graph also illustrates the problems involved in estimating productive potential. The national accounts revision for the period from 1960, which was carried out in the summer of 1982, meant that the SVR had to revise its estimates; both the new and old calculations are shown in the Graph. The reestimation of fixed capital alone resulted in a considerable reduction in maximum potential output following the first oil price shock. Since the Bundesbank's reestimation of productive potential is not yet available, the trend shown is based on the estimates of the capital stock carried out before the changes made in the national accounts.

In addition to the statistical problems involved in estimating the domestic capital stock, other factors have recently emerged which may affect calculations of productive potential. The changes in the structure of factor prices caused by two oil price shocks and the associated shifts in the structure and trend of demand have probably had some effect on productive potential. Thus, it is assumed that a proportion of the gross fixed capital shown in Graph 7, although technically operational, can no longer be used in a commercially profitable way and is thus obsolete (Bundesbank, 10/1981). A prime example of this is the steel industry, where the existing capacity can no longer be utilized, and plant closures or rationalisation have become unavoidable. This in turn has repercussions on capacity utilisation in other industries (coking coal). The growing number of failures in business and industry is a further factor which has to be taken into account in this context. While the question is still under discussion, the DIW has concluded that the impact of company failures on growth potential is modest (DIW, 45/82).

Decline in growth potential and underutilisation of productive potential

The calculation methods described above reveal a distinct weakening in growth potential since the first oil crisis of 1973 [3]. The second oil price shock too is expected to produce a further decline, though its effects are not yet fully evident; the most recent estimates indicate that in the medium-term the potential growth figures should probably be in the range of only 1 % to 2 %.

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3 Other estimates of productive potential have recently been made (Stark and Westphal, 1982). Allowing for methodological differences, principally applying a vintage approach model, these estimates too indicate a marked weakening of growth potential since 1975 (Table 22).

	Growth of productive potential and GDP % changes			
	1962-67	1968-73	1974-79	1980-83
SVR method (old)	4,6	4,3	2,5	2,1 (a)
(new)	4,5	4,1	2,3	1,7
Bundesbank method	4,2	4,5	2,7	2,0
Real GDP	3,5	5,0	2,4	0,1 (b)

(a) 1980-81.
(b) Commission staff estimate.
Source : SVR; Bundesbank

It should be noted, however, that it is not only the slow-down in the growth rate of potential GDP, but also the gap that has been recorded between actual GDP and the potential level, given the factor endowment of the economy, that increasingly distinguishes the post-1974 period from the previous period. Even in the period from the second half of 1978 to the first half of 1980, when the growth rates of national output were generally satisfactory (annual growth rate of GDP 4,5 %), the labour production factor could not be fully utilized. During the relevant period 888 000 people on average were without work, and the average unemployment rate amounted to 3,9 % (as compared with 1,0 % in 1962-73).

A superficial analysis of this phenomenon might suggest that, at least from 1974 onwards, the demand for goods and services as a whole was not sufficient to allow production to rise to its full potential. The German economy has been suffering particularly from a lack of investment demand since 1972. For example, the annual growth rate of real gross fixed capital formation from 1960 to 1971 averaged 4,7 %, as against zero growth in the period from 1972 to 1982. It might therefore be assumed that the distinct decline in the propensity to invest resulted in the observed decline in potential growth. Eventually, the capital stock was no longer sufficient to absorb the available supply of labour even with almost full utilization of capacity.

Various view have been expressed as to the fundamental causes of the weakness in investment; the two main schools of thought being :

- Following the decline in profit ratios in the 1970s as compared with the 1960s, anticipated profits, viewed in the light of sales expectations and the business risks involved, were not sufficient to make additional investment appear worthwhile (Görzig, 1981).

- Labour and capital are not in a strictly complementary relationship, and, even with a given degree of utilisation of investment capital, labour input may always be increased or decreased as labour costs vary. It is argued that the price of labour as a factor of production was such that it did not allow firms, on the basis of their profit calculations, to draw more fully on the labour supply (Kirkpatrick, 1982).

The trend in capital productivity

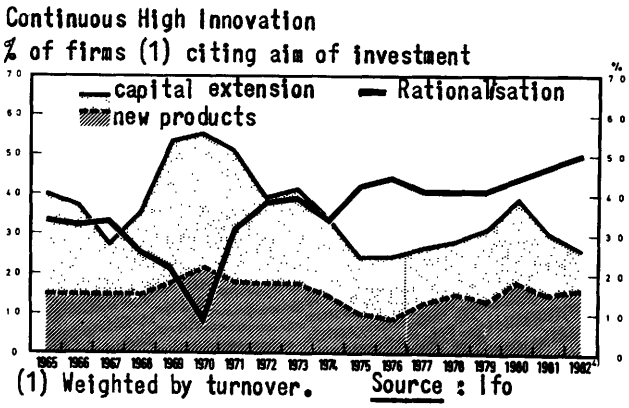
Trends in the productivity of capital are also of great importance for the growth of overall productive potential. In the Federal Republic, the long-term average productivity of capital has declined steadily, and indeed more sharply than in the other Community countries (European Economy, 1981). More and more physical capital is required to produce a marginal unit of ouput. In other words, the ratio of fixed capital to national product increased steadily both in actual terms and in terms of potential. The Bundesbank, for example, states that the potential ratio of fixed capital formation to total national product stood at around 3 in the early 1960s, but amounted to 3,4 in 1970 and 3,6 in 1980 (Bundesbank, 10 / 1981).

However, in a detailed survey covering the trend of productive potential in a total of 34 producing industries, Pischer (DIW, 4/1982) concluded that the trend of capital productivity in mining and manufacturing industry has for some years been reversed, i.e. the capital-output ratio began to fall slowly. This development may be the result of a combination of factors. Measures to rationalize companies or plant lead to more efficient use of existing capacity, i.e. to a lowering of the capital-output ratio in cases where (for example, under cost pressure) an improvement is carried out in plant organization and as a result the periods when plant is idle are reduced or inputs are used more rationally, i.e. net output rises, with a given stock of fixed capital. Another possible reason is technological change. The stock of fixed capital is in a process of continual change; when their useful economic life is over, assets are withdrawn, and new fixed assets are added as part of gross investment. If the marginal capital-output ratio is smaller than the average ratio, the trend in capital productivity must over time cease to decline and begin to climb. There is indeed some evidence

that technological progress, incorporated in new plant and production facilities, is capital-saving in its effect, particularly due to the increasing use of microelectronics, through which expensive labour-intensive and material-intensive control processes can be replaced by cheap electronic components.

This hypothesis is also supported by recent surveys. The Ifo-Institute for Economic Research reports that in the period 1960-71 some 40 % of all the firms surveyed specified the extension of production capacities as the motive for investment, while the proportion specifying this motive in the period 1972-79 was down to an average of 25 %.

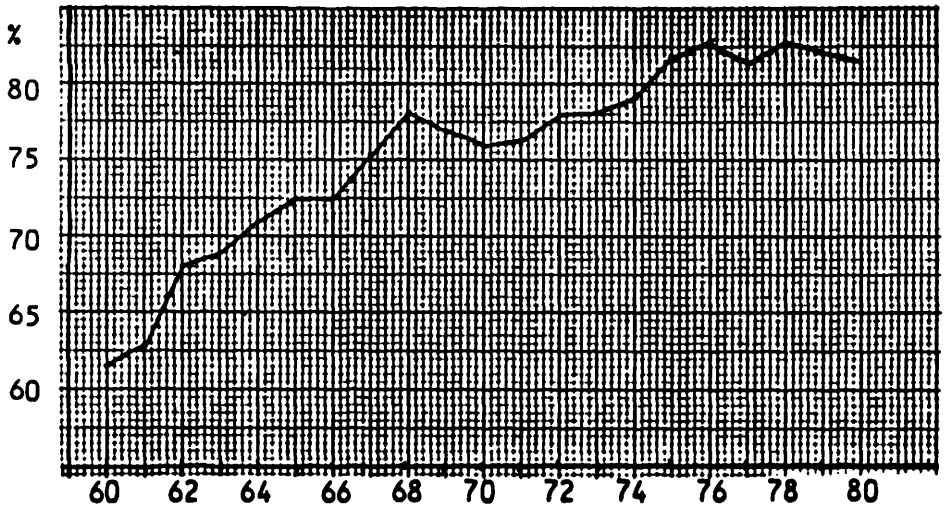
Investment in manufacturing industry



(1) Weighted by turnover. Source : Ifo

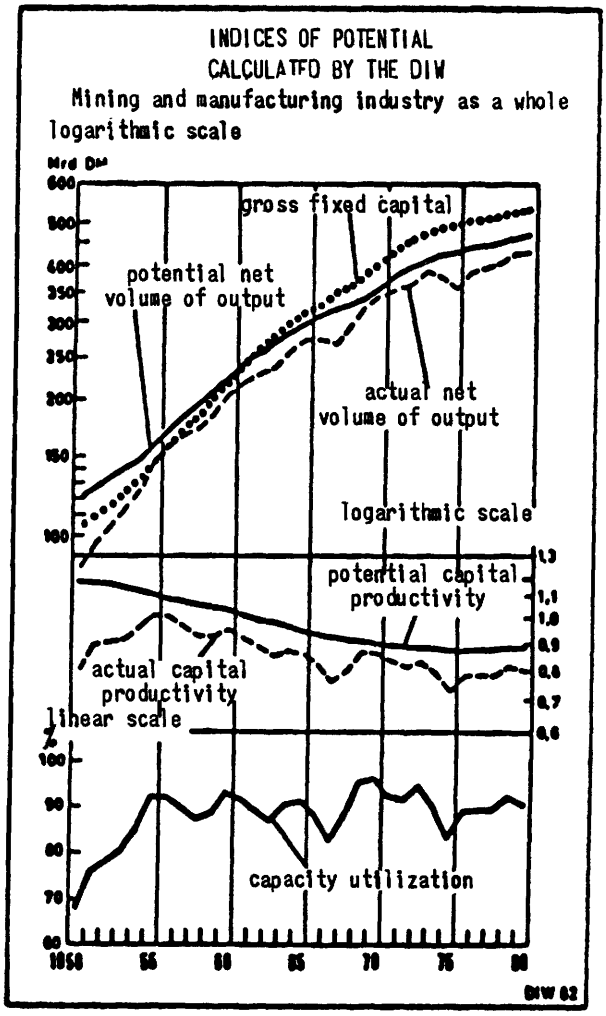
The boom in capital extension between 1967 and 1971 together with the contraction of investment for rationalisation related to the introduction of new production and processing techniques and the subsequent reversal of these respective trends should doubtless be seen in the context of wage developments and external economic conditions (Chapter II, B and C). The reduction in the extension requirements of firms led to a decline in the share of durable and costly building investment and an increase in less durable and relatively cheaper equipment investment (Ifo, 1980). As the following Graph shows, this trend was particularly marked from 1960 to 1968,

Percentage share of equipment in gross fixed capital formation at constant prices in manufacturing industry



Source : StBA; Commission staff

less marked from 1969 to 1975, and from 1976 onwards the ratio between buildings and equipment seems to have stabilized. This shift in the mix of investment in manufacturing industry in favour of more productive equipment might have contributed to the reversal in the trend of the productivity of capital.



The Graph opposite compares the long-term trend of industrial gross fixed capital formation and productive potential. The trend of capital productivity and fluctuations in capacity utilization are also shown.

Graph 8 shows trends in productive potential and in the actual volume of net output for the main producing industries according to the latest calculations made by the DIW.

Source : DIW

Loss of momentum in capital accumulation and ageing of the capital stock

The reversal in the trend of capital productivity in industry was not strong enough to prevent the decline in the growth potential of the economy as a whole, which became evident in the second half of the 1970s, as a result of the weak investment performance during the last decade. This trend emerges even more clearly if one looks at the growth of net fixed capital rather than gross fixed capital 4 .

4. Gross fixed capital is the sum of all the original values of existing plant adjusted using a common price base; this aggregate, less cumulative capital consumption up to the time of inventory, gives the stock of net fixed capital.

Growth rates of gross and net fixed capital at constant(1976)prices

	G = gross N = net	1960-79	1970-80	1970-75	1975-80	1980-81
Fixed capital (a)	G	5,7	4,1	4,8	3,4	3,6
	N	6,2	3,9	4,8	3,0	3,3
of which :						
- equipment	G	6,7	4,6	5,7	3,5	3,9
	N	6,7	4,1	5,4	2,9	4,2
- buildings excluding dwellings	G	5,7	4,3	4,9	3,7	3,8
	N	6,5	4,0	4,8	3,2	3,3
- residential buildings	G	5,1	3,8	4,4	3,3	3,3
	N	5,8	3,7	4,5	2,9	3,0
- public civil engineering		7,2	5,3	6,2	4,5	4,1

(a) Excluding public civil engineering. Annual average % change.
Source : StBA

In the 1960s, the growth rate of net fixed capital formation increased faster than that of gross fixed capital, so that the average age of the capital stock tended to fall. Since 1970, the average age of the capital stock has tended to rise again, with the deterioration in its age structure occurring mainly in the second half of the 1970s. An increasingly large proportion of national fixed capital formation is simply serving to offset retirement of depreciated assets (capital consumption). This trend is evident from the time paths of gross and net investment ratios. Whereas in 1960 only some 30 % of gross fixed capital formation was needed to offset capital consumption, the figure had risen to 57 % by 1981. Net fixed capital formation (i.e. the effective expansion of the productive apparatus) during the decade from 1972 to 1981 was, at an average annual growth rate of -2,7 %, actually lower in absolute terms than the level in the decade from 1962 to 1971, when average annual growth amounted to 3 %.

Graph 9 shows the trend in gross fixed capital formation (as % of GDP) and the trend in capital consumption (as % of gross fixed capital formation) for the Federal Republic and some other industrialized countries and indicates that the deterioration in net capital accumulation was not confined to the Federal Republic alone. Japan however,is an exception. The decline in capital formation was not uniform throughout the economy. It was particularly marked in manufacturing industry, where net capital accumulation since 1974 increased by only 1,6 % as compared with 5,6 % in the period 1962-73. This means that industry, which was the driving force behind growth in the 1960s, is providing hardly any stimulus to the economy, but

has been more or less marking time since the first oil price shock. Table 24 provides a survey of capital accumulation by sector, broken down as between buildings and equipment.

Deterioration in the degree to which the capital stock is up-to-date

An indicator which is used to measure the quality and structure of the capital stock is the "Modernitätsgrad", which is calculated as the ratio of net fixed capital to gross fixed capital (at constant prices). This concept derives from the work carried out by the DIW. In general, the "Modernitätsgrad" is influenced positively by investment and negatively by capital consumption. Since these two flows are only marginal in relation to stocks of fixed assets, the "Modernitätsgrad" indicator can change only slightly from year to year. In a "stationary" economy the figure would be 50 %, indicating a balanced age distribution.

The quality of productive plant in individual branches of industry

According to detailed indices prepared by the DIW (DIW, 1982) the age structure of the capital stock improved in the period from 1970-81 in only two brances, i.e. coalmining,and oil and natural gas production and refining. However, since they occurred only in the second half of the 1970s, these improvements are undoubtedly positive adjustment reactions aimed at securing more efficient utilization and allocation of energy. In all the other branches of industry, plant has become less up-to-date, though this phenomenon was less marked in the capital goods industry than the average for industry as a whole. The most unfavourable age structure is found in those branches which have little, if any, scope for product diversification and innovation and which use predominantly traditional processes. Since Germany's natural factor endowment is such that it does not enjoy any comparative advantage, they are in jeopardy across their entire product range. Consistent with this picture is the fact that the leather processing industry, for example, has a significantly better age structure than the leather production industry, that the textile industry is in a much worse position than the clothing industry and that the shipbuilding industry has a much poorer age structure than the other capital goods industries (Baumgart, 1980). An overall view of the trend of the age structure of investment capital is given in Table 23, using a broad sectoral breakdown.

The growth of investment in the services sector

Ageing of the capital stock as described above for German industry has occurred, if at all, only to a fairly slight extent in the services sector. In the ten years up to 1981, growth rates in gross fixed capital in transport, banking, insurance and in other service enterprises were quite comparable with those recorded in the 1960s. The higher level of investment in the services sector as compared with industry in the 1970s may have been an adjustment response to the high degree of industrialization that took place in the 1960s. In the 1970s, a relationship between the production of goods and the supply of services emerged in the Federal Republic that was consonant with the relationship observable in other economies at a similar stage of maturity.

Figures about investment activity by sector should be interpreted with care giving the increasing importance of leasing of fixed assets. In official statistics, investment activity is normally allocated to the individual branches of production on the basis of the ownership concept. For the purposes of analysis, however, there is a growing need for a concept in which investment is assigned to the user branches. For instance, through its investment surveys in the leasing area, the Ifo Institute was able to switch its investment account from the ownership concept to a user concept, and to apply this retroactively (Ifo, 1980). The results shown in Table 25 imply that in 1979 an investment sum of DM 17 700 million was made available to other branches of the economy by means of leasing, equivalent to some 11 % of all entrepreneurial investment (excluding the renting of dwellings). The main results of the Ifo investment account are summarized in the following Table. The growing importance of leasing as a means of financing

Ratio of leased fixed capital to fixed capital held in ownership (%)

	1960	1970	1975	1979
Manufacturing industry	103	106	113	118
of which :				
- Wood, paper and printing products	106	105	115	176
- Leather, textiles, clothing and food	102	108	118	131
- Capital goods industry	103	106	112	116
Distributive trades and other serives (a)	79	72	70	64

(a) This includes credit and insurance institutions, other services and private organisations.

Source : Ifo, 1980; Commission staff

investment, is evident from these figures. Apart from the fact that it is traditional for assets (buildings) used in the distributive trades to be leased (113 % even in 1960), what is striking is that it is evidently the sectors faced with significant structural problems which have been forced to rely more on leasing of assets to finance their investment, while the capital goods sectors make less use of this form of financing.

Total factor productivity

The movements in capital productivity observed - a steady decline, particularly through the nineteen seventies, followed by a modest recovery - have been associated with increases in labour productivity, the rate of growth of which has, however, slowed down in recent years. These different movements can be combined in total factor productivity indexes, using weights based on factor income shares in gross domestic product (as provided for example in the analysis of Hill (1979)). Preliminary calculations suggest that while in the ten years to 1980 labour productivity in manufacturing industry advanced at an average annual rate of about 3 1/2 %, capital productivity declined at about 1 % per annum, so giving an average annual increase of total factor productivity of about 2 %.

For manufacturing industry the advance in labour productivity is partly due to the growth of output, and partly due to the decline in numbers employed. The latter will, inter alia, reflect the response of labour, as a factor of production, to the adaption of the capital stock, provoked itself by changes in factor prices and in the pattern of demand. Calculations of total factor productivity provide therefore, a useful assessment of the overall effect of capital stock movements on productive performance. For a more detailed study of total factor productivity in German industry see Todd (1983).

Summary and conclusion

Available statistical evidence shows that the growth potential of the German economy has declined distinctly. This trend is a result of the relatively lower level of investment activity in the last decade. The possible reversal of this trend in the form of a rise in the capital-output ratio of trade and industry is not strong enough to offset the losses in growth caused by the weakness of investment activity. Graph 10 attempts to illustrate this trend by comparing the actual trend path of capital accumulation (gross fixed capital) in a number of branches of manufacturing industry and the servicessector with the hypothetical trend path that could have been achieved if the growth in capital formation recorded in earlier years (1962-72) had been maintained.

The Graph illustrates firstly the loss of actual output caused by the lack of sufficient growth in the capital stock. The graph shows not only what would have been necessary, but also what is now necessary in order to ensure a lasting improvement in the growth potential and industrial base of the German economy.

Of course, this sort of simple trend extrapolation cannot be interpreted as a normative guide to how investment activity should continue. This is particularly evident if one looks at the run of the curve in the building sector. Near-saturation point has no doubt been reached in many areas, and existing capacities are probably sufficient to meet future demand. However, it must be borne in mind that, if the decline in capital formation in one sector is not counterbalanced by increased capital accumulation in other sectors, the economy as a whole enters onto a lower growth path.It is also arguable that a return to increased capital formation and hence to higher potential growth has implications for the distribution of national income; if growth is to remain an objective to be pursued for the economy as a whole, a high degree of social consensus will be necessary to enable shares in national income to be adjusted. Failure to do this will mean only moderate potential growth and the adverse social implications of this are evident from the discussion of the labour market below.

However, corrective changes in the distribution of income are also necessary for another reason. In the Federal Republic, the limitations of the basis on which industrial production has hitherto been organized are becoming increasingly evident from the growing amount of environmental pollution. Production processes involve marked external diseconomies. This economic "misallocation" has affected the environment in particular. Concern at the destruction of the environment is now widely shared. While laws restricting the discharge of pollutants have been enacted, these should be regarded as nothing more than a first step. The present legislation is based on the principle of making the polluter pay for the costs of preventing the pollution. However, appropriate technical counter-measures require additional investment which it is not feasible for individual firms to carry out given present profit constraints. While such investment would add to the balance sheet value of a firm, it would not result in increased revenue nor add to the net worth of the firm. It can only be financed therefore, through an adjustment in the income distributed by firms.

Moreover, similar rules will have to be introduced at the same pace in other countries, so as to make environmental protection effective without disturbing relative competitive positions.

B. Structural changes

Following the statement of 16 December 1976, in which the Federal Government announced the drawing-up of regular reports on structural change by sector, the Government in 1978 commissioned each of five independent research institutes (DIW, HWWA, Ifo, IfW, RWI) to report on the problems and evidence of structural change. The first reports were published at the beginning of 1981; a second series should be concluded in 1983. Apart from supplying ample material, these reports show "that there is so far no generally accepted theoretical approach to the economic analysis of sectoral structural change" (Federal Government, 1981). The approach to an analysis of structural changes chosen here is based on the trends observed in five different areas : (i) shares of the economic sectors in value added and employment, (ii) growth and specialisation in foreign trade, (iii) trends in gross fixed capital formation, (iv)the growth of the services sector and (v) changes in State activity.

Main features of structural change

Changes in value added in the economic sectors are shown in Table 26 which also gives the corresponding figures for France[5]. The decrease in the share of agriculture and the increase in the share of market services reflect trends which have also been observed in other industrialised countries. It should be noted however, that after 1974 the market services' share - compared with the trend in France - increased very sharply. While the share of manufacturing industry, which is at a higher level in the Federal Republic than in comparable industrialised countries, has declined since the beginning of the 1970s, this contraction has been relatively slight. There have been considerable shifts, however, in the sub-sectors of manufacturing industry: the sharp decrease in the share of the textile, clothing and leather industries is not surprising; it contrasts with the favourable trend in the electrical-engineering and chemical industries and with the rather more moderate trend in the metalworking and mechanical-engineering sectors. As the present difficulties in the steel industry show, structural pressures

5 At the time this report was finalised (April 1983), the results of the revision of the integrated economic accounts based on NACE-CLIO had not been made available to Eurostat. In order to ensure comparability with other EC countries, use had therefore to be made of Eurostat's disaggregated accounts prior to the revision of the German national accounts.

may be intensified by cyclical influences caused by the recession. This means in turn that the share of other, complementary sectors, such as the coal industry, will decrease even more.

There has been very extensive building investment in the Federal Republic in the 1960s. The steady decline in the building industry during the last decade which has been reinforced by cyclical factors, is therefore generally attributed to the capital stock being more than equal to present needs (Ifo, 1982). As far as the provision of housing is concerned, the Federal Republic stands out well in an international comparison. In the period from 1970 to 1981, some 5,3 million new dwellings were added to the housing stock, so that, statistically speaking, every 4,5th household is living in high-quality accommodation. It is not easy to reconcile these findings with the spirited discussion of the "new housing shortage"("neue Wohnungsnot").

Housing stock per 1 000 inhabitants (1978)

D	F	UK	B	E9
403	351	378	399	367

Source : Commission staff

The infrastructure sector too - and particularly social infrastructure - is likely to provide only very little boost to demand. In the foreseeable future, therefore, the building sector will be unable to increase its contribution to GDP to any perceptible degree, unless it is bolstered by a comprehensive programme of energy saving work.

The changes in the structure of employment. Table 27 shows these changes over the period 1970 to 1980. The German employment structure is generally much more production-oriented than, for example, the French structure. In 1980, the total number of wage and salary earners amounted to some 22 million persons in the Federal Republic and to 18 million persons in France; of these totals, 11,5 million people were employed in Germany in the services sector, as opposed to some 11 million in France. However, between 1970 and 1980 1,5 million new jobs were created in the services sector in the Federal Republic [6]. In the Federal Republic, approximately 37 % of all wage and salary earners are concentrated in the metalworking, mechanical-engineering and electrical-engineering industries, while in France 38,5 % are concentrated in the metalworking, transport, textile, clothing and leather

6 The revised national accounts show a job gain of 2,2 million. See also footnote on page 43.

industries. Taking manufacturing industry as a whole, approximately one million jobs have been lost between 1970 and 1980, compared to only some 150 000 in France. This has been seen by some as a particular weakness in the German economy (Maurat, 1981). It might be argued, on the other hand, that tht high redundancy rates reflect German firms' greater flexibility in reacting to the pressures of international competition and thus clearly constitute a positive element from the viewpoint of structural adaptation (Finlay, 1981). However it could also be a response to the relatively large size of the industrial sector at the beginning of the period considered.

Growth and concentration on foreign trade. The table below shows that foreign trade has played a steadily increasing role in the German economy since 1960.

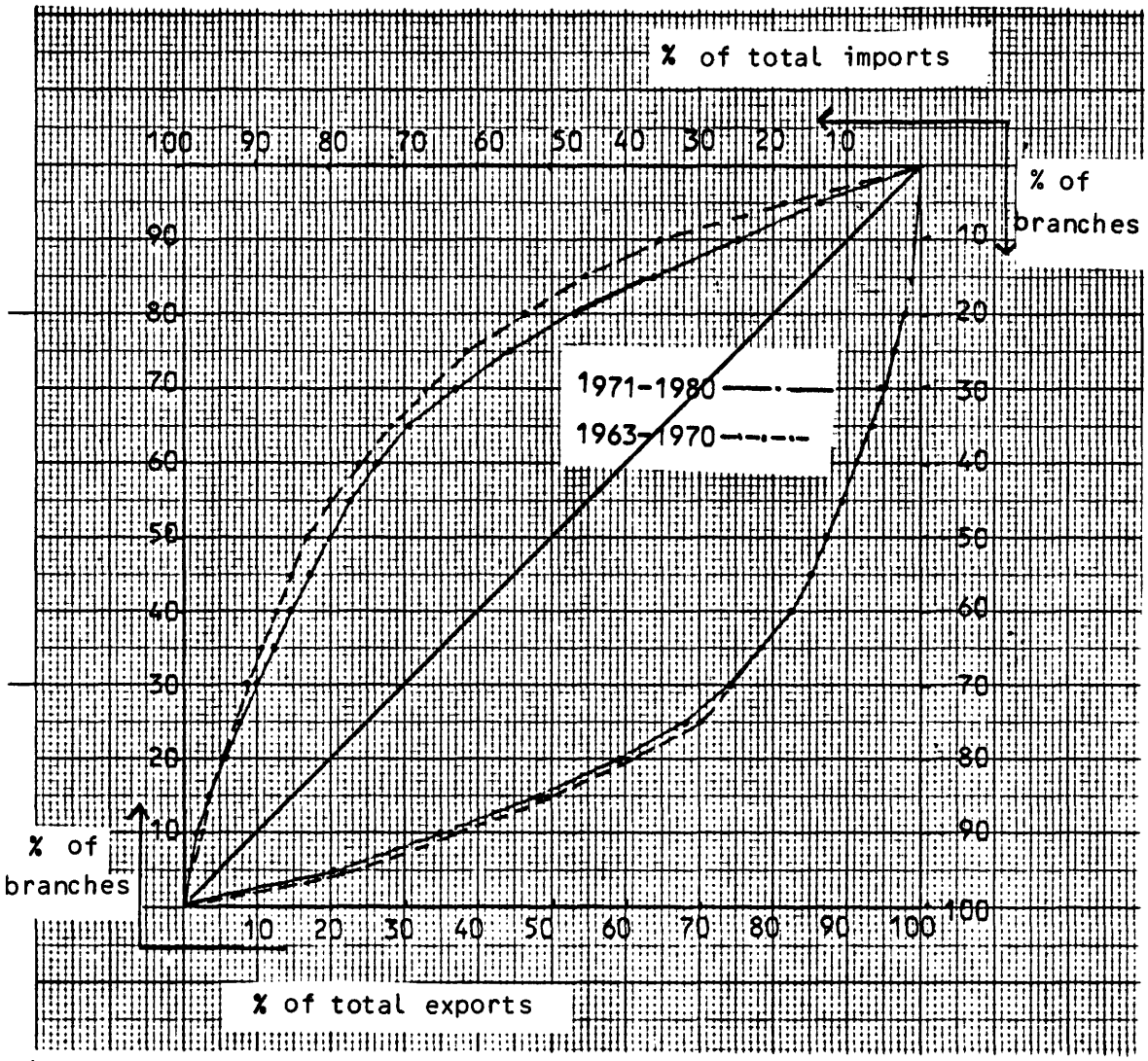
Federal Republic of Germany : total exports and imports (G + S) %

	60-65	66-70	71-75	76-80	81
Exports					
Share in GDP	16,7	19,4	21,7	24,6	28,0
Change at constant prices (goods)(a)	6,5	9,3	6,1	5,8	7,7
Imports					
Share in GDP	15,2	16,5	18,2	22,1	26,0
Change at constant prices (goods)(a)	9,5	9,1	4,1	7,0	-0,5
GDP					
Change at constant prices (a)	5,0	4,2	2,2	3,5	0,2

(a) Average annual growth rates.
Source : Eurostat; Commission staff

Table 28 shows that export demand has consistently exercised a positive influence on growth, particularly in the periods 1967-68 and 1972-73. The elasticity of imports (goods and services) with respect to GDP has steadily increased and now stands at approximately 2,3 on a medium-term analysis. A breakdown of industrial exports and imports by industrial branch (Table 29) shows the degree of concentration on certain goods categories. Overall, imports are clearly less concentrated than exports. On the import side, the concentration switched between 1970 and 1980 (compared with the period 1963-70) in the direction of a more even distribution, whereas on the export side the heavy concentration on only a few branches has scarcely altered. This is clearly shown by the concentration data in Table 29 and in the following Graph. (The less the middle line bulges out, the less concentration

Concentration in the foreign trade structure[a]



(a) Production sectors based on NACE/CLIO-P.
Source : Eurostat; Commission staff

of imports (or exports) on only a few industrial branches; a completely even distribution of imports (exports) would produce a diagonal concentration curve). The Graph clearly shows that German industry is oriented towards specific types of exports. On the export side (Table 29), the first five branches together account for some 70 % of all industrial exports. By contrast, goods produced by these five highly export-oriented branches accounted for only 45 % of imports in the period 1971-80. The diminishing concentration of imports (shift in the concentration curve in the direction of a diagonal) reflects

the fact that foreign suppliers have succeeded in penetrating the German market on a wider front. The rapid growth (8,5 % per annum) in imports of electrical products might give cause for concern.

Finally, the great dependence of German industry on exports is also shown by the fact that in certain sectors over 30 % of the domestic output is sold in foreign markets: production and preliminary processing of metals 32,4 %, chemicals 31,9 %, mechanical engineering 50,2 %, office and data-processing equipment 39,4 %, electrical industry 30 %, the motor vehicle industry 41,9 %, shipbuilding 54,9 % and instrument engineering 49,3 %.

International service transactions and transfers. The German export industry's performance, as reflected in the country's continuous trade balance surpluses, is impressive. However, the surpluses on trade in goods, which have been achieved each year since 1952, contrast with the permanent deficits on the balance in transfer payments (since 1953) and on the balance in services (since 1970) (Graph 11 and Table 30). In the case of transfer payments, the main deficit items are remittances to their home countries by foreign workers in the Federal Republic of Germany, private and public maintenance payments (pensions and similar allowances) and government payments to the European Communities. Over the last ten years (1972-82), transfers to the EC have increased at an annual average of 17 %.

In the balance on services transactions, the positive items are the surpluses from international transport services, which have shown remarkable growth rates over recent years, and the revenue from foreign NATO forces stationed in the Federal Republic. The main negative item is expenditure on holidays and business trips abroad. At the same time, German expenditure on tourism constitutes an important source of foreign currency for the main countries visited and it is advisable, when considering bilateral trade balances, to include tourism (Table below).

Bilateral travel and trade balances[(a)] (DM '000 million)

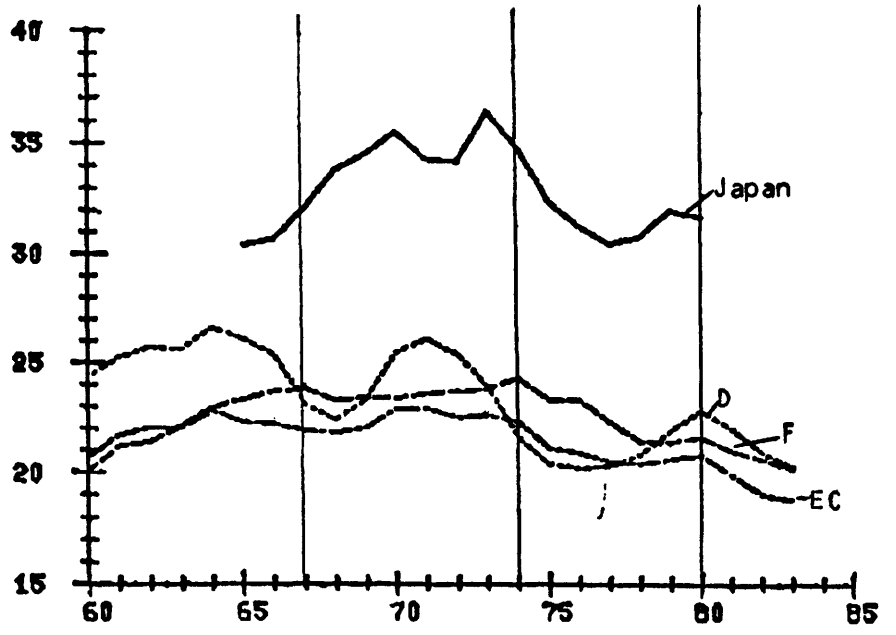
	1975			1981		
	Trade	Travel	Total	Trade	Travel	Total
Italy	-1,0	-3,0	-4,0	+3,7	-6,5	-3,8
Austria	+6,0	-3,7	+2,3	+9,7	-6,1	+3,6
Switzerland	+4,1	-1,7	+2,4	+8,1	-3,3	+4,8
Spain	+1,6	-1,4	+0,2	+1,6	-2,7	-1,9
France	+3,8	-1,0	+2,8	+1,8	-1,7	+10,1
Yugoslavia	+2,9	-0,9	+2,0	+2,5	-1,1	+1,4
Greece	+1,0	-0,1	+0,9	+1,7	-1,0	+0,7

(a) The countries selected account for more than 85 % of the German travel deficit and are listed in a descending order of the German travel account.

Source : Bundesbank

Gross fixed capital formation. Gross investment plays a strategic role in the growth process; in particular, it largely determines the speed and extent of structural change. The investment ratio has steadily declined in the Federal Republic of Germany and throughout the European Community (following Graph). While, on a European comparison, the Federal Republic has achieved an above-average ratio (except for the period 1974-77), the sharp fluctuations in the German investment-ratio curve contrast with the even course of the French curve. The shortfall compared with the Japanese investment ratios is immediately apparent.

Gross fixed capital formation as a proportion of GDP (in %)



Source : Eurostat, 1982-83; Commission staff

The decline in investment is viewed differently in economic policy discussion. Demand-oriented explanations link the marked decline in the propensity to invest to reduced sales expectations. The supply-oriented approach, which in the Federal Republic includes a majority of the SVR, attribute the investment gap predominantly to excessively high real wages and to an inflexible inter-sectoral and intra-sectoral wage structure. As to the structure of demand for capital goods, a shift towards cheaper and shorter-lasting capital goods should be noted. The proportion of labour saving investment incorporating a high degree of technical advance is increasing in importance. The significance of the accumulation of productive capital for potential growth was discussed in more detail above.

The relative position of the services sector. Special attention is often paid to the relatively strong growth of the services sector, which is sometimes even interpreted as evidence of a process of deindustrialisation. The following Table suggests that such a view is exaggerated.

Growth rates of gross value added at constant 1976 prices (% changes)

	61-65	66-70	71-74	75-80	61-70	71-80
Distributive trades and transport	5,2	4,5	2,8	3,6	4,9	3,3
Banking, finance and insurance	9,1	9,0	5,3	5,5	9,0	5,4
Other services	4,8	3,3	4,3	4,8	4,0	4,6
General government	4,9	4,0	4,6	2,3	4,4	3,2
Manufacturing industry	6,2	5,3	2,5	1,9	5,7	2,3

Share of GDP : at constant 1976 prices(a);at current prices(b) (as %)

		1960	1965	1970	1975	1980
Distributive trades and transport	(a)	14,9	15,1	15,4	15,3	16,1
	(b)	18,5	17,9	15,3	15,3	15,4
Banking, finance and insurance	(a)	2,4	3,0	3,7	4,3	4,8
	(b)	2,4	2,7	3,2	4,5	4,5
Other services	(a)	10,3	10,3	9,8	10,7	11,6
	(b)	7,2	8,2	8,7	10,4	12,1
General government	(a)	11,0	11,0	10,9	12,1	11,3
	(b)	7,1	8,1	9,2	11,9	11,6
Manufacturing industry	(a)	32,1	34,0	35,9	34,0	33,7
	(b)	40,3	40,3	38,4	34,5	33,1

Source : StBA

While the real growth rates of the services sector in the 1970s were higher in all branches than the growth rates of manufacturing industry and thus reduced manufacturing industry's share of GDP, the growth of the services sector in the 1970s generally slackened compared with the 1960s, with the exception of "other services" [7] . Secondly, a comparison of respective shares of GDP, both at constant and current prices, shows that the relative lagging behind of manufacturing industry is primarily a price phenomenon, reflecting different price movements between industrial products and services. However, there is some justification in using the word "deindustrialisation" when it comes to job creation. While the capacity of the services sector to absorb labour scarcely diminished in the 1970s compared with the 1960s, there were substantial job losses in the industrial sector in the 1970s as the following Table shows.

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7 This branch covers such diverse fields as hotels and catering, education and culture, publishing, medical and veterinary services, activities connected with banking, finance and insurance, laundries, personal grooming, photography studios, cleaning services, legal and tax advisory services, auditing, technical advice and planning, advertising, etc.

Changes in the structure of persons gainfully employed (average annual growth rates)

	61-65	66-70	71-74	75-80	61-70	71-80
Distributive trades	0,1	-0,1	1,1	-0,1	0,0	0,4
Other services	2,3	2,0	2,0	1,9	2,2	1,9
Manufacturing industry	1,0	-0,3	-1,3	-1,0	0,4	-1,1

Source : StBA

In any discussion of the services sector, non-market services should not be excluded. The relevant data show that the expansion of the general government sector took place primarily in the first half of the 1970s and that the general government contribution to GDP has since returned approximately to the long-term level of the 1960s. The marked increase in the general government share of value added from 10,9 % to 12,1 % in the period 1970-75 was due to the rise in the number of public service posts in that period (Table below).

Increase in public employees (average annual growth rates)

61-65	66-70	71-74	75-80	61-70	71-80
2,7	2,0	3,8	1,9	2,4	2,6

Source : StBA

The following main arguments are advanced to explain the relative expansion of market and non-market services in the 1970s :

- for a long time (up to 1972), the under-valuation of the German mark tended to favour industrial development and prevented an expansion of the services sector consistent with the level of maturity of the German economy. This thesis is in fact borne out by the 3,8 % gain in manufacturing industry's share in the 1960s (in real terms); 8
- highly developed economies reach a degree of maturity which is characterised by a high level of demand for services (three-sector hypothesis);
- the income elasticity of demand for services is greater than 1;
- in the growth process, the circularity of interrelationships is generally increasing. As a result, industrial firms rely increasingly on inputs from the services sector, as can be seen from input-output tables;
- cost pressures are causing firms to stop providing certain internal services themselves and to turn instead to specialised firms for such services. A particularly important feature of this development is the increase in financial leasing and factoring. The IfW (Kiel) has pointed out (IfW, 1980) that economic activity in all production sectors (including industrial production) comprises more and more so-called tertiary activities. A breakdown of employees by economic branch and occupational sector shows that the expansion of service occupations in the 1970s took place not only in the services sector but was also clearly evident in the other (industrial) sectors.

8 Some (Kalmbach, 1980) have taken a rather positive view of this development, stressing the associated high growth rates of GDP, others, principally the IfW, have argued that it gave an excessively labour-intensive bias which in the longer term delayed the introduction of capital-intensive, technologically advanced, production processes.

The role of general government. The general government's contribution to GDP referred to above consists essentially of capital consumption and the income derived by public employees from their paid employment. The broader concept of general government collective consumption appears in the national accounts broken down by purpose. A breakdown of general government consumption by function is shown in Table 31 for the period 1970-80. General government consumption includes, in addition to the general government contribution to GDP, the inputs purchased by general government, including military buildings and equipment (Table below).

General government contribution to GDP and collective consumption as a proportion of GDP at current prices %

	1960	1965	1970	1975	1980
Total general government consumption	13,4	15,2	15,8	20,5	20,1
of which : for civil purposes	10,3	11,2	12,8	17,4	17,4
Contribution to GDP	7,1	8,1	9,3	12,0	11,6

Source : StBA

Measured at current prices, general government consumption has increased appreciably as a proportion of GDP. This is due firstly to the fact that the goods required by general government increase in price much more quickly than average and that general government production is highly labour intensive and also calls for above-average skills. Secondly, it is frequently argued that towards the end of the 1960s there was a backlog of demand for government services. This can neither be proved nor refuted. It is, however, clear that the share of traditional government services such as administration and defence has declined in favour of sectors in which government supply also competes or might compete with private-sector supply (e.g. education and medical and other health services).

Overall, general government consumption in the decade from 1970 to 1980 grew at an average annual rate of 10,8 % : expenditure on defence increased by 7,6 %, total government expenditure on administration by 9,5 % and expenditure on public security and order by 10,4 %; on the other hand, expenditure on education increased by 12,0 %, on medical and other health services by 13,1 % and on recreational and cultural services by 13,1 %. Moreover,the average annual increase in social security services, which are a component of general government consumption, was also well above average at 11,9 %.

An even more comprehensive measure than general government consumption is total State activity, which covers not only the State's activities as a provider of services and a buyer of inputs and investment, but also its transfer payments and tax policy. Altogether, the State accounted for 52 % of gross national product in 1980, compared with 41 % in 1970 and only 34 1/2 % in 1960. The following Table and Graph show the trends in the main components.

State activity as a proportion of GDP %

1960	1970	1975	1980
34,5	40,9	52,2	51,6

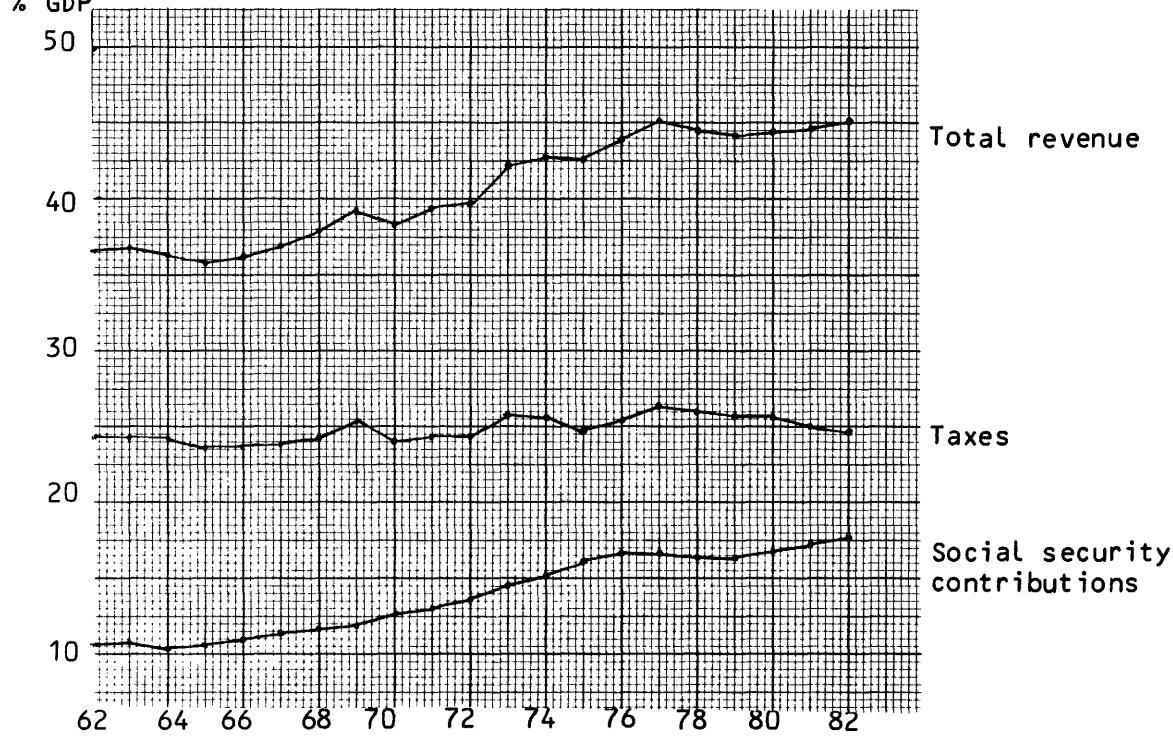
The relative weights of various components of total State activity

	1960	1970	1975	1980
Contribution to GDP (a)	20,7	22,6	22,9	22,5
Purchases (b)	31,9	31,7	29,0	29,3
Transfer payments (c)	45,3	43,3	45,5	44,5
Interest	2,1	2,4	2,6	3,7
Total	100,0	100,0	100,0	100,0

(a) Income from paid employment plus capital consumption.
(b) Inputs, gross investment less sales and self-manufactured fixed assets.
(c) Current and capital transfer payments.

Source : StBA; Commission Staff

State revenue as % of GDP



Source : StBA; Commission staff

The increase in the State share of GDP is due, besides the growth in general government consumption (provision of State services), to the extension of the social security system [9] particularly in the areas of pensions, sickness insurance and training provisions (Ifo, 1980). This is made abundantly clear when current government revenue is divided into taxes and social security contributions. While the overall taxation ratio has fluctuated within a relatively narrow band around 25 %, compulsory levies under the social security system have continuously increased. The social security system in the Federal Republic was established under favourable growth conditions. With growth rates having slackened since 1974, the spending on the social security system was constrained and indeed some marginal cuts were made in the second half of the 1970's. The need for a fundamental reorganisation of the system which takes account of the prospects for modest growth and of important demographic developments appears not to have been recognised until recently. The failure to make the necessary corrections in time has contributed considerably to the structural budget deficits referred to above (Chapter III.A).

Reasons for structural change

The factors responsible for structural change are many and various. Some of the main causes are listed below.

To begin with, some structural changes stemm from new patterns in demand. Private households and public authorities can trigger structural change through their expenditure decisions; at the same time, however, structural changes have repercussions on expenditure decisions. As the following Table shows, private consumption has increased slightly since 1973 as a proportion of GDP, although the long-term pattern is one of relative stability.

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9 The most important statutory measures were : the introduction of a flexible age limit for pension purposes (1972); the inclusion of nursery school children, school children and students in the statutory accident insurance arrangements (1971); the inclusion of farmers (1972) and students (1975) in the statutory sickness insurance arrangements; extension of training measures (1971); the Employment Promotion Act of 1969 which extended the tasks of the Federal Labour Office; the Sickness Insurance Amendment Act of 1970 and the recognition of preventive and early detection measures; increase in the child allowance and increased protection for mothers.

Private consumption as a proportion of GDP (as %)

	60-65	66-70	71-73	74-75	76-78	79-81
D	59,4	59,6	58,5	60,7	61,9	61,5 (a)
F	61,6	60,9	60,4	61,6	62,2	63,8
E9	62,4	61,4	60,3	61,3	60,0	62,1

(a) The estimates available for 1982 and 1983 point to a further fall.
Source : Eurostat

The structural shifts only become apparent, however, with an analysis of consumption expenditure by item (Table 32). The switch in private consumer expenditure to high-quality and durable consumer goods, in which saving or credit financing plays an important part, has made movements in demand more volatile and has accentuated the pro-cyclical effect of spending behaviour by private households. The income elasticity of demand for services is greater than 1, but it is not known how a decline in purchasing power would influence demand for imported services (in particular foreign holidays) in relation to demand for domestic services.

Some structural changes take place as a result of adjustments in the capital stock. Given the openness of the German economy, domestic producers must cope with continuous adjustments in the international cost and price structure; this applies both to export goods and import competing goods. Changes in relative factor prices and in production techniques cause part of the existing plant to become economically obsolete. The production apparatus has to be adapted and this is reflected in continuous changes in the level and composition of the country's capital stock. This process has greatly accelerated over the last decade. Indeed, the economic life of the capital stock has declined appreciably as shown in Chapter IV.A above. The faster the pace of change,the sooner capital equipment becomes obsolete and the more risky investment becomes, requiring a higher risk premium.

Other important factors causing structural adjustments are new production and management techniques and behavioral changes, including such different factors as the framework of State regulation in regard to industrial monopolies and market access arrangements; environmentalist opposition to certain forms of production has also increasingly delayed private and public investment projects. New preferences accorded to the trade-off between work and leisure time is also a significant causual factor.

The reaction of economic policy

The above discussion gives an idea of the main problems which the German economy must tackle if it is to continue to be successful in the adjustment process. The high level of dependence on foreign trade, and in particular the increasing dependence on exports of technologically advanced products, necessitates even greater efforts in the investment field, given the rapid pace of technological change. While Germany's R & D performance bears comparison with other Community countries, expenditure in this area fell slightly in the 1970s as a proportion of GDP. A 1980 report on investment plans shows that German business investment is concentrated primarily on technological innovation and the development of new products, on research and development and on energy conservation; however, the disappointing trend in overall investment since the early 1970s, which was discussed above, suggests that the qualitative and quantitative improvement of the capital stock, has not been achieved. This raises the question of how economic policy should react to the challenge of structural change.

The institutional arrangements and the parties involved in economic policy in the Federal Republic are guided by the principle that the market economy, together with effective price competition, ensures industrial efficiency. This generally means that firms have the priority task of carrying out the necessary structural changes, leaving it to the Government to pursue an economic policy which promotes the smooth functioning of the price mechanism by eliminating obstacles to structural change and by encouraging economic reorganisation through the response to market signals. In this way, government policy helps to adjust the social and economic framework to changing internal and external economic conditions. Accordingly, public undertakings and selective government measures are traditionally only of limited significance in the Federal Republic (Körner, 1981).

At the same time, the authorities do not believe that the efficiency and competitiveness of the German economy can be guaranteed by simply applying the traditional instruments of demand management. It emphasizes instead a medium-term growth policy which is based on the creation of the right supply conditions and in particular on a favourable investment climate, both for the private and the public sector. Investment incentives and the readiness to take on business risks can be reinforced through an appropriate tax policy and through adjustments to the social security system.

In concrete terms, structural policy in the Federal Republic has assumed the following forms (Donges, 1980) :

- strict controls on public expenditure and public borrowing with the aim of reinforcing confidence, limiting the tax burden and bringing down interest rates;
- influence over wage settlements with the aim of improving the financial position of firms and, at the same time, of providing incentives for employees and the self-employed through an appropriate tax policy;
- improvements in the framework conditions for job-creating investment through forward-looking and environmentally sound infrastructure projects (particularly through adequate levels of depreciation allowances, investment grants, incentives for energy conservation, appropriate levels of corporation tax and subsidies);
- encouragement for research and development;
- the reduction or elimination of subsidies which hinder the adjustment of production structures;
- measures to improve the balance between supply and demand on the labour market through the promotion of vocational training and labour force mobility;
- a housing policy which covers both housebuilding and the size, composition and flexibility of the housing market.

Although the structural adjustments in the Federal Republic of Germany over the last decade have not been satisfactory, they were often more rapid and far-reaching than in other industrialised countries (DIW 6/83). Detailed investigations into the changes in industrial structures in the six years following the first oil shock show that the Federal Republic has adjusted faster than other Community countries (European Economy, Special issue, 1979). This finding was based largely on the data available up to 1978, but subsequent economic developments have been more favourable in many respects than in other countries. Investment activity has generally held up better, price and cost trends have been considerably more favourable and the balance of payments deficit was quickly eradicated. Of the major industrialised countries, only Japan had made greater progress in conserving energy. In the 1981-82 period, however, developments were less satisfactory. In particular fixed capital formation lagged behind. In view of the poor outlook for economic growth in the world economy, in the next few years, the question arises whether a more active policy to promote investment and structural adjustment is not called for.

C. International trade position and competitiveness

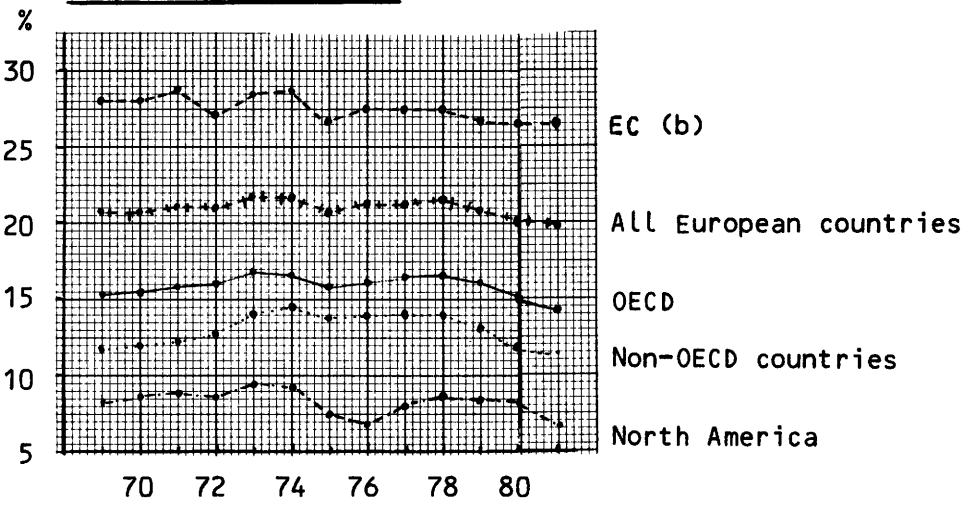
The international environment has shown marked changes throughout the 1970's, with considerable fluctuations in exchange rates, large increases in oil prices and high and variable inflation rates as the main features of the generally less stable conditions for international trade. These disturbances coupled with an unprecedentedly large deficit on the current account of the balance of payments in the Federal Republic following the second oil crisis and the weakness of the DM/USD rate has stimulated interest in the basic international trade position and the competitiveness of German industry.

Exports

Over the last two decades the share of German exports in world trade of manufactures (measured in USD) has fluctuated around a gently rising trend within a relatively narrow band of 17-19 % but fell to 16,5 % in 1981 (Graph 12). An important deviation from the trend value occurred in 1973-74 when the large upward adjustment of the DM boosted the recorded value of German exports measured in USD terms, when German exporters, given the buoyancy in world demand combined with the effects of a stabilisation policy at home, were able to increase sharply their volume of sales. The weak trend in the German market share emerging in 1980 and 1981 has at times been interpreted as marking the end of a long period of Germany's strong industrial position in world markets (Maurat, 1981). It will be argued below, however, that this apparent fall was due to the extremely weak position of the DM against the USD, which in turn reflected with the large current account deficit, and that the recent gains in competitiveness will in due course be reflected in substantial gains in market shares.

An alternative assessment of German industry's export performance can be made from a comparison with that of its major international competitors, operating in the same markets. An examination of Germany's share in total OECD exports to particular markets, such as North America, EC, all European countries, OECD and the non-OECD countries, shows that the German market shares at this disaggregated level have remained relatively stable (Graph below). It should be noted that Germany's share in OPEC

Proportion of German exports in total OECD exports to particular markets (a)



(a) Market economies, i.e. 83,6 % of world trade in 1975.
(b) Proportion of German exports in total intra EC exports, all expressed in Ecu's.

Source : OECD; Eurostat

markets was also broadly stable if short-term variations are neglected : in 1981, 13,1 % of total OECD exports to OPEC were supplied by Germany, the corresponding pre oil-crisis figure (1972-73) was 13,3 % (OECD No. 31).

In addition to the stability in the geographical breakdown of exports, long term trends in the commodity structure of German exports have not shown marked changes (DIW, 1981).

These relatively stable shares in world trade contrast strongly with the experience of other major countries such as the USA, UK, and Japan and are at first glance surprising in view of the sharp movements that have occurred in nominal and real exchange rates for the DM and hence in price competitiveness of German industry. Since the end of the era of fixed exchange rates in 1972, both exchange rates and price and cost inflation differentials among countries have diverged sharply. Developments in the FR of Germany have been characterised by consistently low relative inflation rates and by a rising,and at times strongly rising exchange rate. Graph 13 shows movements in the DM real exchange rate [10] which demonstrates the extent to which the revaluations in the

10 For more details on the methodology behind these calculations and the trends against other EMS currencies, see European Economy No. 10, Section 5.3.

nominal level of the DM have been offset by movements in domestic cost and price levels relative to the changes in Germany's principal competitors (18 main industrial countries, the other EMS countries and the USA).

Graph 13 shows that German industry was in a very strong competitive position in terms of price until the late 1960's. This position began to deteriorate from 1969, firstly as a result of the wage explosion between 1969 and 1972 which stemmed from the unions' much more agressive pay bargaining stance and then, secondly, in 1972 and 1973,as a result of the large revaluation of the DM subsequent to the advent of floating exchange rates.

The price elasticity for German exports, in spite of its high technology content, is sufficiently high to expect a "normal" response of export volumes to changes in relative prices. The relevant elasticity is estimated at -1,09 (Naggl, 1981). These changes in price competitiveness therefore clearly affected German export performance. Table 33 provides data on exports since 1960 for the developed market economies (mainly OECD countries). German export growth in real terms was more buoyant than the average for the developed market economies during the second half of the 1960's (column 7) when the competitive position was very favourable. Conversely,this relatively high rate of growth could not be maintained in the 1970's and indeed, once the special factors of 1973/74 (Chapter III.C) worked through,Germany's relative export performance deteriorated markedly compared to the situation in the sixties and early seventies. In conclusion, the blunting of the price-competitive edge during the period 1970-1973 led, after a fairly long time lag,to a fall in the relative volume penetration in world markets, while pricing policy and other factors have enabled Germany to maintain a broadly constant market share in value terms. This is consistent with the results of econometric research which has found time lags between changes in relative prices and changes in trade flows of up to four or five years (Junz and Rhomberg, 1973).

The marked improvement in relative unit labour costs, expressed in a common currency, which occurred in 1980-81, has brought the level of price competitiveness back to that of 1970, i.e. before the DM started to float upward. This, combined with the

capacity of German exports to adjust their product mix and to take account of structural changes in the pattern of world demand (Ifo, 1/1980), suggests that German industry is well placed to take advantage of any recovery in world trade.

Table 34 illustrates that the product structure of German exports is heavily specialised in investment goods which embody high technology and human capital. This does not include however certain "young technology" products such as computer steered machine tools, where the domestic industry is relatively weak. Export quotas (exports as a share of sales) of German industry have continued to rise over the last decade, to 30 % for manufacturing industry as a whole and to about 40 % for the investment goods sector (within which the mechanical engineering sector approaches 50 %). At the same time however, import quotas (imports as a share of domestic sales minus net exports) have also risen, to 24 % for both manufacturing industry as a whole and for investment goods. These calculations point to the strength of the overall competitive position in Germany and it can be argued that this measure of "revealed comparative advantage" provides a more comprehensive picture of competitiveness than do growth rates of exports only (IfW, 1979).

A recent Commission staff paper, prepared at the request of the European Parliament's Committee on Economic and Monetary Affairs, made a detailed analysis of the industrial competitiveness of the Community, in particular in relation to the USA and Japan (EC, Doc. III/387/82); the paper draws particular attention to a distinct weakening in the Community position. In many respects, however, the relative position of the FR of Germany within the Community appears to be strong. A recent unpublished Commission staff paper on technological change and competitiveness (Cardiff, 1982) identified the importance of science, technology and advanced marketing techniques for future trade performance. According to detailed statistical analyses of the trade patterns in "high technology products", which examines both the level of exports and the size of the trade balance in such products, the German position in 1980 was much better than that of other major industrial countries including the USA. Only Japan, which recorded a similar level of exports but much lower imports, had a larger surplus on trade in these high technology products (Table 35).

In a recent statement, the Federal Government also takes the view that there is no reason for concern about Germany's position in "high-technology exports" and that it would be wrong, as implied in a recent Parliamentary Question, to consider that German competitiveness in this matter is weakening (BMWi, 1982). It is relevant in this context to note that total expenditure on research and development in constant price terms has been much more buoyant in the Federal Republic over the last decade than in other major industrial countries, with the exception of Japan (during 1970-79 at an annual rate of growth of 2,9 %, compared to 0,1 % in France, -0,7 % in the UK, -1,4 % in Italy, 0,7 % in the USA, 6,8 % in Japan (Bundestag Drucksache 9/1133, 1981). A recent assessment made by the Confederation of German Industry of the country's performance in high technology products, measured on the basis of a combination of four different criteria (exports, patents and licences, R & D and research workers) also concludes that the comparative position in this area is satisfactory, although the rapid progress of Japan should be noted (IW 3/83). The Ifo institute, Munich, has taken an even clearer position on Germany's competitiveness for high technology products : overall, Germany takes a second place, after the USA, but before Japan (see Table below) and there is no indication that its relative position is in danger in the medium term; in the area of the application of microelectronics, however, Germany clearly lies behind Japan (Ifo, 17-18/82).

Share (%) of selected countries in world exports of products with a high technology content

	total			most advanced products		
	1970	1977	1980	1970	1977	1980
D	20,6	20,3	18,1	8,3	10,2	9,7
USA	21,9	16,6	18,2	48,1	33,8	33,3
JAP	9,0	15,6	15,6	4,9	7,7	4,7
NIC (a)	0,6	2,0	2,5	0,9	6,1	4,7

(a) Hongkong, Malaysia, Philippines, Singapore, South Korea, Taiwan.
Source : Ifo, 17-18/82

Imports

Concern about Germany's international trade position has repeatedly been expressed in recent years as a result of the strong upward trend in import penetration. This trend, which has continued throughout the last two decades, accelerated after 1972,

when the sharp appreciation of the DM would have been expected anyway to reduce the price competitiveness of domestic relative to foreign suppliers. The share of imports in total final demand in constant prices rose from 17 % in 1970 to 21 % in 1980 with the share of imports in consumer goods (electronic entertainment products in particular and more generally in investment goods growing considerably faster than the average (Ifo,10/1980).

These trends cannot be interpreted as reflecting a dramatic loss of overall price competitiveness by domestic producers (DIW, 20/1981),they are rather of a structural/technical nature related to a growing need to use imported raw materials and semi-manufactured imports in the production process (DIW, 1981), and are a normal consequence of the increasing international division of labour. Nonetheless, such growing import and export trade is not without problems as it requires a permanent need for adjustments in industrial activity and investment, implying simultaneous losses and gains of jobs within industry. These adjustments are relatively smooth in the case of "intra-industry" trade intensifying between industrial countries, where adjustments occur normally within rather than between sectors and companies. However, increasing trade with less developed countries (LDC's) lead to more difficult structural adjustments as the higher level of imports from LDC's is not offset by higher exports to LDC's by the same industrial branch.

Indeed, on a more disaggregated level, some trends are disquieting. The import quota for textiles and clothing for example rose from 24 % and 14 % respectively in 1970 to over 40 % each in 1981. Detailed analyses (Schatz and Wolter, 1980 as reported by Körner, 1981) on import penetration and their employment effects in selected branches of German industry over a longer period, found that the sectors which most suffered from foreign competition were consistently those which operate with conventional technology and employ low-skilled labour. In assessing such import trends, account should not only be taken of the loss in domestic employment but also of the advantages accruing to consumers resulting from downward pressures on prices. It should also be remembered that an increasing share of these imports constitute the re-allocation abroad of domestic production activity.

German industry, like that in other countries, has increasingly felt competition from Japan, both on foreign and on the domestic market. Japan has achieved a leading position in high technology trade, especially for consumer goods but more recently also in capital goods and this trend is likely to continue in the foreseeable future. Factors such as the ability to apply systematically technological and management know-how and to adopt an appropriate balance between innovation and marketability seems to give the Japanese producer and exporter a comparative advantage in many international markets. Whilst admitting the spectacular development of Japanese exports, one should be aware of the limited role they play in supplying the German market : in 1981 Japanese products accounted for hardly more than 1/2 % of total demand, compared with 1/4 % in 1971. As a share of total German imports, Japanese products accounted for 3 % in 1981, compared with 2 % in 1971. Nonetheless, competition from Japan is acutely felt since its exports are heavily concentrated on relatively few product groups, such as cars, cameras and electronic equipment. Judging from data on the level and structure of expenditure on research and development and on the registration of patents and licences, both of which concentrate on products which have shown the highest rate of expansion in international trade, Japan's position, at present exchange rates, should remain strong in these areas (Ifo, 35-36/1980).

Finally, it is often argued that German industry is faced with ever increasing competition, both at home and abroad, from newly industrialised countries(NIC). In order to test this proposition, the share of NIC in EC imports has been calculated for eleven selected product groups over an extended period. Table 36 shows that the market share of NIC has indeed risen dramatically in the 1970's but that this trend is by no means equally marked nor does it follow the same pattern for all the product groups. For a range of products, where NIC made impressive progress up to the mid-1970's (such as optical instruments and cameras, jewelry and electromechanical products), the trend was subsequently reversed and market shares were lost. It is also frequently claimed that German manufacturers, in particular of textile and clothing, increasingly resort, in view of the high labour costs, to the

practice of contracting out for the processing/finishing of their products to low wage countries. It should be noted, however, that the share of such supply to the German domestic market in total imports of the relevant products has been declining consistently since 1965. In other areas, however, (such as watches, radio/TV, toys and sports, shipbuilding), NIC maintained or increased their position in EC markets.

In the medium and longer term, the industrial take-off in such countries should have positive effects on growth and trade throughout the world. Industrialisation brings about intrasectoral specialisation and diversified trading patterns with consequential rising import elasticities.

D. Labour market trends and problems

This section discusses the main factors affecting the supply of and demand for labour together with the main structural characteristics of employment and unemployment at the present time. While activity rates will show divergent movements according to age group, sex and marital status, the trend in the overall rate, which had fallen in the 1970's, is likely to remain stable in the 1980's. This means that growth in the labour force will largely be the result of demographic changes including movements in the number of foreign workers.The discussion concludes that unemployment is likely to increase for some years; even an annual average rate of economic growth of 3 % in the rest of the present decade would do no more than preserve the current level of employment. After 1988, however, the size of the labour force should begin to decline and this should be a major factor in reducing the imbalances in the labour market from then on.

Overall demographic trends

Over the period to 1990, demographic developments, which are already in operation, will add to the complexities of labour market management. Since 1972,the native population of the Federal Republic has been declining. This decline represents a secular trend resulting from a number of factors, principally a fall in birth rates. It is unlikely that birth rates will again rise to, and remain at, the level necessary to maintain the present population stock.

The decline in population will only begin to be reflected in a falling labour force around 1987 (Graph 14). Indeed, in the period up to 1987, the labour force will actually increase considerably as a result of changes in the age structure of the population which are summarised in the following table.

German population according to age groups up to 1990

Year	German population 000s	Age groups (% share)					
		under 15	15-20	20-65 (60) (a)	20-45	45-65 (60) (a)	65 (60) (b)
1965	56 984	22,8	6,5	54,9			15,7
1975	57 937	21,5	7,3	52,4	33,3	19,1	18,8
1980	56 829	18,0	8,5	54,9	34,7	20,2	18,6
1985	55 750	15,1	8,2	58,3	35,9	22,4	18,3
1990	54 796	15,5	5,5	60,8	37,2	23,6	18,3

(a) Men up to 65, women up to 60.
(b) Men over 65, women over 60.
Source : Estimate up to 1990; IAB, 1978

Three important factors should be noted :

(i) the proportion of the population at or above retirement age remains stable in the 1980's;

(ii) the proportion between 15 and 20 years of age is at a peak between 1980 and 1985 but declines sharply thereafter, resulting in a strong growth of labour market entrants in those years thereby adding to the demand for employment and for higher and vocational education;

(iii) the proportion of the population over 45 years of age will increase steadily over the 1980/90 period which may result in reduced labour mobility.

In the context of these developments, the movement of foreign workers plays an important role but assessments of future demographic changes in the foreign worker population remain very tentative. While in 1976 it appeared that the number of foreign workers in the 1980s might stabilise at around 3,4 million or about 6 % of the total population, by 1981 it was at 4,6 million (DIW 46/76).

Activity rates

Future trends in the size of the labour force are estimated by applying projected activity rates to the population in each age bracket. Table 37 compares movements in activity rates in the 1970's in the Federal Republic, EC 9 and the USA. It can be seen that activity rates for both sexes in the Federal Republic are relatively high in the younger age brackets (14-24 years) compared to other EC countries but low at the upper end of the age range (60 years and over).

During the 1970's the activity rate of women between the ages of 20 and 60 continued to increase. This was mainly due to the increased participation of married women in the labour force while the tendency for women to take up employment after school, and to leave it again when married, declined. Factors such as better institutional arrangements for working women, a falling birth rate, greater availability of part-time work and increased real wages were important. While this development added to the total labour supply, other changes in activity rates have tended to offset this effect, such as :

- the continued tendency for older workers, particularly male, to retire early;
- the sharp decline in the activity rate of both men and women in the 15-20 year age bracket, reflecting the general trend towards longer training periods and the expansion of further education;

- a general but gradual decline in male activity rates reflecting adult education and training, discouraged worker effects, better sickness and early retirement benefits.

The definition and measurement of activity rates is not easy. For example the Eurostat Labour Force Sample Survey [11] suggests that there is a reservoir of people in addition to the employed and unemployed who would be willing to work given appropriate economic conditions. Such a reservoir is formally recognised in the Federal Republic and known as the "Stille Reserve". The precise quantification of this reservoir of unregistered unemployment is a matter of some dispute but, however measured, its size has increased markedly, probably to over half a million persons, in the past ten years (Graph 15). Changing economic conditions can be expected to influence the "Stille Reserve" and therefore activity rates in the future. The DIW (DIW 33/81) has attempted to show that for each age group, activity rates tend to vary inversely with changes in the unemployment rate. Nonetheless, the projection of activity rates remains an extremely hazardous exercise. Assuming a modest and reasonably stable rate of economic growth in the coming years and no dramatic shift in the numbers involved in work-sharing schemes, then the prospects are that for the central age groups, the overall activity rates will remain more or less constant for both men and women until 1990 but may fall thereafter. Activity rates for older workers and for those under 25 years of age will, however, continue to fall.

Total labour supply and employment

The estimate of future labour supply varies according to the assumptions made about population changes, activity rates and the factors behind them and on changes in the size of the foreign worker community. Since 1977 the size of the labour force has shown a marked upward trend and at the beginning of the present decade the potential labour force stood at about 27 million. Assuming the activity rate movements in the 1980's described above, and assuming a rate of net immigration of foreign workers of about 30 000 per year over the period, the potential labour force should have risen by about 1,5 million in the

11 This uses the following definition : "Persons with a main occupation, unemployed persons and non-active persons with an occasional occupation seeking paid employment, by reference to the population of same age and sex".

1980s. Bearing in mind the respective weightings of young people and those above 45 years of age in the population, this implies that behavioral trends will considerably offset the effect of the demographic changes. Table 38 shows a DIW estimate of how the two factors interact.

Present trends in the potential labour force, together with falls in employment bring about large increases in registered unemployment. Thus, in the two year period 1981-82 employment fell by almost 700 000 and unemployment rose by nearly 950 000.

A number of institutions have made labour force projections and the results show how difficult precise forecasts are to make (Federal Employment Institute, 1980). Even in the short term, the outlook is uncertain due to the significant impact of small changes in activity rates and to variations in the numbers of foreign workers. The Federal Labour Office, in a recent review (IAB, 17.12.81) estimated that the increase in the potential labour force in the five years to 1985 would be close to 1 million . In their view the potential labour force can be expected to peak(at somewhat over 28 million) in 1988 and to decline thereafter.

These forecasts assume that the number of foreign workers remains stable at the 1981 level of 2 1/2 million, close to 10 % of the total labour force. This implies a small net emigration of foreigners in the population. The extent to which estimates of the labour force are sensitive to assumptions concerning foreign workers is shown in Graph 16 where an annual net immigration rate of around 55 000 after 1980 could add another half million to the labour force by 1990.

The above mentioned forecasts were prepared before last year's revision of the German national accounts back to 1960. This revision indicated that there were considerably more people in employment than had been estimated previously - some 500 000 more in each of the past three years. This has implications for calculations of the size of the effective labour force and the "Stille Reserve", which itself is a function of general labour market conditions. The revised figures need to be handled with care since a high degree of estimation has been used in their preparation,there having been no full population census since 1970. At the time of writing, the Federal Labour Office is still in course of preparing revised figures for the

"Stille Reserve" and potential labour force. It is understood however, that the broad order of magnitude of previous estimates of the "Stille Reserve" may still be valid while the addition to the effective labour force up to 1985 and beyond is expected to be of the same order as previously forecast.

These assumptions are made in Table 39 where the revised data is taken into account as far as possible to show movements in the labour force between 1960 and 1990. Between 1960 and 1973, total employment (including self-employed) showed a comparatively modest movement (+ 0,7 million) despite a 2,2 million increase in the employment of foreign workers; unemployment was low, averaging 1 % of the labour force. Between 1973 and 1977, the effective labour force declined sharply (-1,4 million) with substantial falls in the number of foreign workers in employment (-0,6 million) and self-employed (-0,5 million). Nevertheless, unemployment rose to 1 million over the period. Between 1977 and 1982 the effective labour force increased by 0,9 million while unemployment increased by almost the same amount.

By any standard, providing work for those already unemployed plus an additional 200 000 labour market entrants per year to 1987 will be a daunting task in the context of the economic conditions likely to prevail for the greater part of the next decade. The changes in the distribution of employment by sector have already been referred to and the significant shift into services and away from production industries in recent years has been noted in Chapter II.A. Employment growth in services, a sector which accounts for over half of total employment, suffered a check in 1981 and it is likely that it will grow, if at all, at a much slower overall rate than in the past. Two factors which would tend to restrict growth of employment in services are the budget constraint, leaving the Federal and local governments little if any room to expand public employment,[12] and, secondly, the likely trend towards improving productivity in the services sector through increasing automation and high technology equipment. Furthermore, the growth of employment in services was associated with an increasing availability of part-time work which was a major factor attracting women, particularly married women, into the labour force. At present

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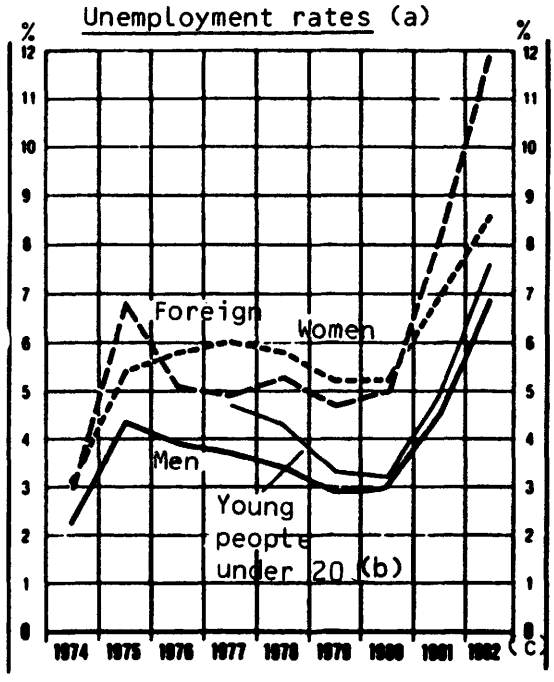
12 Public sector employment increased between 1970-1980 at an annual rate of 2 % and now accounts for about 18 % of total employment.

women account for about 80 % of part-time jobs. Thus, growth in employment in this sector, even if it were to be noticeable, might have the effect of drawing people into employment from the Stille Reserve rather than off the unemployment register.

Unemployment : trends and structures

Table 5 shows movements in the unemployment rate in the Federal Republic, France and EC 9 in the 1958-83 period. While the Federal Republic's record compares favourably with the situation in other countries, the abrupt upward movement in the unemployment trend in 1981 and thereafter indicates the advent of a period of special difficulty. Table 39 shows the growth of unemployment in absolute numbers. The large increase recorded in 1981 reflects both the beginning of the effects of the demographic factors described above and a retarded adjustment to the economic slowdown. In 1980, enterprises, perhaps not expecting a protracted turn-down in the economy, had tended to avoid lay-offs and short-time work.

The following Graph sets out some of the structural features of unemployment. Graph 17, which shows the trend in unemployment and vacancies by employment sector indicates how seriously the labour market situation has deteriorated. The unemployment/vacancy



(a) share of unemployed in the dependent labour force on basis of mikro-census; annual average.
(b) annual average beginning 1977.
(c) estimates.
Source : SVR, 1982/83

ratio from nearly 3 in 1980 to 17,5 in 1982 whereas previously, the labour market position of women had been somewhat worse than that of men, 1981 saw a sharp upward movement in the rate of unemployment among men. In May 1981 the comparative rates were 6,3 and 3,8. In February 1983 they were 10,5 and 10,3. This reflected the fact that men were more numerous in the occupations worst hit by the last cyclical downturn, particularly the building industry.

The unemployment rate for young people under 20 years of age, which is extremely low in the Federal Republic compared to other countries[13] has risen distinctly in the last few years. Young people leaving school and those leaving institutions of higher education with general non-technical qualifications face particular difficulty in finding employment. This aspect of the problem is likely to increase in the medium term and will put strain on existing vocational training services.

Since a number of years, the unemployment rate among the foreign workers is relatively high. In May 1981 the rate stood at 7,0 compared with the overall rate of 4,8 and in February 1983 the respective figures were 15,4 and 10,4. This reflects not only the fact that foreign workers are heavily employed in sectors, such as the building industry, where employment has fallen sharply, but also the fact that children of guest workers are now joining the labour force in greater numbers.

Although unemployment increased generally throughout the Federal Republic,certain regions fared worse than others. The Northern Länder, broadly speaking, recorded the largest unemployment rates and absolute numbers unemployed. The difficulties of the steel industry were reflected in the steep rise in unemployment in the cities of the Ruhr area and in the Saarland.

Labour Market Policy

Large imbalances in the labour market,from labour shortage during the 1960's to the present high unemployment, have met with different responses from the authorities. The main policy issues can be grouped under five different headings :

13 The Eurostat Labour Force Sample Survey, which gives the best comparative data across countries, reported unemployment rates in 1981 for 14-24 years old of 21,5 % for Italy, 17,5 % for France and only 4,7 % for the Federal Republic of Germany.

- Foreign workers
- Training
- Economic growth
- Work-sharing and changes in working time
- Investment.

The large inflow of foreign workers up to 1973 and the subsequent outflow have provided a balancing mechanism for the German labour market. These flows ensured the smooth operation of the labour market in terms of total demand for and supply of labour and, since guest workers tend to be highly mobile, provided the economy with a particularly strong sectoral and regional adjustment mechanism. Moreover they have tended to take up employment in sectors where employment for Germans is falling, reflecting the difference in vocational training levels (HWWA, 1980). The number of foreign workers in the Federal Republic reached a peak of 2 1/2 million in 1973 but then fell quickly as a result of both the recession and the introduction of a ban on the recruitment of foreign labour. The reduction of the number of foreign workers (to 1,9 million in 1979, when the number started to recover again) has only slightly affected the number of registered unemployed foreign workers as there is a tendency to return home if threatened with unemployment.

Another important policy element in German labour market management is vocational training. The Federal Republic has developed an impressive and comprehensive system of formal training and examinations, leading to a final qualification in addition to the actual vocational training. As a result, 60 % of the workforce possesses intermediate qualifications, compared with only 30 % in the UK (Prais, 1981). As well as providing appropriate skills, the system also has beneficial effects on the organisation of manpower in firms (EC Social Policy Series No. 42, 1981).

When the structural problems in the labour market emerged in the late 1970's a wide ranging system of training developed with the emphasis on improving the competitive position of the disadvantaged unemployed in the labour market and meeting the specific needs of certain regions. Thus, grants and subsidies, up to 80 % of the wage bill, were paid to employers to encourage them to take on unqualified workers. Given the rising numbers of unemployed and the need to contain budgetary expenditure, however, training policies may have to become more selective.

In the future, the requirements of the labour market policy, are likely to be determined by the overall rate of economic growth. In general terms the Institute for Research on Labour Market and Vocational Training in the Federal Labour Office (IAB) has estimated that an annual average rate of GDP growth of about 5 % would be needed from 1982 to 1990 in order to keep the supply of jobs stable. An annual average rate of growth of between 2 % and 2,5 % would, on the other hand, be likely to involve a further net job loss in excess of 500 000 (Graph 16). This assessment appears, however, to be on the pessimistic side with regard to the future trends in unemployment and assumes large productivity gains difficult to reconcile with the much reduced growth rates of productive potential. It also assumes no behavioral changes on the supply side of the labour market.

It is by no means clear whether generalised measures by Government or by industry to introduce work sharing and reductions in working time could be used effectively to contain the numbers of involuntary unemployed (European Economy No. 5). Indeed,such schemes offer no general panacea; much depends on whether the reduction in working hours is met by a corresponding reduction in earnings (EC Com(82)809). Moreover, there is the need for flexibility to take account of any future changes in labour supply trends. The need for reversibility in the schemes adopted is of particular importance in the Federal Republic, which is the only EC country where the labour force is expected to decline in the 1990's (Kervyn, 1978). To judge from recent surveys and modelling work, there appears to be more scope for increasing part-time working as this form of work sharing is flexible, and able to meet the changing patterns of demand quickly while it is generally liked by part-time workers themselves. In addition, part time working normally does not imply a rise in unit costs because of higher productivity of the part time worker and the flexibility to adapt the use of labour to the need of the firm (SVR 1981/82). The Eurostat Labour Force Sample Surveys estimated that part-time working, expressed as a percentage of total employment has risen between 1973 and 1981 from 7,7 % (male) and 20,0 % (female) to 10,7 % and 25,9 %. Further increases in part-time work need not be confined to the services industry (where some other countries like the UK have recorded much higher figures than those for Germany). Indeed, part-time working in industry and even in construction could well provide an additional 380 000 and 124 000 jobs respectively (Ifo,22/78).

In no way, however, can work sharing be a substitute for the investment and adjustment that is necessary to modernise the capital stock to take account of the new patterns in demand and costs. In this regard, the Council of Economic Advisers has recently (SVR, 1981/82) emphasised the role of private sector investment. It suggests that, if the degree of capital intensity increases at the same average rate experienced between 1976 and 1980, an annual rate of growth of investment of between 5 and 6 % would be needed to provide adequate jobs; even such a growth rate in investment would imply a job deficit of 700 000/800 000 in 1985 which could only be removed by an annual investment rate of 12 %. If the degree of capital intensity were to increase at a slower pace, however, the required investment growth would be more modest.

Labour relations

Institutional factors in the Federal Republic have generally contributed to promoting good labour relations. There are legally required structures and procedures in enterprises with more than 25 employees for associating workers with management decisions and for consulting them in this regard through work councils. More specific arrangements exist in the steel sector and this must have contributed substantially to obtaining the consensus needed to undertake necessary rationalisation measures in that sector.

The organisation of the unions also contributed to good labour relations. The main characteristic of their institutional structure is the existence of a few large industrial unions only rather than a multiplicity of smaller craft unions. Furthermore, the effective dominance of central negotiators in wages talks with the employers has also been a positive factor for industrial peace.

E. Energy constraints

Overview

The German economy is now well on the way to diversifying its sources of energy with particular emphasis on the use of coal. The growth of demand for energy and oil fuel in particular has been curbed, but to maintain these gains in energy saving, should there be a period of continued improvement in economic conditions, will require sustained efforts. In addition, the German economy is likely to remain very dependent on foreign sources of energy, reflecting growing imports of coal and natural gas. Unlike France, the potential of nuclear power is being developed rather cautiously and unlike the UK there are no native oil resources and no new discoveries of relatively low-cost coal. In contrast to the UK and the Netherlands, the Federal Republic possesses only insignificant reserves of natural gas.

General survey of demand for energy

Between 1960 and 1973 the total German demand for energy almost doubled from 148 million tonnes of oil equivalent to 265 million tonnes. The bulk of this growth was accounted for by a massive jump in oil consumption over the period, from 31 million tonnes to 146 million tonnes. This development was due to a rising population, higher living standards consequent on the country's steady economic growth and a switch in consumer preference towards oil. These trends occurred to a greater or lesser extent in the other major industrialised countries. Indeed as Table 40 indicates, the Federal Republic, although becoming less efficient in the use of primary energy in the years up to 1973, managed to compare favourably in this respect with certain other major industrialised countries.

The oil shocks brought about a substantial change in trends. After 1973 the economy began to become less energy intensive. This change accelerated after 1979. Two aspects are important in this regard. Firstly after 1973, as Table 40 shows, not only did the level of demand for energy rise more slowly than before but total GDP grew more rapidly than domestic demand for energy. After 1979 the "energy intensity" (primary energy consumption per unit of GDP) of the German economy appears to have continued to fall sharply.

Secondly, as Table 41 shows, the pattern of consumption changed :

- The share of crude oil in primary energy demand fell from 55 % in 1973 to 44 % in 1981.
- The share of solid fuel (hard coal and brown coal) at about 33 % in 1981 has been roughly stable since 1973, in contrast with a marked decline in the period up to that date.
- The share of natural gas continued to rise gradually.
- Nuclear power was contributing only 1 % of overall primary energy consumption in 1973 but had increased its share to a modest 5,4 % by 1981.

Demand for imported fuels : oil bill and balance of payments

The following Table shows that the FR of Germany is highly dependent on imported energy.

Degree of energy self sufficiency

	1960	1973	1979	1981
Self-sufficiency in energy(a)	89,0	46,0	43,0	50,0
Oil imports as % of oil demand	94,0	99,0	102,0	96,0

(a) total domestic primary energy production as % of primary energy consumption.

Source : IEA; Commission staff

Net imports of energy accounted in 1981 for 50 % of domestic consumption, compared with 54 % in 1973. The bulk of these imports consists of crude oil and petroleum products, but there has also been a significant increase in recent years in natural gas imports. Table 42 shows how Germany compares with other major industrial countries over the period 1960-1990.

The increase in the oil bill since 1970 is set out in Graph 18. Imports of total oil products reached DM 59 billion in 1980 (4 1/2 % of GNP), compared with DM 30 billion (2 1/2 % of GNP) in 1978. The increase in the oil bill between 1978 and 1980, when expressed as a proportion of GNP, is equivalent to the increase that occurred between 1972 and 1974 (namely around 2 % of GDP), but the recent rise was substantially larger in absolute terms : the total oil bill rose by DM 29 billion between 1978 and 1980 but by only DM 20 billion between 1972 and 1974. As volume movements in both 2-year periods have been marginal, the higher bill reflects almost entirely oil price movements. Over the 8 years from 1973 to 1980, world market prices for crude oil went up by a factor of 12 (from

under USD 3 in early 1973 to USD 32 per barrel in mid-1980), but as a result of the appreciation of the DM against the dollar, Germany's crude oil import price, measured in DM, increased only by a factor of six.

A substantial shift, however, occurred in the structure of German oil imports in 1979. As the price rise of petroleum products (heating oil, petrol, a variety of light products) in 1979 (78 %) was over twice as great as that of crude oil (32 %), Germany adjusted considerably its oil import structure by increasing crude oil imports (for processing in domestic refineries) and by cutting imports of petroleum products. Also, the regional structure of crude oil imports has changed strikingly, with the UK, Nigeria and Algeria accounting for rising shares, thus contributing to a welcome diversification of Germany's oil supplies, implying a shift away from the "low import absorbers".

Foreign trade and current account movements vis-à-vis the OPEC countries since 1972 are presented in Graph 19. The striking feature is the speed and the size of the German export boom to OPEC, following the first oil crisis : although the trade balance and the current account with OPEC deteriorated in 1973, there was a marked improvement thereafter and even substantial surpluses were recorded in 1977 and 1978 (DM 4 1/2 and DM 8 billion respectively). Although, in sharp contrast, German export performance to OPEC in 1979-1980 was rather disappointing (exports fell 20 % in 1979, mainly because of a DM 4 1/2 billion drop in demand from Iran but also because many densely populated oil producing countries reduced their investment plans, for which Germany has been a particularly important supplier in recent years), exports surged up again in 1981 by over 50 % in value and continued to be strong during the first half of 1982. Exports to Indonesia, Iraq and the United Arab Emirates were particularly buoyant. This exceptionally good performance owed much to the DM/US dollar exchange rate as well as to the OPEC demand for investment goods.

Structure of energy demand

It is estimated that of total final consumption of energy [14] about 71 % is used for heating, only 27 % for power and 2 % for light

14 Total primary demand for energy is higher than final consumption of energy mainly by the amount of energy lost in non-energy uses (chemical production) and in processing primary energy materials into electricity and gas or used up in these conversion processes.

(Energy Programme of the Federal Government 1981). Table 43 shows end-use by sector and also gives details of the fuel inputs for electricity generation. A number of points stand out :

- The residential/commercial and transport sectors accounted for over 67 % of final energy consumption and for 85 % of total oil consumption in 1980. It is estimated that more than 80 % of oil used by households and other small consumers was for heating (Energy Programme of the Federal Government 1981).
- Over half the fuel inputs required in the electricity industry are contributed by solid fuels.

Graphs 20, 21 and 22 compare how energy use in the household, transport and industrial sectors reacted to the two price shocks of 1973 and 1979. Households cut back severely on energy use after both oil crises. On both occasions demand for heating oil dropped particularly sharply. It does not seem, however, that the household sector has as yet geared itself to reduce its demand for energy permanently. The total energy demand of households continued to rise until 1979; though it did fall sharply thereafter, in 1981 it was only 4 % lower than the 1973 level.

By 1981 too, there appeared to be little evidence that energy use in the transport sector was being cut back to the degree which could have been expected given the large rise in the cost of motor fuel in 1979 and the fact that oil use in the transport sector accounted for nearly 40 % of total oil use in 1981.

In industry however, substantial progress was made in energy saving. From 1973 to 1980, energy consumption in industry fell by 18 % while over the same period industrial production rose by about 9 %. Even by 1979, energy use in industry had fallen relative to 1973 in contrast to the household and transport sectors where it had risen considerably, and between 1979 and 1981 a further fall of about 14 % took place (Table 43).

Forecast demand for and supply of energy to 1990

At the request of the German authorities, forecasts for growth in energy demand and of its supply components were made jointly in 1981 by three economic institutes[15]. Table 44 summarises the

15 The German Institute for Economic Research (DIW), the Energy Economics Institute at Cologne University (EWI) and the Rhine-Westphalian Institute for Economic Research (RWI).

assumptions made by each institute about the development of the German economy up to 1990 and the related changes in the level and structure of energy demand.

In broad terms the institutes assume that

- the recent good record of energy saving in the industrial sector will be maintained and that the ratio between growth in energy consumption and output growth will fall further;
- energy consumption in the residential/commercial sector will remain roughly stable in the 1979-1985 period due to price effects and the impact of recent conservation measures. It is likely that heating oil consumption in this sector will decline and be replaced by increased natural gas consumption.
  In addition, electricity could also substitute for oil. The expected increase in the amount of heated living accommodation from nearly 23 million units in 1980 to over 24 million units in 1995 would be a factor offsetting conservation gains.
- there will be only small growth in the volume of motor fuel consumed reflecting both technical improvement in vehicle construction and savings resulting from more energy-conscious driving habits.

The institutes agree in forecasting an absolute drop in total oil consumption by 1985 which will be continued through the next decade. Natural gas and solid fuel will make a somewhat larger contribution throughout the period than heretofore but the importance of nuclear power will grow markedly. In its essentials this scenario is accepted by the International Energy Agency which presents in its forecasts the same picture of moderate growth in overall demand for primary energy between 1981 and 1985 but only a small, if any, increase in the level of oil consumption (Table 43). However, the latter body's forecasts appear to be on the cautious side since it emphasises the possibility that what appear to be conservation gains may evaporate in more prosperous economic conditions.

It is important to recognise moreover that the diversification of the German economy's energy sources and the expected fall in the volume of oil consumed does not imply that it will reduce more than marginally its dependence on imported fuels (Table 42).

Since these forecasts were made there have been two important developments which could influence them considerably. Firstly, economic growth has been slower than envisaged which suggests that the forecast fuel consumption up to 1985 is somewhat too high. On the other hand, however, the fall in the price of oil, which occurred in 1983, could be expected (all things being equal) to have a stimulatory effect on demand particularly if sustained over the medium-term.

Energy Policy : diversification and conservation

The forecasts outlined above take into account the energy policies being pursued by the Federal Government. These policies fall into two broad areas, (i) diversification of energy sources and (ii) conservation of energy. The most important developments in the first area are :

- Coal. Efforts will be made to ensure that a larger volume of electricity generating capacity will be fuelled by coal. Two major developments in energy supply have recently occurred in the coal sector. Firstly, a new contract has been negotiated between the domestic coal mining industry and the electricity utilities which guarantees about 640 million tonnes of domestic coal for electricity between 1981 and 1995, an average of 43 million tonnes per year, substantially more than the 33 million tonnes under the previous contract. There are fixed purchase commitments until 1990 and only after this time can coal supplies vary with actual electricity demand. An essential element of the new arrangement is the possibility of expanded coal imports. Secondly, the coal conversion programme, presented in January 1980, contains demonstration projects for coal gasification and liquefaction proposed by private industry. The Government expects industry to bear a significant proportion of costs. Even given a high success rate in the projects, the lead-in time for their successful application is likely to be rather long, reflecting not only the technical problems involved but also the slowing effect of a medium-term fall in the real price of oil on the development of high-cost alternative energy sources. The amount of oil and gas produced by coal conversion would therefore be likely to be very small in relation to requirements in the period up to 1990.

- Natural Gas. Increased supply of natural gas is essential to the policy of substitution for oil in industry and even more in the residential sector. The scope for further substitution depends on the level of gas imports, future relative prices of oil and natural gas,

and the pace at which the required infrastructure is completed. Natural gas prices were fairly steady between 1977 and 1979, although sharp price rises took place during 1980. The likelihood that gas production in the Dutch fields will begin to decline in the next decade has been a factor behind the efforts of the German authorities to further diversify sources of supply. It is intended that Norway and the USSR will become major suppliers with the possibility of eventually diversifying sources of supply to other more distant countries such as Algeria, Nigeria and Canada. Adequate infrastructure to import and distribute natural gas is essential therefore. A joint Federal-Länder programme is in progress for the extension of the regional natural gas grid. Viewed in this overall context, the authorities consider that the Soviet gas pipeline would not of itself lead to an undesirable level of dependence on the USSR for energy supplies,particularly since gas supplies from that source would account for only 3 to 4 % of total energy consumption.

- Nuclear energy. In the first half of 1982 the nuclear plants which are on stream provided some 5,7 % of domestic primary energy needs compared with a nuclear share of 1 % in 1973. The Federal Government considers further expansion of nuclear energy to be indispensable, but long-term prospects for the nuclear energy programme continue to be uncertain. Unlike France, Germany's new construction projects could only develop slowly, largely as a result of conflicting domestic political views on questions of reactor safety. Although permits to construct nine further nuclear plants have been delayed, there is evidence that the log-jam has been broken in 1982 with the granting of five building licences. The Federal and Länder authorities have introduced measures last year aimed at cutting long and expensive delays in planning and construction. Given the long time lags involved, even these measures would not make much difference to the pattern of electricity supply for the period up to 1985. The contribution of nuclear power to total electricity generation is expected to grow from the present 17 % to 21 % in 1985.

In the area of energy conservation the authorities have attempted, through schemes of incentives, to encourage energy saving, for example by means of better insulation and the use of more energy efficient machinery and plant, through a number of schemes e.g. Federal/Länder programmes to encourage heat and energy saving and other measures adopted in the context of the 1982 Budget together with preferential loans. It is by no means clear, however, that these schemes are

entirely successful in encouraging worthwhile forms of conservation projects. An increasing emphasis is also being placed on schemes of district heating in order to utilise heating potential created as a by-product in industrial and electricity generation processes. The Government of the Federal Republic sees the most significant potential for encouraging conservation in the influence of the unrestricted working of real energy prices on energy demand. Some justification for such an approach is set out in Table 45 where it is shown that, according to OECD estimates, both the short and long-term energy price elasticities for Germany are of significant size. While the long-term trend in the price of oil is likely to continue upwards, a fall in the medium term will increase the scope for action in this regard.

The scope for further energy saving is large, particularly in the household and transport sectors where oil use is concentrated. The substantial proportion used for heating has been mentioned above. Graph 23 suggests that over half of final energy consumption is lost in various production or conversion processes. These figures may be somewhat heroic but they illustrate the need for further determined energy conservation measures. The International Energy Agency has underlined the desirability of maximum speed limits on motorways and other measures to encourage fuel efficiency in vehicle use as well as increased efforts to insulate buildings and to make more extensive use of district heating. Studies carried out with reference to the UK (House of Commons Paper 401-1) and the USA (Rodberg, 1980) suggest that there is scope for considerable employment creation in energy conservation programmes entailing building and construction activity.

V. SUMMARY AND CONCLUSIONS

This section provides a summary of the foregoing analysis and considers the implications for economic policy makers in the Federal Republic.

A. Economic trends

In the period up to the first oil shock the German economy outperformed its European partners while its adjustment to the rapid increase in real energy prices in 1974 was more successful than most other countries. The impact of the second oil shock is still being absorbed and, while on this occasion the German economy appears to have had more difficulty, it maintains nevertheless its relatively strong position. The factors conducive to a reemergence of a sustainable growth pattern under stable internal and external conditions appear to be fully present.

The vigorous economic growth of the Federal Republic during the period to 1970 can largely be explained by Marshall aid, favourable relative factor prices, and so returns to capital, the inward migration of skilled labour, institutional factors such as the development of the Common Market, and particularly, a competitive exchange rate. However since 1970 an increase of the labour share in total income, together with a related fall in the rate of return on investment, and then the effects on world trade of the first oil price shock, have all reduced the average rate of growth. This in turn has contributed to the decline in the rate of growth of capital formation in the nineteen seventies, and the slower rate of increase of productive potential, observable by the end of the decade. Over the same period the public sector's share of total resources increased considerably, with social security payments showing particularly rapid rates of growth. Although when compared to the rates observed in the fifties and sixties, the average GDP growth rate for the Federal Republic has been low in recent years, there have been marked peaks and troughs of activity. Thus, output expanded rapidly in the period to 1973 and vigorously between 1977 and 1980. Since then both GDP and investment have declined markedly with volume falls of 3 % and 10 % respectively recorded for the three year period to the first quarter of 1983. From now on a recovery in both output and investment is foreseen.

The German economy has enjoyed a relatively low and stable rate of inflation. From the establishment of the European Community (1958) to the first oil price shock (1973), inflation in the Federal Republic was usually somewhat below or close to the EC average. After OPEC I, however, the German performance was substantially better than that of the Community, with annual average growth rates of consumer prices at 5 % and 10 % respectively, in the eight years to 1982. These diverging trends were both the cause and the reflection of the upward movement of the DM, which the favourable competitive position of the German economy helped to generate, and which helped to contain the rate of increase of import costs. However the development of domestic costs was also relatively favourable, a result of the system of industrial and labour relations, and the overwhelming commitment of the authorities to contain inflationary pressures, a reflection of the independence of the Bundesbank.

The strength of the German economy from the early 1950s to the late 1970s resulted in an impressive performance in foreign trade. Until 1969 the increasing size of the trade surplus stemmed from the faster volume growth of exports compared to imports, facilitated by the competitive DM exchange rate. The improved terms of trade, subsequent to the upward movement of the DM in the early seventies, maintained this trend while in the period following the first oil shock vigorous export growth was combined with a restrained growth in imports following the stabilisation programme of 1973. The external performance after the second oil shock was less satisfactory; in particular during 1980 and 1981 export volume growth was not sufficient to offset the decline in the terms of trade, and the balance of trade turned sharply into deficit. It was only through the combined effect of a weak DM exchange rate (1980-81) and a period of falling domestic demand (1981-82) that the current account of the balance of payments moved back into marked surplus in 1982.

Over the three decades to 1980 the Federal Republic has experienced marked shifts in the structure of foreign trade. Thus the development of the European Community, and the emergence of OPEC countries as substantial importers, led to marked shifts in the geographical pattern of German exports, away from the USA and the rest of Europe. On the commodity side, manufactured goods account for around 85 % of German exports, and of this total a substantial proportion come from a relatively small number of branches, which are characterised by sophisticated production processes

and a skilled workforce. Although export patterns have demonstrated a degree of adaptability, the long-term trends show that export strength has tended to be concentrated in traditional industries, thus clothing and footware, textiles, iron and steel, metal manufactures and transport equipment; relatively homogeneous products where price competitiveness is important. However in response to competitive pressures manufacturing firms have traded-up, going into more specialised, high skill, high value added lines of production, where factors such as design and quality are essential elements in competitiveness. Nonetheless the Federal Republic continues to face strong import penetration by products which have a high technology content, such as audio equipment, cameras, computers and automobiles.

The impact of the weaker rate of economic growth observable over the last decade on the labour market which led to a fall in employment of 1 1/2 million between 1973 and 1977, was moderated by the reduction in the labour force of about 1/2 million over the same period. Since 1978, however, the labour force of the Federal Republic has been expanding rapidly, and this has contributed to the recent increase in unemployment.

Indeed through 1981 and 1982 unemployment in Germany increased very rapidly bringing the rate close to the EC average. This is in marked contrast to the previous two decades, when the German unemployment rate generally compared favourably with that of its European partners. Moreover, the situation facing young people has deteriorated particularly rapidly and foreign guest workers, who are concentrated in sectors which have shed labour most quickly, have also experienced an above average increase in unemployment.

The influx of foreign workers provided an effective adjustment mechanism in the period of strong labour demand in the nineteen sixties while the vocational training system, with its formal training and examinations, has resulted in a highly skilled labour force. The changes in the demand for labour from the mid-1970s onwards led to the loss of employment for about half a million foreign guest workers, many of whom returned to their countries of origin.

The German economy remains dependent on external sources of energy as there are only limited domestic gas reserves, no indigenous oil production, and no new discoveries of low cost coal. In addition the development of nuclear power has been slower than in other commu-

nity countries, largely because of objections by environmentalist pressure groups. Oil imports are likely to remain a considerable burden on the balance of payments. On the demand side, while there has been no attempt to shield consumers from higher energy prices, taxes on oil products are low by European standards and consequently, oil consumption in relation to GDP in the Federal Republic between 1973 and 1981 has not fallen as much as in some other countries such as the UK or Japan.

As already noted one feature of the German economy over the longer term has been the weakening of business investment and the consequential slowdown in the rate of growth of underlying productive potential. Whereas the gross capital stock, at constant prices, expanded at a rate of 5,3 % per annum in the decade to the first oil price shock, its growth rate fell to 3,6 % over the period 1974-81. Net business investment - after allowance for replacement of depreciated assets - fell from 17 % of GDP in 1964 to 8,0 % in 1982.

This points to an unsatisfactory rate of renewal and innovation, and suggests a slow adaption of the capital stock and a sluggish response to the changing economic environment. Indeed there is evidence to suggest that the Federal Republic has increasingly experienced difficulties in bringing about the necessary structural adjustments in the use and allocation of its resources. Such adjustments were relatively easy when growth was rapid. However, the process of adjustment has become much more difficult and particularly costly in social terms, in the present conditions of slow or zero growth. Hence there is a case for a more energetic approach to efforts to reduce the resistance to change, and to promoting more rapid responses in both the labour and product markets to constantly changing economic conditions.

B. Economic policy options

In formulating their economic policies the Federal authorities, as required by the Law on Stability and Growth, aim to secure steady and adequate growth, price stability, external balance and a high level of employment. Recent developments and present trends suggest that it will be very difficult for them to meet their commitments with regard to employment in the medium term.

In contrast to the period 1973-78, there will be a substantial increase in the potential labour force, which is foreseen to peak about 1988 and then to fall sharply. Over the past decade there has been a marked fall in employment in the production industries, but there has on the other hand been a small increase in employment in market services, and a relatively substantial increase in public sector employment, particularly in administration at all levels of government. However, in the period ahead, it is likely that public sector employment will remain at best stable, given the pressures to limit the growth of public expenditure and reduce borrowing. Moreover, the widespread application of office and communications technology is likely to reduce the demand for labour in certain parts of the market services sector and will have consequences too for non-market services employment. Policies to ameliorate unemployment must therefore take account of the need for the economy to adjust further.

On the external side the process of adjustment is far from complete. Given the large and sustained deficits on services and transfers which are a feature of the German balance of payments and which are likely to persist into the medium term, a satisfactory trade performance is of importance in securing the longer-term growth prospects of the German economy. Statements by commentators to the effect that the underlying external position of Germany is strong and gives no reason for concern are therefore, an oversimplification. The overall price competitiveness and the product-mix of German exports can only be satisfactory, if every effort is made to ensure that the economy adjusts smoothly to changing circumstances. Not only is there now lower external growth but the structure of the German economy still reflects the long period when the DM enjoyed a favourable exchange rate within the Bretton Woods system and which, until 1973, gave the sector of the economy engaged in overseas trade, a strong competitive edge over other sectors (Giersch, 1979). As a result, the share of the production industries in GDP has remained exceptionally high, at around 50 %, over the last two decades, in sharp contrast to the continuous decline of production industries relative to GDP recorded in other industrial nations. With the appreciation of the DM in recent years,

it is likely that Germany's position in this respect will change, and there are signs that this process is already underway and is associated with a relative decline in the importance of labour intensive industries, partly offset by a relative increase in the importance of capital intensive industries. This process has been accelerated by the emergence of certain less developed countries as major suppliers of manufactured products in world markets. These countries tend to concentrate on labour intensive lines of production and standardised products, for which Germany secured high market shares in the period to 1973.

A related problem for policy is the need to make Germany more attractive to foreign investors. Direct investment flows are important vehicles for the transmission and dispersion of modern technological and managerial knowhow. During the 1970s Germany became less attractive as an industrial location for foreign investors, a development clearly reflecting the fall in corporate profitability, and, indeed, direct investment flows reversed. Inward direct investment declined sharply in the mid-1970s, and has only partially recovered since then, whereas German direct investment abroad has increased substantially since the upward adjustment of the exchange rate; as a result the Federal Republic has consistently recorded net capital outflows on direct investment since 1975.

Another area where adjustment is required in the German economy, in common with many other industrial nations, concerns the level of public sector expenditure and borrowing. General government expenditure rose from 32 % of GNP in 1960 to 48 % of GNP in 1982. Within the total, the growth of social security payments made the major contribution to the increase of public expenditure, partly because the dynamics of the social security system were designed at a time of rapid economic growth, and partly because the coverage of the system had been extended.

On the revenue side, although total direct tax revenues have remained virtually unchanged since 1960 (at about 25 % of GNP), social security contributions have risen sharply (from 10 % of GNP in 1960 to 16 % in 1982). Nonetheless, total general government revenue has remained well below expenditure, and it can be argued that there are signs of a resistance to further increases in taxation (shown for example by the growth of the black economy). To bring borrowing under control therefore, cuts in public expenditure, made in a politically acceptable way, while seeking to avoid or minimise the adverse effects on output and employment, will almost certainly be necessary in the years ahead.

The adjustment of any economy to changes in the economic environment and in financial conditions, is brought about particularly through a process of renewal and extension of the capital stock, and it is with regard to investment that the main efforts of government policy must be concentrated in the period ahead. In considering how the resources devoted to investment in the Federal Republic can be increased the following points are of particular importance :

a) The expected rate of growth of demand. Unfavourable expectations for demand appear to have been a major factor in explaining the weakness of investment activity in recent years (Uhlmann, 1981). Lack of confidence in the growth of markets creates uncertainty about the need for investment, and raises the required level of the expected rate of return necessary to make individual investment projects attractive. An overall stance of economic policy that is perceived as favourable to growth is therefore necessary, if a sustained recovery in investment activity is to occur.

b) Profitability in the company sector. No private investment takes place unless there are prospects for a satisfactory rate of return. This points to the need for lower real interest rates than those that have prevailed in recent years. In particular the yields on long term and low risk financial assets are still much too high relative to the future and uncertain rates of return on fixed investment. In addition present and expected levels of wages and taxes also influence companies' financial positions. Many investment projects will only be profitable if wage negotiations take account of the economic and financial position in which an industry finds itself. More consideration should also be given to the role that participation by company employees in future profit earnings could play in relation to the newly created capital stock.

c) A competitive climate. Competition is an essential driving force for adjustment, innovation and investment. In a world of rapidly changing market conditions, a competitive climate both in domestic and in foreign markets helps to bring about the rapid application and diffusion of new technological and management knowledge, which is usually embodied in new investment.

d) Technological change. The rapidly increasing supply of micro-electronics and data management techniques, at falling relative prices, is bound to have a powerful impact on all sectors of the economy. To obtain the maximum benefit from this development requires a continuation of the positive attitude towards the introduction of new technology, which German trade unions have traditionally shown. There is, however, some evidence that attitudes towards the application of new technology are changing, which could have implications for future policy.

e) Adjustment to changing relative prices and new patterns in international trade. The large changes in relative energy prices, new trends in relative wage and capital costs, new markets and competitors, all require special efforts to adapt production techniques and the technical/marketing mix. On the government side, these developments require an appropriate policy for energy pricing and action, in particular through the EC, to avoid the introduction of protectionist measures in the world at large, and to exploit the full potential of the single EC market.

f) Energy. Policies and programmes for reducing energy consumption should be reinforced to remove constraints on future growth and to increase the options available to deal with uncertainties resulting from possible pressures in the world oil market. There has been an important reduction in oil consumption in recent years but this achievement does not leave room for complacency; rather there is still scope for further reductions in the level of energy intensity of the economy. This will require continuous efforts to promote and accelerate structural change. High energy prices are not themselves a sufficiently powerful incentive to bring about this change. Factors such as modest economic growth, high real interest rates, environmental problems, and an uncertain world economic and political situation, are likely to discourage highly capital-intensive energy projects with long lead times. Consequently the authorities must identify, at an early stage, any possible constraint on investments which aim to reduce energy dependence and improve energy efficiency.

g) Government investment. At all levels of government there must be awareness of the need to reduce consumption and increase investment spending. This can take the form of promotion of research and development, investment in human capital, an active public procurement policy, a favourable tax system to take account of the higher investment risks, subsidies and grants to assist private sector investment, as well as a more active public capital programme in key industries such as telecommunications, transport, energy, water supply, environmental protection, housing etc. Such investment activity should be considered complimentary to the private sector's adjustment efforts. Such a more active investment policy would, however, appear to be consistent with the need to reduce the structural budget deficit, only if current expenditure is cut substantially.

These considerations all suggest that the labour market must be flexible and efficient if employment is to be maintained and rising levels of unemployment to be avoided. They underline the need for an increase in employment to result from the establishment of an efficient and effective structure of production. A policy which aims at stimulating demand and raising the rate of economic growth quickly in order to create jobs, could well result in only a short-lived revival, without creating the necessary fundamental adjustments on the supply side of the economy, unless it led to sustained expansion of investment. Reduction in unemployment would best be based therefore, on the search for new, healthier structures in the medium term, and on the creation of higher levels of added value on a lasting basis.

Nevertheless, even if, in the years ahead, economic growth strengthens, in response to the adjustment to the new market conditions (relative prices, new suppliers, changes in competitiveness, technological developments, energy constraints, reduction in government expenditure, modest growth in the world economy) - the lack of balance in the labour market in the Federal Republic may take many years to solve, and may well be incomplete before the labour force moves onto a declining trend, towards the end of the 1980s. Even a 3 % annual average growth rate for GDP, for the remainder of the decade (a rate higher than most experts are prepared to predict), would probably only serve to maintain employment at its present level, while unemployment would continue to increase.

At first sight, the scope for government measures for employment creation or preservation, through special employment programmes or wage cost subsidies, seems to be less in the Federal Republic than elsewhere. There is a large body of opinion that such measures are counterproductive as they distort competition and reduce factor efficiency. Nonetheless the official scheme for temporary support for short-time working has been relatively successful, and there is a case for considering more general measures on the supply side of the labour market in the Federal Republic.

A wide range of detailed labour market measures are already in place in a number of countries. Indeed, the German authorities have traditionally placed considerable emphasis on vocational training and incentives to geographical and occupational mobility. However, technological developments and changes in the structure of final demand, now appear to have provoked a lower response, in terms of mobility, to such incentives, than at the time when output was growing fast, and when labour mobility was facilitated by an increasing number of foreign workers. Hence the case for increased efforts for training and retraining schemes, and the need to ensure a more flexible housing market.

It is also acknowledged that pay differentials, in particular in after-tax terms, may have narrowed too much, and that the social security system may have become too generous, and so inconsistent with the needs of a flexible labour market. There may therefore be a case for some restoring of pay differentials and other work incentives.

However, in order to have a marked impact on employment and unemployment, it may be necessary to consider the implementation of radically new policies such as the more extensive and systematic use of work-sharing. There is as yet no consensus amongst analysts of the effects of reductions in working time, nor about the conditions under which such measures would be beneficial for the long run performance of the economy. In particular, empirical evidence suggests that most work-sharing schemes do not increase the total level of employment. What they tend to do, however, is to influence individual preferences

as between working and leisure, and so reduce the number of "involuntary unemployed persons" and raise the number of "voluntary jobless persons", which is a significant achievement in the search for a more satisfactory level and distribution of social welfare. However, it is important that any reduction in working hours is balanced by a corresponding reduction in wage costs so that the effective operating costs of companies are not increased, and that arrangements are sufficiently flexible to take account of the future decline in the potential labour supply. Implementation of such schemes depends very much on the particular conditions under which a given sector or company is operating, and must be negotiated at that level.

VI. STATISTICAL ANNEX

Table 1 : Indicators of living standards, 1960-81

Based upon purchasing power standards (PPS) Level of GDP per capita in constant PPS compared to the Community average	1960	1965	1970	1975	1977	1980	1981
D	113,4	113,7	112,2	110,0	112,1	114,1	115,1
F	99,2	102,2	105,1	110,5	110,5	110,2	110,9
UK	116,5	109,3	100,2	98,9	96,7	93,1	91,5
EG 10	100	100	100	100	100	100	100
USA	166,4	161,1	147,7	143,2	142,7	137,6	140,5
JAP	:	66,1	93,3	97,2	98,3	103,0	106,3
Based upon the Ecu Growth rate of GDP per head in ECU, measured at 1975 prices and exchange rates (%)	Annual average 1960-67	Annual average 1968-73	Annual average 1974-80	1979	1980	1981	
D	2,5	4,3	2,5	4,0	1,6	0,0	
F	3,7	4,7	2,3	2,9	0,9	-0,2	
EC 10	3,1	4,3	2,1	3,1	1,0	-0,7	
USA	1,1	2,5	1,1	1,2	-1,4	1,3	
JAP	:	8,7	2,7	4,2	3,5	2,4	

Source : Eurostat

Table 2 : Value added, employment and productivity by sector, 1950-80

	Percentages and % changes			
	1950	1960	1970	1980
Distribution of value added by sector :				
Agriculture, Forestry and Fishing	10,2	5,8	3,4	2,1
Industry	49,6	53,4	52,8	47,3
Services	40,2	40,8	43,8	50,6
Total	100,0	100,0	100,0	100,0
Distribution of employment by sector :				
Agriculture, Forestry and Fishing	24,8	13,7	8,5	5,9
Industry	42,6	47,9	48,8	44,8
Services	32,6	38,4	42,7	49,3
Total	100,0	100,0	100,0	100,0
	1950-60	1960-70	1970-80	
Productivity by sector (a)				
Agriculture, Forestry and Fishing	7,2	5,6	5,5	
Industry	6,4	4,8	3,4	
Services	2,4	3,2	2,4	
Total	5,7	4,5	3,1	

(a) Annual average growth rates of value added per head at constant 1976 prices.

Source : SVR 1974-75 and 1981-82

Table 3 : Labour supply, 1960-82(a)

millions

Year	Total employment 1	Registered unemployed 2	Unregistered unemployed 3	Labour supply 1 + 2 + 3
1960	26,1	0,3	0,0	(26,4)
1965	26,7	0,1	:	(26,9)
1970	26,5	0,1	:	(26,7)
1975	25,8	1,1	(0,3)	(27,2)
1980	26,2	0,9	(0,4)	(27,5)
1982	25,5	1,8	(0,6)	(28,0)

(a) See footnote to table 39.

Source : IAB, SVR, Commission staff

Table 4 : Indicators of output and labour productivity, 1958-82

	Annual average 1958-67	Annual average 1968-73	Annual average 1974-81	1979	1980	1981	1982 (a)
GDP in volume terms (%)							
D	4,8	5,1	2,3	4,1	1,9	0,1	-1,0
F	5,4	5,5	2,4	3,2	1,3	0,3	1,4
EC 10	6,6	4,9	1,8	3,3	1,3	-0,4	0,2
USA	4,7	3,3	2,8(b)	2,4	-0,3	2,4	-2,2
JAP	:	9,4	4,6(b)	5,1	4,4	3,2	2,9
Industrial production (c)(%)							
D	5,3	6,3	1,3	5,5	-0,8	-1,5	-2,5
F	4,7	7,0	0,9	4,0	-0,5	-2,3	-1,5
EC 10	5,2	5,6	0,9	4,9	-0,8	-2,1	-1,5
USA	6,1(d)	4,1	2,3	4,4	-3,6	2,7	:
JAP	12,8(d)	10,8	3,9	8,4	7,1	3,12	:
GDP per person employed (%)							
D	4,7	4,5	2,7	2,7	0,8	0,8	:
F	4,9	4,9	2,2	3,2	1,3	1,0	:
EC 10	6,5	4,5	1,8	2,4	0,8	1,1	:
USA	2,7	1,2	0,7(b)	0,1	-1,1	1,5	:
JAP	:	8,3	3,7(b)	4,1	3,4	2,2	:

(a) Estimate. Total for Community is for EC 10.
(b) 1974-80.
(c) Excluding construction.
(d) 1960-67.
Source : Eurostat, OECD and Commission staff

Table 5 : Employment trends, 1958-83

	Annual average 1958-67	Annual average 1968-73	Annual average 1974-81	1979	1980	1981	1982 (a)
Growth of total employment (%)							
D	0,1	0,6	-0,4	1,4	1,0	-0,6	-1,2
F	0,5	1,0	0,2	-0,1	0,0	-0,7	0,9
EC 9	0,1	0,4	0,0 (b)	0,8	0,2	-1,6	-0,5
USA	1,9	2,1	2,1 (b)	2,7	0,3	:	:
JAP	1,5	1,0	0,9	1,3	1,0	1,0	:
Unemployment rate (c)							
D	1,2	0,9	3,8	3,4	3,4	4,8	6,9
F	0,7	1,5	5,1	6,0	6,4	7,8	8,8
EC 9	2,3	2,3	5,3	5,4	6,0	7,9	9,5

(a) Estimate. Total for Community is for EC 10.
(b) 1974-80.
(c) Numbers unemployed as a % of total civil active population.
Source : Eurostat and Commission staff

Table 6 : Private consumption and fixed investment, 1960-82

	Annual average 1960-67	Annual average 1968-73	Annual average 1974-81	1979	1980	1981	% change 1982 (a)
Private consumption in volume terms (% changes)							
D	4,4	5,1	2,4	3,0	1,8	-1,2	-1,5
F	5,6	5,4	3,2	3,0	1,7	2,2	3,1
EC 9	4,5	4,7	2,2	3,5	1,6	-0,2	0,1
USA	4,2	4,2	3,4(b)	2,7	0,3	1,8	1,0
JAP	:	9,1	3,9(b)	5,9	1,3	0,5	:
Total fixed investment							
- volume growth (% changes)							
D	3,3	5,8	1,0	8,4	3,7	-3,8	-6,3
F	8,3	6,6	0,2	2,7	0,8	-2,8	-1,4
EC 9	5,4	5,1	0,0	4,0	2,3	-5,6	-3,0
USA	5,2	3,8	1,3	-1,6	-11,3	8,3	:
JAP	:	14,0	1,6	7,7	0,2	0,3	:
- as a % of GDP							
D	25,2	24,7	21,8	22,6	23,6	22,7	21,1
F	22,3	23,5	22,3	21,4	21,6	20,9	20,5
EC 9	21,9	22,5	21,1	20,6	21,1	20,2	19,3
USA	18,0	18,3	18,3(b)	19,7	17,5	18,5	:
JAP	:	34,7	31,9(b)	34,3	32,8	31,7	:

(a) Estimate. Total for Community is for EC 10.
(b) 1974-80.
Source : Eurostat, OECD and Commission staff

Table 7 : The relative magnitude of the General Government sector, 1960-82

as a % of GDP

National accounts basis	1960	1970	1975	1980	1981	1982(a)
Total General Government revenues	35,9	39,3	43,8	45,6	45,8	43,7
Taxes	23,0	24,0	24,7	25,7	25,0	24,5
Social Security contributions	10,3	12,6	16,2	16,7	17,3	15,9
Other	2,6	2,8	2,9	3,3	3,4	3,3
Total General Government expenditure	31,9	39,1	49,5	48,7	49,8	47,6
Government consumption	13,4	15,7	20,5	20,1	21,3	20,9
Current transfers	14,1	15,9	21,5	20,7	21,3	19,3
of which : to households	12,3	13,0	18,0	16,9	17,7	16,1
Gross investment	3,2	4,6	3,9	3,3	3,4	3,2
Capital transfers	1,6	1,9	2,2	2,3	2,1	1,6
Debt interest	0,7	1,0	1,4	1,9	2,3	2,6
Net lending(+) or borrowing (-) of General Government	+3,0	+0,2	-5,7	-3,1	-4,0	-3,9

(a) Estimate.

Source : SVR, 1974-75 and 1981-82

Table 8 : Indicators of inflation, 1960-82

	Annual average 1960-67	Annual average 1968-73	Annual average 1974-81	1979	1980	1981	1982	% change Forecast 1983
Consumer prices								
D	3,0	5,1	4,5	4,1	5,5	5,9	5,3	3,7
F	3,7	6,1	10,8	10,7	13,6	13,4	12,0	13,0
EC	3,6	6,3	10,3 (a)	10,2	14,1	12,6	:	9,5
USA	1,8	4,5	7,5 (a)	11,3	13,5	10,4	6,1	:
JAP	:	6,4	7,1	3,6	8,0	4,9	2,7	:
Per capita compensation of employees								
D	8,5	12,8	6,9	5,7	6,5	5,3	4,6	4,8
F	10,0	12,5	14,5	12,8	14,6	14,8	12,2	14,3
EC	8,9	13,0	12,5 (b)	11,1	12,8	12,8	10,8	10,2
USA	4,7	7,3	8,2 (b)	8,9	:	:	:	:
JAP	:	18,6	10,3	7,1	:	:	:	:
Nominal labour costs per unit of output								
D	4,2	7,9	4,9	3,5	6,2	4,5	3,0	2,0
F	4,8	7,3	12,5	9,6	13,5	13,3	12,3	12,2
EC	4,5	8,3	10,2	8,4	12,2	11,9	:	7,9
USA	2,3	5,6	8,1	9,5	10,0	8,1	:	:
JAP	:	9,3	8,8	2,9	4,4	4,7	:	:

(a) 1974-80.
(b) 1974-79.
Source : Eurostat, OECD and Commission staff

Table 9 : DM exchange rate, terms of trade and competitiveness, 1963-82

	DM/Dollar Exchange Rate	DM Effective Exchange Rate	Indices 1975 = 100	
			Terms of Trade	Competitiveness(a)
1963	3,986	87,7	95,5	86,7
4	3,975	87,9	96,0	85,3
5	3,994	87,3	95,6	85,3
6	3,999	87,6	96,1	85,5
7	3,987	88,1	98,0	84,1
8	3,992	89,9	97,5	84,0
9	3,925	92,3	97,6	85,4
1970	3,643	100,0	100,7	94,0
1	3,469	103,0	103,4	97,0
2	3,189	105,9	105,3	97,9
3	2,663	116,6	100,0	106,6
4	2,586	123,3	95,0	104,7
5	2,457	125,4	100,0	100,0
6	2,517	132,5	97,4	100,6
7	2,322	143,6	97,5	103,4
8	2,009	151,9	101,5	104,8
9	1,832	160,5	97,9	105,7
1980	1,821	161,0	93,1	99,8
1	2,255	152,9	89,4	91,6
2	2,425	160,5	91,0	93,2

(a) This index is based upon relative wholesale prices for manufactured goods with 18 industrialised competitor countries, adjusted for exchange rate movements. A rise in the index indicates a loss of competitiveness.

Source : Eurostat, OECD and Commission staff

Table 10 : Variability of consumer price inflation, 1970-81

	Lowest price increase(%)	Highest price increase (%)	Estimated Standard Deviation
D	2,4 (1978)	7,7 (1973)	1,4
F	5,0 (1970)	13,2 (1974/80/81)	2,9
I	5,0 (1970)	20,8 (1974)	5,6
UK	6,0 (1970)	23,5 (1975)	4,9
EC	4,8 (1970)	13,5 (1975)	2,7
USA	3,5 (1972)	10,3 (1974)	2,2
JAP	3,4 (1979)	21,8 (1974)	4,7

Source : Eurostat and Commission staff

Table 11 : Growth of real income and labour share in total income, 1971-83

Growth rate of real personal disposable income (%)	1971	1973	1975	1977	1979	1980	1981	Forecast 1982	Forecast 1983
D	5,3	2,0	4,4	2,2	3,9	1,6	-8,2	-1,5	1,4
F	6,6	6,3	4,8	3,3	1,2	-0,8	3,4	1,9	2,9
UK	1,3	6,5	-1,9	-1,3	5,9	0,2	0,6	-0,1	0,3

Shares of compensation of employees in total net national income (a)(%)	Annual average 1960-67	Annual average 1968-73	Annual average 1974-81	1979	1980
D	64,1	67,8	71,6	70,8	72,1
F	60,4	63,0	70,5	70,9	72,4
EC 9	65,0(c)	66,6	71,9	71,7	73,1
USA	71,0	75,0	75,9(b)	75,7	:
JAP	:	55,3	65,8(b)	66,6	:

(a) GNP at market prices less consumption of fixed capital less factor cost adjustment.
(b) 1974-79.
(c) 1963-67.
Source : Eurostat and Commission staff

Table 12 : Balance of payments, current account, 1969-81

DM '000 million

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Balance of :													
Trade(fob/fob)	20,3	20,8	23,5	26,7	40,6	57,4	43,3	42,0	46,0	51,2	32,0	19,0	40,3
Services and factor incomes	-4,1	-7,8	-9,2	-10,1	-12,7	-14,8	-15,5	-14,2	-18,2	-15,3	-22,1	-24,3	-29,8
Transfers	-8,8	-9,8	-11,6	-13,8	-15,5	-16,1	-17,9	-17,9	-18,2	-17,8	-20,8	-24,3	-27,2
Current transactions	7,5	3,2	2,8	2,7	12,4	26,6	9,9	9,9	9,5	18,1	-11,0	-29,5	-16,6
Current account surplus/deficit as a % of GDP													
D	1,3	0,5	0,4	0,3	1,3	2,6	0,9	0,9	0,7	1,4	-0,7	-2,0	-1,0
F	-1,3	-0,1	0,3	0,1	-0,3	-2,2	0,0	-1,7	-0,9	0,8	0,3	-1,1	-1,5
USA	0,1	0,3	0,0	-0,5	0,6	0,2	1,2	0,3	-0,8	-0,6	0,0	0,1	0,1
JAP	1,2	1,0	2,5	2,2	0,0	-1,0	-0,1	0,7	1,6	1,7	-1,4	-1,0	0,4

Sources : Bundesbank, Eurostat

Table 13 : % Volume growth in exports and imports, 1960-83

	Average annual rates			1979	1980	1981	1982
	1960-67	1968-73	1974-81				
Export Performance							% changes
total exports of goods (fob) (volume)							
D	7,4	8,8	4,5	6,2	5,4	8,1	7,5
F	6,6	15,0	5,5 (a)	8,0	3,4	5,1	3,9
USA	:	8,8	5,2 (a)	8,9	10,0	0,3	-8,5
JAP	:	12,5	8,0 (a)	-0,7	18,0	10,7	-1,8
exports of manufactured goods	7,5 (b)	9,7	3,1	6,5	4,0	4,9	:
Import Performance							% changes
total imports of goods (cif) (volume)							
D	6,7	9,5	6,1	10,8	5,2	-0,7	2,3
F	9,5	14,4	4,7 (a)	11,1	5,4	-0,4	4,7
USA	6,6	9,7	6,1 (a)	0,2	-7,1	2,5	-2,1
JAP	16,2	14,7	0,7	10,9	-5,9	-2,0	0,3
ratio of imports to total home demand							
D	14,6	16,3	20,8	21,2	23,2	29,3	23,4
F	10,9	11,3	18,8	18,8	20,5	23,8	20,4
USA	3,1	4,3	7,7 (a)	8,6	9,3	:	:
JAP	:	7,5	10,3 (a)	9,9	12,3	:	:

(a) 1974-80.
(b) 1961-67.
Source : Germany and France : Eurostat and Commission staff
USA and Japan : IMF
Manufactured goods for Germany : StBA

Table 14 : Exports by destination, 1962-82

% shares

	1962	1965	1970	1973	1975	1976	1977	1978	1979	1980	1981	1982
Exports to :												
EC-10	42,5	43,7	47,4	48,2	44,8	46,8	45,9	46,9	49,5	49,1	46,9	48,3
Other European countries	25,6	25,1	22,1	21,1	20,4	20,3	20,2	19,0	19,5	20,3	19,2	19,1
North America	8,3	9,1	10,1	9,3	6,8	6,4	7,5	7,8	7,3	6,7	7,2	7,2
Other industrial countries	4,0	4,0	4,2	3,8	3,7	3,4	3,2	3,5	3,4	3,6	4,0	3,6
OPEC (a)	:	:	:	3,4	7,5	8,1	9,1	8,6	6,1	6,5	8,8	8,9
Other developing countries	15,5	14,3	11,9	8,2	8,9	8,2	8,0	8,0	8,2	8,3	9,0	8,1
State trading countries	4,1	3,8	4,3	6,1	7,9	6,8	6,1	6,2	6,0	5,5	4,9	4,8
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

(a) Prior to 1973 the data for OPEC are included in those for Other developing countries.
Source : SVR, 1981-82, and Bundesbank

Table 15 : Imports by origin, 1962-82

% shares

	1962	1965	1970	1973	1975	1976	1977	1978	1979	1980	1981	1982
Imports from :												
EC-10	40,1	45,2	50,2	52,8	50,4	49,1	49,0	50,0	49,2	46,9	47,3	48,2
Other European countries	15,8	14,0	13,2	12,5	11,8	12,2	12,9	14,3	14,1	14,5	14,6	14,9
North America	16,0	14,3	12,7	9,5	8,7	8,9	8,2	8,0	8,0	8,6	8,2	8,4
Other industrial countries	3,1	3,2	3,8	4,1	4,4	4,5	4,7	4,6	4,6	4,5	4,4	4,6
OPEC (a)	:	:	:	7,2	11,0	11,0	10,0	8,0	9,2	11,0	10,1	8,7
Other developing countries	20,6	19,1	16,1	9,3	9,0	9,5	10,5	10,0	9,4	9,4	9,3	9,5
State trading countries	4,4	4,2	4,0	4,6	4,7	4,9	4,8	5,2	5,5	5,1	5,2	5,7
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

(a) Prior to 1973 the date for OPEC are included in those for Other developing countries.
Source : SVR, 1982-83, and Bundesbank

Table 16 : Foreign trade by broad commodity groups, 1967-81

DM '000 million

	1967	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Exports of goods (fob)	87,0	125,3	178,4	230,6	221,6	256,6	273,6	284,9	314,5	350,3	396,9	427,7
Imports of goods (cif)	70,2	109,6	145,4	179,7	184,3	222,2	235,2	243,7	292,0	341,4	369,2	376,5
Trade balance (fob/cif)	16,8	15,7	33,0	50,9	37,3	34,4	38,4	41,2	22,5	8,9	27,7	51,2
Exports of manufactured goods (fob)	73,7	107,4	152,1	193,3	188,4	219,4	234,3	242,8	265,3	292,0	330,1	:
Imports of manufactured goods (cif)	29,9	54,8	75,4	83,2	93,0	112,5	122,2	133,5	155,6	174,9	186,2	192,4
Balance of trade in manufactured goods (fob/cif)	43,8	52,6	76,7	110,1	95,4	106,9	112,1	109,3	109,7	117,1	143,9	:
Exports of investment goods (fob)	24,7	31,7	45,6	53,6	58,5	68,0	72,3	72,8	74,5	82,1	96,6	109,6
Imports of investment goods (cif)	5,3	9,8	11,2	11,4	13,7	16,8	18,9	21,1	24,4	27,6	32,1	34,7
Balance of trade in investment goods (fob/cif)	19,4	21,9	34,3	42,2	44,8	51,2	53,4	51,7	50,1	54,5	64,5	74,9

Source : SVR 1981-82/1982-83, Bundesbank

Table 17 : Balance of payments, 1960-82

DM '000 million

	1960	1965	1970	1973	1975	1976	1977	1978	1979	1980	1981	1982
Current balance	4,8	-6,2	3,2	12,4	9,9	9,9	9,5	18,1	-11,2	-28,5	-14,7	+8,1
Capital movements (a)												
- private sector long term capital	1,2	2,4	1,5	15,2	-19,4	-3,9	-11,3	0,3	13,6	-15,5	-9,2	-21,2
. inward	2,7	4,6	10,1	15,9	2,5	13,7	9,6	21,2	32,0	11,0	14,9	5,1
. outward	-1,5	-2,2	-8,6	-0,7	-21,9	-17,6	-20,9	-20,9	-18,4	-26,5	-24,1	-26,3
- public sector long term capital	-1,3	-1,3	-2,4	-2,2	1,2	2,4	-1,6	-3,3	-1,5	20,8	18,0	5,0
- short term (b)	1,4	1,0	16,0	0,2	4,9	0,4	12,6	8,4	-1,5	-1,5	0,4	11,0
- other items	2,0	2,8	4,3	-9,3	6,6	-7,6	-6,6	-11,4	-6,6	-1,0	6,8	-0,3
- change in reserves	8,0	-1,3	22,7	-16,1	-3,3	-1,3	-2,6	-12,2	7,3	25,7	-1,3	-2,7

(a) Assets : increase -/decrease +. Liabilities : increase +/decrease -
(b) Including statistical discrepancy.
Source : Bundesbank

Table 18 : A comparison of recent medium-term forecasts for GNP growth, consumer price inflation, the current account of the balance of payments and unemployment

	GNP growth annual average % change	Price inflation annual average % change	Unemployment Ratio (%) at end of forecasting period	Current account surplus/deficit at end of period
West Deutsche Landesbank[a]				
forecast 1983-86	2,1 - 2,6	3,9 - 4,2	7,0	2,0 (billion USD)
IfO- Institut[b]				
forecast 1981-85	2,4 (2,0)	3,5 (3,8)	n/a	n/a
forecast 1986-90	3,2 (2,4)	2,7 (3,5)	n/a	n/a
University of Hamburg[c]				
forecast 1982-84	1,7	4,6	greater than 2 m.	-3,0 (billion DM)
IfW, Kiel[d]				
forecast 1980-85	0,7	4,1	2,37 m.	n/a
forecast 1985-90	2,7	3,5	1,8 m.	n/a

(a) West Deutsche Landesbank projection September 1982.
(b) Ifo 17/18, 1982. Optimistic scenario; Pessimistic scenario, which assumes a less satisfactory development of wages and the exchange rate, in brackets.
(c) University of Hamburg. Submission to the Project Link meeting - Wiesbaden, September 1982.
(d) IfW, Kiel (Boss und Walter) Arbeitspapier Nr. 169, February 1983.

Table 19 : Estimating the impact of fiscal policy : OECD procedure [a], 1971-82

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
												%
Change in GDP	3,2	3,7	4,9	0,5	-1,8	5,2	3,0	3,2	4,5	1,9	-0,3	0,9
Contribution of fiscal impact to GDP change	0,1	0,5	-1,7	2,0	4,6	-0,9	-1,7	0,8	0,7	0,4	0,8	-0,5

(a) See OECD Economic Surveys : 1981-82 Germany, June 1982.

Table 20 : General Government[(a)] : revenue and expenditure, 1960-80

as % of GDP

Year	Revenue	Expenditure	Financial deficit
1960	35,6	32,5	3,1
1961	36,7	33,8	2,9
1962	37,0	35,6	1,5
1963	37,2	36,2	1,0
1964	36,9	36,1	0,7
1965	36,2	36,8	-0,6
1966	36,7	36,9	-0,2
1967	37,2	38,6	-1,4
1968	37,1	37,9	-0,8
1969	39,0	37,9	1,1
1970	38,3	38,0	0,3
1971	39,1	39,2	-0,2
1972	39,7	40,2	-0,5
1973	42,1	40,9	1,2
1974	42,6	43,9	-1,4
1975	41,9	47,7	-5,8
1976	43,4	47,0	-3,6
1977	44,6	47,0	-3,6
1978	44,2	46,8	-2,7
1979	43,8	46,7	-2,9
1980	43,9	47,3	-3,4

(a) General Government is defined as the territorial Authorities (Gebietskörperschaften) plus Social Security. This data is on a National Accounts basis.

Source : SVR, 1981-82

Table 21 : Monetary targets and outturns, 1975-83

% changes

Year	Target for the growht of the Central Bank Money Stock[(a)]	Actual outturn
1975	8	9,9
1976	(8)[(b)]	(9,3)[(b)]
1977	(8)[(b)]	(9,0)[(b)]
1978	(8)[(b)]	(11,4)[(b)]
1979	6 - 9	6,4
1980	5 - 8	4,8
1981	4 - 7	3,5
1982	4 - 7	6,5
1983	4 - 7	:

(a) Except for 1976, 1977 and 1978 the growth target relates to the period between the fourth quarter of the preceding year and the fourth quarter of the year in question.

(b) Targets and outturns based upon annual averages.

Source : Bundesbank

Table 22 : Annual growth rates of productive potential and real GDP, 1960-83

Year	Productive potential by estimation method				GDP
	SVR		Bundesbank	Stark u. Westphal	
	old	new			
1960	:	:	:	:	:
1961	+5,7	+5,6	:	:	+5,1
1962	+5,6	+5,5	:	:	+4,4
1963	+4,9	+4,9	+5,0	:	+3,1
1964	+4,9	+4,9	+4,7	:	+6,7
1965	+5,1	+5,0	+4,1	:	+5,5
1966	+4,5	+4,5	+4,1	:	+2,6
1967	+3,6	+3,4	+4,5	:	-0,1
1968	+3,3	+3,1	+4,6	3,7	+5,9
1969	+3,8	+3,5	+5,0	4,5	+7,5
1970	+4,7	+4,7	+5,1	5,6	+5,1
1971	+4,7	+4,9	+4,9	6,0	+3,1
1972	+4,8	+4,6	+4,2	5,1	+4,2
1973	+4,4	+4,0	+3,1	4,3	+4,6
1974	+3,5	+3,0	+3,6	2,0	+0,5
1975	+2,8	+2,5	+2,5	1,7	+1,7
1976	+2,5	+2,1	+2,7	1,6	+5,5
1977	+2,1	+2,1	+2,7	1,6	+3,1
1978	+2,1	+2,0	+2,6	1,2	+3,1
1979	+2,1	+2,0	+2,6	2,3	+4,2
1980	+2,3	+2,3	+2,6	2,5	+1,8
1981	+2,0	+2,2	+2,5	:	+0,1
1982	:	+1,5	+1,75	:	-1,0
1983	:	+1,4	+1,75	:	-0,2

Source : SVR, Bundesbank, StBA, Commission staff

Table 23 : Age profile of capital stock, 1970-81

	1970	1975	1980	1981
	Mining and manufacturing industry			
Mining	52,8	51,0	55,4	56,3
Basic materials production	62,0	59,8	54,9	54,4
Investment goods	64,2	62,0	59,1	59,1
Consumer goods	63,3	61,0	57,4	56,9
	Services			
Distribution	68,6	67,9	66,2	65,8
Transport	60,6	62,6	60,4	60,0
Banking	76,6	76,3	74,3	73,8
Other services (excl. rental)	76,3	74,7	74,0	73,8
Rental	74,4	74,6	73,3	73,1

Source : DIW, StBA, Commission staff

Table 24 : Growth rate of gross (G) and net (N) fixed capital investment, 1962-81 (constant 1976 prices)

%

		1962-67	1968-73	1974-79	1980	1981
		Building and construction				
Agriculture and forestry	G	1,9	1,2	0,6	0,6	0,5
	N	2,8	1,3	0,3	0,2	0,0
Manufacturing industry	G	6,2	4,8	3,3	3,0	3,3
	N	6,1	4,1	2,0	1,8	2,2
Distributive trades and transport	G	5,8	5,8	4,3	3,6	3,4
	N	6,6	6,1	3,8	2,8	2,6
Service undertakings	G	5,5	4,8	3,9	3,7	3,7
	N	6,3	5,0	3,6	3,4	3,4
Enterprise sector (excl. rental)	G	5,9	4,9	3,9	3,8	3,8
	N	6,5	4,8	3,4	3,2	3,3
State (a)	G	5,9	4,9	4,0	3,5	3,6
	N	7,3	5,4	4,0	3,3	3,4
All economic branches	G	5,5	4,7	3,7	3,5	3,5
	N	6,3	4,9	3,4	3,1	3,1
		Equipment				
Agriculture and forestry	G	7,5	3,0	1,8	2,1	1,0
	N	6,7	1,0	1,3	2,5	0,6
Manufacturing industry	G	7,5	5,8	2,6	1,9	0,3
	N	7,1	5,4	1,1	1,6	2,2
Distributive trades and transport	G	5,5	4,9	3,7	3,6	3,4
	N	6,0	5,3	3,0	3,4	3,0
Service undertakings	G	12,0	14,4	12,1	17,3	14,6
	N	12,3	14,7	12,0	19,5	14,7
Enterprise sector (excl. rental)	G	7,2	5,8	3,6	4,0	3,9
	N	7,0	5,5	2,6	4,5	4,1
State (a)	G	8,4	6,3	6,0	5,5	5,4
	N	9,3	5,9	5,6	5,0	5,1
All economic branches	G	7,3	5,8	3,7	4,1	3,9
	N	7,1	5,5	2,7	4,4	4,1

(a) Excluding civil engineering.
Source : StBA, Commission staff

Table 25 : Fixed capital formation by branche using the ownership and user concepts, 1960-79

Branches	Purchases of new buildings and equipment on the basis of the ownership concept % share at 1970 prices					Purchases of new buildings and equipment on the basis of the user concept % share at 1970 prices				
	1960	1965	1970	1975	1979	1960	1965	1970	1975	1979
Agriculture, forestry, fishing	5,4	4,9	3,1	3,2	3,2	5,4	5,0	3,2	3,2	3,3
Energy and water supplies, mining	6,1	5,8	4,8	7,7	5,6	6,1	5,8	4,9	7,8	5,8
Manufacturing industries (a)	20,8	19,5	22,9	16,3	17,6	21,4	20,4	24,2	18,4	20,8
Chemicals, mineral oil refining, processing of rubber and plastics	3,8	4,1	5,2	3,8	3,0	3,9	4,2	5,4	4,1	3,5
Metal production	2,8	2,4	2,8	2,0	1,4	2,8	2,5	2,9	2,2	1,7
Wood, paper and printing industries	1,7	1,5	2,1	1,3	1,7	1,8	1,6	2,2	1,5	3,0
Capital goods industries	6,5	6,4	7,8	5,8	7,6	6,7	6,7	8,3	6,5	8,8
Leather, textile and clothing industries, food, drink and tobacco industries	4,6	3,6	3,7	2,7	2,6	4,7	3,8	4,0	3,2	3,4
Building & civil eng., extraction & processing of non-metallic minerals, fine ceramics, production and processing of glass	3,8	4,1	4,2	2,5	3,6	4,0	4,3	4,4	2,9	4,2
Distributive trades	6,1	5,6	5,2	4,9	5,2	6,9	6,5	6,2	6,5	7,5
Transport and communication	7,1	6,9	8,9	9,0	8,5	7,3	7,1	9,2	9,4	9,2
Service undertakings (b)	8,0	9,2	11,4	15,6	19,5	6,3	7,0	8,2	10,9	12,4
Renting of dwellings	31,7	28,7	24,3	24,0	23,2	31,7	28,7	24,3	24,0	23,2
State	12,4	16,7	16,7	17,6	14,9	12,4	16,7	16,7	17,7	15,1
All branches of the economy	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

(a) Including extraction and processing of non-metallic minerals, fine ceramics, production and processing of glass.
(b) Including non-profit-making bodies.

Source : Ifo, 1980

Table 26 : Gross value added in the Federal Republic of Germany and France, 1960-80

Branches	Federal Republic of Germany											France								
	% Share of total						Annual rates					% Share of total					Annual rates			
	60	70	74	75	79	80	60/70	70/74	74/75	75/79	79/80	60	70	74	75	79	60/70	70/74	74/75	75/79
Agriculture	4,2	2,9	2,9	2,8	2,5	2,5	0,9	3,1	-3,8	1,3	1,6	9,6	6,4	5,7	5,3	5,4	1,4	1,9	-5,5	3,9
Fuel & power production	5,5	5,6	5,7	5,4	5,4	5,1	4,9	3,4	-6,9	3,7	-2,7	3,3	4,1	4,1	4,1	4,3	8,0	2,1	0,5	4,9
Manufacturing production	32,3	35,3	35,0	33,7	33,4	33,1	5,6	2,8	-5,5	3,8	0,7	22,6	27,4	28,3	27,7	27,6	7,7	5,9	-1,0	3,5
Ores & metals	2,1	1,9	1,9	1,8	1,7	1,6	4,1	2,0	-5,7	2,3	-2,8	2,3	2,1	2,1	1,6	1,7	5,0	4,1	-21,0	4,9
Minerals	1,9	2,0	2,0	1,9	2,0	1,9	5,3	2,9	-6,2	4,9	-0,1	1,2	1,4	1,6	1,4	1,4	7,6	7,0	-7,1	3,6
Chemical production	1,6	2,9	3,5	3,3	3,5	3,3	10,7	8,6	-9,4	5,7	-4,1	1,7	2,2	2,5	2,2	2,5	8,7	7,8	-7,4	6,5
Metal production	4,4	4,1	3,8	3,8	3,6	3,7	4,1	0,6	0,3	10,1	2,8	2,9	3,5	3,3	3,2	3,0	7,5	3,6	-2,6	1,7
Industrial machinery	4,1	4,3	4,2	3,8	3,7	3,8	5,4	2,1	-10,9	3,5	4,1	1,6	2,2	2,3	2,4	2,0	9,3	5,7	5,7	-0,4
Office machinery	0,8	1,0	1,2	1,2	1,4	1,4	7,6	7,6	-0,2	7,0	5,8	0,3	0,5	0,7	0,8	0,8	10,6	11,5	14,6	4,2
Electrical machinery	2,3	3,3	3,8	3,7	3,7	3,8	8,5	6,9	-5,0	4,4	3,0	1,1	1,8	2,2	2,2	2,4	10,6	10,8	2,3	5,3
Transport equipment	1,8	2,7	2,5	2,4	2,7	2,6	8,8	0,9	-5,8	7,4	-4,1	2,2	2,8	3,0	3,1	3,5	8,3	6,7	4,8	6,6
Food	5,4	4,5	4,6	4,6	4,2	4,2	3,6	1,5	-2,3	1,6	2,8	3,1	4,1	4,1	4,4	4,5	8,6	5,5	8,7	3,7
Textiles & leather	3,3	2,8	2,2	2,3	2,0	1,9	2,7	-2,2	-1,3	0,4	-2,8	2,9	2,8	2,7	2,6	2,1	5,4	3,7	-3,2	-1,5
Paper & print	2,3	2,4	2,2	2,0	2,1	2,1	5,1	0,1	-8,1	4,6	2,7	1,7	1,8	1,6	1,5	1,5	6,1	2,0	-4,0	3,6
Rubber & plastics	0,8	1,4	1,4	1,3	1,5	1,4	10,9	4,0	-8,8	7,2	-2,4	0,7	1,0	1,1	0,9	0,9	8,4	7,7	-12,0	4,2
Other manufacturing prod.	1,8	1,8	1,8	1,7	1,5	1,5	4,9	3,2	-9,6	0,7	-0,4	0,9	1,1	1,2	1,2	1,2	8,1	7,9	0,4	3,0
Building & construction	7,5	6,7	6,3	6,1	6,1	6,3	3,6	1,4	-5,0	4,2	4,4	8,2	8,7	7,9	8,1	7,0	6,2	2,4	3,6	-0,2
Market services	36,9	36,9	37,1	38,5	40,0	40,4	4,7	3,2	1,7	5,0	2,7	39,0	39,7	41,6	42,1	43,2	5,8	6,2	2,4	4,3
Recovery & repair	11,8	12,1	11,4	11,6	11,9	11,5	4,9	1,4	-0,6	4,7	-1,0	13,2	13,0	13,2	13,2	12,4	5,4	5,4	1,7	1,9
Lodging & catering	2,1	1,5	1,3	1,4	:	:	1,0	0,3	2,6	:	:	2,9	2,1	1,8	1,9	1,7	2,6	0,7	4,6	1,0
Transport services	4,2	3,8	3,6	3,5	3,6	3,7	3,8	1,2	-4,3	5,0	4,6	4,1	4,0	4,1	4,0	4,2	5,5	5,7	-3,2	5,1
Communications	1,6	1,9	2,1	2,1	:	:	6,4	5,9	-3,5	:	:	1,0	1,3	1,3	1,5	1,6	8,9	5,2	11,9	6,6
Credit & insurance	2,5	3,6	4,0	4,4	4,7	4,8	8,6	5,7	8,0	6,2	3,7	2,3	3,4	3,7	3,5	3,9	9,9	7,4	-4,4	5,9
Other market services	14,3	13,8	14,7	15,6	:	:	4,3	4,7	4,2	:	:	15,6	15,9	17,4	18,0	19,4	5,8	7,4	4,7	5,5
Non-market services	13,4	12,2	12,8	13,4	12,5	12,6	3,7	4,2	2,8	2,2	2,5	17,2	13,6	12,4	12,7	12,4	3,2	2,5	3,7	3,0
Total	100,0	100,0	100,0	100,0	100,0	100,0	4,7	3,0	-2,0	4,0	1,8	100,0	100,0	100,0	100,0	100,0	5,6	5,0	1,1	3,5

All constant prices, FRG 1976, France 1975
Source : Eurostat, Commission staff

Table 27 : Wage and salary earners by production sector in the Federal Republic of Germany and France, 1970-80

Branches	Federal Republic of Germany									France								
	% Share of total					Annual rates				% Share of total					Annual rates			
	70	74	75	79	80	70/74	74/75	75/79	79/80	70	74	75	79	80	70/74	74/75	75/79	79/80
Agriculture	1,3	1,1	1,1	1,2	1,2	-4,3	-1,7	2,4	0,8	3,5	2,7	2,6	2,2	2,1	-5,0	-5,1	-3,4	-1,9
Fuel and power production	2,3	2,1	2,2	2,0	2,0	-2,8	1,1	-1,1	1,1	2,0	1,7	1,7	1,7	1,7	-2,1	-0,6	0,3	0,3
Manufacturing production	41,9	39,9	38,9	37,1	36,9	-1,3	-5,9	-0,5	0,9	31,2	31,3	30,6	28,2	27,7	1,7	-2,7	-1,3	-1,5
Ores and metals	2,0	1,9	1,9	1,7	1,7	-2,0	-2,9	-2,0	-1,6	1,6	1,5	1,5	1,3	1,2	0,6	-0,6	-3,5	-6,5
Minerals	2,1	2,0	1,9	1,8	1,8	-1,1	-8,2	-0,7	0,2	1,8	1,8	1,7	1,5	1,5	1,0	-3,1	-2,2	-1,7
Chemical production	2,5	2,5	2,6	2,4	2,3	0,0	-0,2	-1,4	0,9	1,9	1,9	1,9	1,8	1,8	1,9	-1,5	-0,5	-1,0
Metal production	4,7	4,6	4,4	4,1	4,1	-0,7	-6,7	-1,2	1,9	4,1	4,1	4,0	3,5	3,5	1,7	-3,6	-2,1	0,5
Industrial machinery	5,3	5,2	5,1	4,9	4,9	-0,4	-6,4	-0,2	0,8	2,2	2,2	2,2	1,9	1,8	2,0	-2,0	-2,7	-1,7
Office machinery	1,3	1,3	1,3	1,3	1,3	0,0	-5,5	1,0	1,8	0,7	0,7	0,7	0,7	0,7	3,2	-1,3	0,2	0,2
Electrical machineray	5,0	5,2	5,0	4,7	4,6	0,6	-6,2	-1,2	1,1	2,5	2,8	2,8	2,6	2,6	4,6	-0,8	-0,9	-1,6
Transport equipment	3,3	3,1	3,1	3,4	3,4	-1,0	-6,2	3,2	1,9	3,7	3,9	3,9	3,8	3,7	3,3	-1,5	0,4	-1,8
Food	3,6	3,5	3,5	3,4	3,4	-1,1	-2,3	0,1	0,0	2,9	2,7	2,7	2,7	2,7	0,3	-0,7	0,3	-0,3
Textiles and leather	5,1	4,0	3,9	3,4	3,3	-5,8	-7,4	-2,6	-1,9	5,0	4,5	4,3	3,6	3,5	-1,1	-5,3	-3,3	-3,5
Paper and print	2,7	2,5	2,4	2,4	2,4	-1,7	-5,4	0,1	1,7	2,0	2,0	1,9	1,8	1,7	1,3	-3,6	-1,4	-0,8
Rubber and plastics	1,7	1,7	1,6	1,7	1,7	-0,2	-5,6	1,3	3,4	1,1	1,3	1,2	1,2	1,2	4,5	-4,9	0,5	0,1
Other manufacturing production	2,5	2,3	2,1	2,0	2,0	-2,0	-11,7	-0,8	1,7	1,9	1,9	1,9	1,8	1,8	3,0	-4,7	-0,6	-1,0
Building and construction	8,7	8,2	7,8	7,8	7,8	-1,6	-8,2	0,5	1,4	10,3	9,5	9,1	8,3	8,3	-0,3	-4,6	-1,6	0,1
Market services	29,4	30,1	30,4	31,4	31,4	0,6	-2,7	1,6	1,4	32,3	34,2	34,8	38,1	38,6	3,1	1,0	3,1	1,6
Recovery and repair	13,7	13,7	13,5	13,9	13,8	-0,4	-4,9	1,3	1,0	12,2	12,5	12,6	13,3	13,3	2,3	0,4	2,0	0,9
Lodging and catering	1,6	1,6	1,7	:	:	0,0	0,0	:	:	1,8	1,9	2,0	2,1	2,1	3,4	2,3	2,2	1,7
Transport services	3,9	4,2	4,3	:	:	1,6	-1,4	:	:	4,6	4,6	4,6	4,5	4,5	1,2	-0,6	0,2	0,4
Communications	2,0	2,1	2,1	:	:	2,1	-6,1	:	:	2,3	2,3	2,3	2,5	2,5	6,1	1,7	1,0	0,2
Credit and insurance	2,6	3,1	3,3	3,3	3,3	3,9	2,0	0,7	2,0	2,3	2,7	2,8	3,0	3,0	6,4	3,6	1,9	1,0
Other market serives	5,5	5,4	5,6	:	:	-0,8	0,0	:	:	9,2	10,3	10,6	12,8	13,2	4,7	1,4	5,8	3,3
Non-market services	16,3	18,6	19,6	20,5	20,7	3,2	2,1	1,9	2,0	20,7	20,6	21,1	21,5	21,6	1,6	1,6	1,2	0,6
Total	100,0	100,0	100,0	100,0	100,0	-0,1	-3,5	0,7	1,3	100,0	100,0	100,0	100,0	100,0	1,7	-0,8	0,8	0,3

Source : Eurostat, Commission staff

Table 28 : Development of exports and imports, 1960-82

Year	As share in GDP (at current prices)						% growth (at constant 1976 prices)		
	Exports			Imports			Export of goods	Import of goods	GDP
	Goods	Services	Total	Goods	Services	Total			
1960	15,9	1,6	17,5	13,1	2,3	15,4	:	:	:
1961	15,2	1,5	16,7	12,3	2,3	14,6	5,0	7,1	5,2
1962	14,7	1,5	16,2	12,5	2,2	14,7	4,4	12,1	4,5
1963	15,1	1,4	16,5	12,7	2,2	14,9	8,7	4,9	3,2
1964	15,2	1,5	16,7	12,8	2,4	15,2	8,2	9,3	6,7
1965	15,2	1,6	16,8	14,0	2,3	16,3	6,7	16,6	5,5
1966	16,1	1,7	17,8	13,6	2,4	16,0	10,0	1,6	2,7
1967	17,1	1,8	19,0	12,8	2,5	15,3	7,9	-2,2	0,0
1968	18,1	1,8	19,9	13,9	2,4	16,3	14,9	17,3	5,7
1969	18,6	1,8	20,3	15,1	2,4	17,5	9,5	18,0	7,4
1970	18,1	1,7	19,8	14,9	2,6	17,4	5,8	13,2	5,2
1971	17,6	2,0	19,6	14,5	2,8	17,3	4,1	8,0	3,3
1972	17,6	1,9	19,5	14,4	2,5	16,9	7,2	7,0	4,2
1973	18,9	1,9	20,8	14,6	2,5	17,1	12,6	3,0	4,5
1974	22,9	2,3	25,2	17,3	2,7	20,0	12,4	0,2	0,7
1975	21,0	2,4	23,5	17,1	2,7	19,8	-8,3	2,2	-1,6
1976	22,3	2,5	24,8	18,8	2,8	21,6	11,5	12,4	5,4
1977	22,1	2,5	24,6	18,6	2,6	21,2	4,4	3,5	3,1
1978	21,4	2,6	24,0	17,7	2,6	20,4	2,3	6,4	3,1
1979	21,7	2,5	24,2	19,7	2,7	22,4	5,6	10,3	4,1
1980	22,9	2,7	25,6	22,0	2,8	24,8	5,5	4,2	1,9
1981	25,0	3,0	28,0	22,8	3,2	26,0	7,8	-2,1	0,2
1982	:	:	:	:	:	:	3,1	-0,1	-1,0

Source : Eurostat; 1982 : Commisstion staff

Table 29 : Structure of imports and exports by production sector, 1963-80 (current prices)

Imports				
Branches	1963-70		1971-80	
	%	Pos.	%	Pos.
Food, beverage, tobacco	18,4	1	13,3	1
Production and processing of metals (iron, steel, tubes...)	16,8	2	11,5	2
Textiles and clothing	10,4	3	11,3	3
Chemical industry	8,2	4	10,8	4
Mechanical engineering	7,6	5	7,6	6
Electrical engineering	5,6	6	8,5	5
Paper, printing and publishing	4,8	7	4,2	8
Motor vehicles and engines	4,3	8	6,6	7
Extraction & preparation of metalliferous ores	3,9	9	2,5	12
Timber and wooden furniture	3,0	10	3,3	9
Manufacture of other means of transport (shipbuilding, cycles, railway, aerospace equipment,...)	2,2	11	2,8	11
Leather and skingoods	2,1	12	2,9	10
Manufacture of office machinery & dataprocessing	1,9	13	2,3	14
Manufacture of non metallic mineral products (clay, cement , plaster, glass & glassware, ceramic..)	1,9	13	2,3	14
Other manufacturing industries (jewellery, musical instruments, toys & sportgoods...)	1,8	15	1,9	18
Metal articles (founderies, boilermaking...)	1,7	16	2,4	13
Rubber and plastics	1,5	17	2,1	16
Extraction of minerals (gravel, stone, mining of potassium salt, peat...)	1,5	17	0,9	19
Man made fibres industry	1,2	19	0,8	20
Instrument engineering	1,2	19	2,0	17

Exports				
Branches	1963-70		1971-80	
	%	Pos.	%	Pos
Mechanical engineering	21,8	1	20,2	1
Motor vehicles and engines	14,3	2	14,7	2
Chemical industry	13,4	3	13,7	3
Production and processing of metals (iron, steel, tubes...)	10,7	4	9,3	5
Electrical engineering	9,8	5	10,5	4
Textiles and clothing	4,5	6	4,2	7
Metal articles (founderies, boilermaking...)	4,2	7	4,2	7
Food, beverage, tobacco	3,7	8	5,8	6
Instrument engineering	2,5	9	2,1	10
Manufacture of other means of transport (shipbuilding, cycles, railway, aerospace equipment...)	2,4	10	2,5	9
Manufacture of non metallic mineral products (clay, cement, plaster , glass & glassware, ceramic...)	2,2	11	2,0	13
Paper, printing and publishing	1,7	12	2,1	10
Rubber and plastics	1,7	13	2,1	10
Manufacture of office machinery & dataprocessing	1,6	14	1,7	14
Man made fibres industry	1,5	15	1,3	16
Other manufacturing industries (jewellery, musical instruments, toys & sportgoods...)	1,4	16	1,0	17
Timber and wooden furniture	1,3	17	1,6	15
Leather and skingoods	0,8	18	0,6	18
Extraction of minerals (gravel, stone, mining of potassium salt, peat...)	0,4	19	0,3	19
Extraction & preparation of metalliferous ores	0,1	20	0,1	20

Source : Eurostat, Commission staff

Table 30 : Balances on transfer payments and services, 1971-82

Transfer payments (unrequited transfers)

DM million

Period	Total	Private 1				Official 1					
		Total	Remittances by foreign workers 2	Maintenance payments and pensions	Other payments	Total	Indemnification	International organisations		Pensions 3	Other payments
								Total	of which European Communities		
1971	—11,497	— 7,563	— 6,450	— 852	— 250	— 3,944	— 1,820	— 1,127	— 589	— 866	— 330
1972	—14,009	— 8,434	— 7,450	— 733	— 252	— 5,575	— 1,853	— 2,173	— 1,585	— 1,122	— 428
1973	—15,592	— 9,231	— 8,200	— 809	— 221	— 6,361	— 1,882	— 2,848	— 2,266	— 1,339	— 293
1974	—16,053	— 8,969	— 7,700	— 868	— 402	— 7,084	— 1,876	— 2,603	— 1,982	— 1.738	— 865
1975	—17 879	— 9 068	— 7 400	— 939	— 729	— 8 812	— 1 930	— 4 555	— 3 724	— 2 038	— 288
1976	—17 884	— 8 546	— 6 700	— 1 036	— 812	— 9 338	— 1 695	— 4 577	— 3 546	— 3 053	— 12
1977	—18 221	— 8 065	— 6 100	— 1 148	— 818	—10 156	— 1 786	— 4 589	— 3 516	— 3 398	— 382
1978	—17 781	— 8 976	— 6 250	— 1 342	— 1 384	— 8 805	— 1 754	— 3 065	— 1 891	— 3 660	— 307
1979	—21 240	—10 042	— 6 950	— 1 695	— 1 397	—11 198	— 1 513	— 5 478	— 3 987	— 3 279	— 928
1980	—24 544	—10 995	— 7 450	— 2 079	— 1 466	—13 549	— 1 645	— 5 812	— 4 541	— 3 454	— 2 638
1981	—26 864	—11 920	— 7 900	— 2 209	— 1 811	—14 943	— 1 788	— 7 980	— 6 571	— 3 578	— 1 596
1982	—28 089	—12 209	— 7 800	— 2 249	— 2 160	—15 880	— 1 732	— 8 877	— 7 434	— 3 729	— 1 542

1 Transfer payments are classified as "Private" or "Official" according to the sector to which the German party concerned belongs. — 2 Estimated; after allowing for cash exported by foreigners travelling home. — 3 Including payments by social pension insurance funds. — Discrepancies in the totals are due to rounding.

Services

DM million

Period	Total 1	Travel	Transportation	Insurance	Investment income	Government services		Other services			
						Total	Receipts from foreign military agencies 2	Total	of which		
									Commission fees, publicity and trade fairs	Licences and patents	Personal services 3
1971	— 1,783	— 7,300	+ 4,253	+ 13	+ 760	+ 5,713	+ 6,732	— 5,202	— 2,630	— 937	— 1,248
1972	— 3,110	— 8,572	+ 4,179	— 166	+ 1,061	+ 5,747	+ 6,985	— 5,359	— 2,599	— 900	— 1,504
1973	— 5,016	—10,920	+ 4,431	— 164	+ 1,555	+ 6,070	+ 7,099	— 5,987	— 2,891	— 1,058	— 1,392
1974	— 6,051	—12,397	+ 5,880	— 208	— 173	+ 5,953	+ 7,420	— 7,106	— 3,907	— 1,022	— 1,347
1975	— 8 278	—14 701	+ 5 951	— 428	+ 2 404	+ 8 169	+ 7 836	— 7 673	— 4 281	— 1 258	— 1 389
1976	— 6 564	—14 645	+ 5 697	+ 9	+ 3 316	+ 8 235	+ 8 384	— 7 177	— 4 419	— 1 284	— 1 078
1977	—10 750	—16 380	+ 5 963	+ 197	+ 420	+ 6 275	+ 6 259	— 7 245	— 4 668	— 1 462	— 1 109
1978	— 7 358	—19 018	+ 5 745	+ 288	+ 5 079	+ 7 189	+ 8 947	— 8 851	— 4 764	— 1 485	— 1 336
1979	—12 588	—21 595	+ 6 339	+ 299	+ 3 088	+ 7 197	+ 9 190	— 7 918	— 5 228	— 1 555	— 1 746
1980	—12 898	—25 070	+ 8 110	+ 43	+ 4 223	+ 7 944	+10 290	— 8 148	— 5 554	— 1 523	— 2 565
1981	—16 380	—25 549	+ 9 210	+ 175	— 209	+ 9 951	+12 855	— 9 958	— 6 652	— 1 433	— 2 572
1982	—16 289	—25 872	+10 096	+ 241	— 2 355	+11 869	+15 043	—10 270	— 7 148	— 1 341	— 1 747

1 Excluding expenditure on freight and insurance costs included in the c.i.f. import value, but including receipts of German seagoing ships and of German insurance enterprises from services rendered in connection with trade in goods. — 2 Receipts in respect of deliveries made and services rendered. — 3 Without remuneration of foreign workers, who from the economic point of view are considered residents; wage remittances by foreign workers to their home countries are therefore shown under transfer payments. — Discrepancies in the totals are due to rounding.

Source : Bundesbank

Table 31: Collective consumption of General Government at current prices, 1970-80

	as % of General Government consumption										
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Share of GDP (%)	15,8	16,9	17,1	17,8	19,3	20,5	19,8	19,6	19,6	19,6	20,1
Gross wages and salaries	55,6	55,8	56,3	56,8	56,6	55,5	55,5	56,1	55,6	55,0	54,5
Breakdown by purpose											
General administration	11,9	11,6	11,7	11,5	11,3	10,9	10,5	10,7	10,7	10,6	10,5
Defence	18,4	18,4	17,2	16,4	15,8	15,3	15,3	14,3	14,3	14,0	13,7
Education	18,2	18,6	19,0	19,2	19,2	19,3	19,5	20,0	20,0	20,2	20,2
Medical and other health serv.	24,8	25,7	26,9	27,9	28,4	29,9	30,3	30,2	30,1	30,0	30,2
Social security	7,5	7,6	7,7	7,6	8,1	8,0	8,1	8,2	8,2	8,2	8,4
Other	19,1	18,1	17,5	17,4	16,9	16,6	16,3	16,6	16,7	17,0	17,0

Source : StBA

Table 32 : Expenditure of households by consumption category, 1960-81

		% share							% change						
		60	70(c)	74	75	79	80	81	60/70	70/73	73/74	74/75	75/79	79/80	80/81
Food	(a)	38,2	30,0	27,9	27,3	25,8	25,8	25,8	5,4	8,1	5,5	7,4	5,8	7,1	4,9
	(b)	:	:	28,9	28,6	27,7	27,9	28,1	3,1	2,3	1,4	1,8	2,6	2,8	-0,5
Clothing & foodware	(a)	12,8	10,4	10,1	10,0	9,3	9,4	8,9	5,8	9,1	6,6	8,3	5,5	7,7	-0,4
	(b)	:	:	9,9	10,0	9,1	9,1	8,8	4,7	2,4	0,0	3,4	1,2	1,8	-4,5
Rental	(a)	7,2	12,2	12,5	12,5	11,9	11,9	12,0	13,9	10,3	9,2	9,5	5,9	7,6	6,0
	(b)	:	:	12,8	12,8	12,3	12,3	12,9	5,7	4,1	4,2	3,3	2,4	2,4	3,5
Heating & other energy	(a)	3,3	3,6	4,2	4,3	5,2	5,2	5,3	8,9	13,7	14,6	12,7	12,4	6,5	7,5
	(b)	:	:	3,7	3,7	4,0	3,9	3,7	7,4	4,9	1,6	2,2	5,6	-0,3	-6,6
Other households items	(a)	14,0	12,0	12,2	11,6	11,1	11,2	11,4	6,4	11,1	5,9	4,3	6,3	7,5	7,1
	(b)	:	:	12,9	12,3	12,1	12,1	11,9	5,2	6,5	-0,3	-1,1	3,0	1,7	-2,8
Transport	(a)	8,8	13,4	12,8	13,7	15,3	14,8	14,7	12,6	9,5	4,6	17,4	10,2	3,6	4,1
	(b)	:	:	11,9	12,9	14,4	13,8	13,5	9,5	1,8	-5,1	11,9	6,2	-2,3	-3,1
Health & hygiene	(a)	4,0	4,5	4,8	4,8	4,9	4,9	5,0	9,2	11,4	11,9	9,6	7,5	9,0	5,7
	(b)	:	:	4,7	4,7	4,7	4,8	4,8	4,4	4,2	4,6	1,6	3,7	3,7	-0,2
Education &	(a)	7,0	7,2	7,5	7,4	7,3	7,1	7,1	8,3	10,8	10,2	8,2	6,9	4,7	3,9
entertainment	(b)	:	:	7,7	7,7	7,8	7,9	8,0	5,4	5,7	2,6	1,8	4,0	2,7	0,4
Miscellaneous	(a)	4,7	4,8	5,4	5,5	5,8	6,0	5,9	8,1	14,0	10,6	10,1	9,1	10,8	3,1
	(b)	:	:	5,0	5,0	5,3	5,3	5,2	7,0	5,7	-0,2	3,3	5,0	2,5	-3,4
Foreign travel	(a)	1,7	2,9	3,6	3,9	4,3	4,6	4,8	14,0	18,7	6,0	18,3	10,0	14,0	10,0
	(b)	:	:	3,6	3,7	4,1	4,2	4,2	:	14,3	-9,2	6,7	6,0	5,8	-2,1

(a) Current prices.
(b) Constant 1970 prices.
(c) New weights from 1970.
Source : StBA, Ifo

Table 33 : Indexes of volume of manufactured exports, 1960-81

1975 = 100

	D	UK	F	EC 9	USA	Developed Market Economies	D relative to Developed Market Economies
	1	2	3	4	5	6	7
1960	30	51	29	31	36	29	103
61	32	51	29	:	36	31	103
62	33	51	30	:	38	33	100
63	36	53	32	:	40	35	103
64	41	54	35	:	46	39	105
65	44	59	39	44	46	43	102
66	50	63	41	:	49	48	104
67+	55	62	44	:	52	50	110
68	64	70	48	:	58	58	110
69	73	79	56	:	63	66	111
1970	79	78	67	75	66	72	110
71	81	87	72	79	66	77	105
72	88	87	81	86	72	84	105
73	101	98	89	98	89	95	106
74	113	103	104	105	104	104	109
75	100	100	100	100	100	100	100
76	112	108	109	112	104	112	100
77	117	115	117	117	103	117	100
78	121	115	123	123	110	123	98
79	133	117	135	131	118	130	102
1980	135	118	135	133	133	137	99
81	143	:	137	136	127	140	102

Source : United Nations Monthly Bulletin of Statistics

Table 34 : Export and import shares for manufacturing industry, 1970-80

		1970	1973	1976	1979	1981(a)
Total	Exports	20,6	23,4	27,3	27,6	29,9
	Imports	15,1	16,4	19,6	21,8	23,6
of which :						
Investment goods						
	Exports	30,2	33,3	38,6	37,2	40,8
	Imports	13,5	14,2	18,0	20,0	24,1
of which :						
Mechanical engineering						
	Exports	39,4	44,5	49,7	46,2	49,2
	Imports	15,0	14,8	17,4	18,8	21,6
Consumer goods						
	Exports	14,0	17,3	21,1	22,3	24,4
	Imports	15,1	19,2	23,9	27,0	28,7

(a) January-June.
Source : SVR, 1981-82

Table 35 : Trade balance in high technology products, 1963-80

USD '000 million

		1963	1970	1980
D	EXPORTS	2,7	6,0	44,0
	IMPORTS	0,6	2,6	24,2
	BALANCE	2,1	3,4	20,0
F	EXPORTS	1,1	2,7	21,4
	IMPORTS	0,6	1,7	18,2
	BALANCE	0,5	1,0	3,2
I	EXPORTS	0,6	1,7	11,1
	IMPORTS	0,6	1,3	13,7
	BALANCE	0	0,4	-2,6
UK	EXPORTS	1,8	2,9	22,1
	IMPORTS	0,4	1,2	21,1
	BALANCE	1,4	1,7	1,0
USA	EXPORTS	3,3	7,0	47,0
	IMPORTS	1,1	6,3	47,0
	BALANCE	2,2	0,7	0
JAPAN	EXPORTS	0,5	2,9	46,0
	IMPORTS	0,3	1,0	7,7
	BALANCE	0,2	1,9	38,3

Source : Commission staff

Table 36 : Exports of selected Newly Industrialised Countries (NIC)[a] to EC by main products[b], 1965-78

	Average rate of growth of exports of NIC to EC			Share of NIC in EC imports					
	65-69	70-74	75-78	65	69	73	75	76	78
1. Toys, sports	2	5	1	9,4	10,2	13,3	10,2	12,8	13,2
2. Watches, clocks	32	48	55	0,1	0,3	1,5	4,2	9,2	12,1
3. Radio, TV, recorders	7	33	13	0,7	0,9	3,2	4,4	6,2	6,2
4. Shipbuilding	:	89	11	0,1	0,1	0,8	2,1	1,1	3,6
5. Musical instruments	16	72	16	0,2	0,1	1,0	1,4	1,7	2,7
6. Ceramics, pottery	19	32	11	0,1	0,2	0,6	0,7	1,1	1,2
7. Glas, glasproducts	19	8	7	0,1	0,2	0,3	0,3	0,4	0,4
8. Fine mechanical products	19	8	14	0,1	0,2	0,2	0,3	0,6	0,5
9. Electromechanical products	19	29	-16	0,2	0,4	0,9	0,8	1,0	0,7
10. Jewellery	3	-1	-12	1,7	1,9	1,5	1,5	1,5	1,1
11. Optic. instruments, cameras	4	33	-10	0,6	0,7	2,7	3,5	3,1	1,9

(a) Brasil, Mexico, Hong Kong, Korea, Singapore.
(b) NACE/CLIO product groups 247, 248, 342, 345, 361, 371, 373, 374, 491, 492, 494.
Source : GATT databank; industrial breakdown by NACE groups as given by Eurostat

Table 37 : Activity rates by age-groups[a]: F.R. of Germany, USA and EC, 1975-81

%

Age-groups	F.R. of Germany		USA		EC-9	
	Male	Female	Male	Female	Male	Female
1975						
14-19[b]	37,0	32,9	60,6	49,0	28,8	24,7
20-24	76,7	68,0	86,3	64,0	78,4	61,4
26-29	89,0	55,5	94,4	56,9	93,0	50,9
30-54	96,9	47,3	93,9	54,1	96,0	45,9
55-59	87,0	37,8	83,3	47,5	85,4	36,2
60-64	62,4	15,8	64,8	33,0	62,1	19,2
65-69[c]	17,2	6,6	20,8	7,8	21,9	7,5
70+	6,3	2,0			6,6	2,0
1977						
14-19[d]	32,3	28,5	48,9	41,2	26,9	23,2
20-24	76,7	67,8	86,9	66,5	78,2	63,1
25-29	87,6	58,4	94,8	61,8	92,3	54,8
30-54	96,8	48,1	93,5	57,2	93,1	47,0
55-59	86,0	38,9	82,1	47,6	84,2	38,0
60-64	53,2	13,8	62,0	32,6	56,8	17,8
65-69[c]	13,8	4,7	19,3	7,6	19,2	6,9
70+	5,4	1,8			6,1	1,9
1979						
14-19[b]	31,2	27,0	50,2	43,8	26,2	21,0
20-24	78,5	69,4	87,6	69,1	77,8	63,8
25-29	87,1	60,1	94,6	65,6	91,7	57,0
30-54	96,6	48,9	93,6	61,0	95,2	48,6
55-59	83,9	37,6	81,1	48,3	81,4	36,7
60-64	50,3	14,8	61,0	33,6	54,6	16,8
65-69[c]	11,7	4,5	19,2	7,8	15,5	5,4
70+	3,9	1,6			4,5	1,6
1981						
14-19[e]	36,5	33,3	13,8	12,1	:	:
20-24	78,7	70,1	86,1	69,7	:	:
25-29	88,6	61,4	93,9	67,8	:	:
30-54	96,4	51,2	93,7	64,5	:	:
55-59	81,5	36,6	80,5	49,0	:	:
60-64	43,6	11,3	57,8	32,3	:	:
65-69[c]	8,6	3,2	17,7	7,5	:	:
70+	3,8	1,3	:	:	:	:

(a) Labour force as a percentage of the total population of the same age and sex.
(b) 16-19 for USA.
(c) 65+ for USA.
(d) 15-19 for USA.
(e) -20 for USA.
Source : Eurostat, ILO

Table 38 : Break-down of the increase in the potential labour force into demographic ("Demo") and behavioural ("Other") components - (changes since 1979)(a)

millions

	1985			1990			2000		
	Demo	Other	Total	Demo	Other	Total	Demo	Other	Total
Male	+1,17	-0,37	+0,80	+1,55	-0,71	+0,84	+1,01	-1,25	-0,24
Female	+0,41	-0,05	+0,36	+0,37	-0,05	+0,32	-0,41	+0,15	-0,26
of which : married	+0,18	+0,13	+0,31	+0,33	+0,25	+0,58	+0,10	+0,56	+0,66
non-married	+0,23	-0,18	+0,05	+0,04	-0,30	-0,26	-0,51	-0,41	-0,92
Total	+1,58	-0,42	+1,16	+1,92	-0,76	+1,16	+0,60	-1,10	-0,50

(a) Pre-national accounts revision.

Source : DIW, 33/81, 1981

Table 39 : Potential labour force(a), 1960-90

millions

Year	Total potential labour force	Effective labour force					Unregistered unemployed
		total	independent	employees in employment		unemployed	
				total	of which : foreign workers		
1960	(26,4)	26,4	6,0	20,1	0,3	0,3	0,0
1965	(26,9)	26,9	5,1	21,6	1,1	0,1	-
1970	(26,7)	26,7	4,4	22,1	1,8	0,1	-
1973	(27,3)	27,1	4,0	22,8	2,5	0,3	(0,2)
1975	(27,2)	26,9	3,8	22,0	2,1	1,1	(0,3)
1977	(27,0)	26,5	3,5	22,0	1,9	1,0	(0,5)
1980	(27,5)	27,1	3,3	22,9	2,0	0,9	(0,4)
1982	(28,0)	27,4	3,2	22,3	1,8	1,8	(0,6)
1980	(27,0)	26,6	3,5	22,2	2,0	0,9	(0,4)
1985	(28,6)	(27,9)	3,2	:	:	:	(0,7)
1990	(28,6)	(27,9)	3,0	:	:	:	(0,7)

(a) The 1960-82 data above the line for employment and unemployment are the latest i.e. post national accounts revision estimates of the IAB. The data below the line represents the latest available estimates of the Sachverständigenrat, made before the revision of the national accounts. The data in brackets for potential labour force and unregistered unemployed are broad estimates made by the Commission services where no official estimates were available at the time of writing.

Source : IAB; SVR; Commission staff

Table 40 : Ratios showing efficiency in use of primary energy, 1960-81

	TPE(a)/GDP				TPE per capita				Oil consumption/TPE				Oil consumption/GDP			
	1960	1973	1979	1981	1960	1973	1979	1981	1960	1973	1979	1981	1960	1973	1979	1981
D	0,16	0,63	0,58	0,53	2,6	4,4	4,7	4,3	0,22	0,55	0,51	0,44	0,13	0,35	0,30	0,23
F	:	0,56	0,52	0,50(b)	:	3,5	3,8	3,7	:	0,68	0,56	0,52	:	0,38	0,29	0,26
UK	1,08	0,95	0,88	0,80	3,4	4,0	4,0	3,5	0,26	0,30	0,43	0,38	0,28	0,47	0,38	0,30
USA	1,11	1,12	1,04	0,95	5,7	8,3	8,5	7,7	0,44	0,44	0,46	0,42	0,49	0,50	0,48	0,39
JAP	0,69	0,60	0,59	0,55	1,0	3,1	3,2	3,1	0,31	0,75	0,71	0,62	0,21	0,52	0,42	0,34

D : Memorandum items :

	1960		1973		1979		1980		1981
- TPE(a) tonnes oil equivalent	148,0		264,9		285,7		270,1		258,8
- % growth in TPE between these years		79,0		7,9		-5,5		-4,2	
- % growth in real GDP between these years		75,4		15,4		1,8		0,2	

(a) Total primary energy consumption; divided by GDP it indicates the "energy intensity" of the economy.
(b) 1980 figure.
Source : IEA; Commission Staff

Table 41 : Primary energy sources in gross inland energy consumption, 1970-81

	1970		1973	1978	1979	1981	
	MTOE(b)	%	%	%	%	MTOE(b)	%
Hard coal	68,4	28,9	22,4	18,3	18,6	56	21,6
Brown coal	22,2	9,4	8,9	9,2	9,5	30	11,6
Crude oil	125,6	53,0	55,0	52,0	50,7	114	44,0
Natural gas	12,9	5,4	10,3	15,4	16,0	42	16,2
Hydro-electricity	5,7	2,4	2,1	1,7	1,7	3	1,2
Nuclear heat	1,4	0,6	1,0	3,0	3,5	14	5,4
Total(a)	237,1	100,0	100,0	100,0	100,0	259	100,0

(a) Total primary energy consumption.
(b) 1980 figure.
Source : IEA; Commission staff

Table 42 : Ratios showing degree of energy self-sufficiency, 1960-90

	Total domestic primary energy production/TPE(a)						Oil imports/Total oil demand					
	1960	1973	1979	1981	1985	1990	1960	1973	1979	1981	1985	1990
D	0,89	0,46	0,43	0,50	0,46	0,49	0,94	0,99	1,02	0,96	0,99	0,98
F	:	0,23	0,26	0,29	0,41	0,49	:	1,04	1,06	1,04	0,98	0,99
UK	0,74	0,50	0,88	1,06	1,11	1,01	1,15	1,05	0,21	-0,25	-0,30	-0,03
USA	0,92	0,84	0,81	0,88	0,87	0,87	0,18	0,39	0,48	0,39	0,42	0,45
JAP	0,62	0,12	0,13	0,16	0,21	0,25	1,07	1,07	1,06	1,02	1,05	1,07

(a) Total primary energy consumption.
(b) 1980 figure.
Source : IEA; Commission Staff

Table 43 : Energy and use by sector, 1960-90

	1960	1973	1979	1981	MTOE[a] Forecasts 1985	1990
Industry						
Oil	7,2	25,9	18,7	13,7	13,0	11,0
Solid fuels	27,0	11,5	12,0	17,8	15,0	16,0
Gas	9,5	17,1	19,7	13,4	22,0	23,0
Electricity	5,5	11,5	13,0	13,0	15,0	17,0
Other	0,3	0,9	1,1	0,6	1,0	1,0
Total	49,5	66,9	64,5	55,5	66,0	68,0
Residential/Commercial						
Oil	7,3	49,2	48,9	38,6	39,0	39,0
Solid fuels	24,9	9,9	6,0	5,2	4,0	4,0
Gas	1,7	8,2	14,2	15,2	16,0	18,0
Electricity	2,3	9,2	12,7	13,4	16,0	19,0
Other	0,5	2,3	2,9	2,9	4,0	5,0
Total	36,7	78,8	84,7	75,3	79,0	85,0
Transport						
Oil	10,0	30,5	38,2	38,7	40,0	38,0
Total	15,8	32,0	39,3	39,7	41,0	39,0
Total						
All sources	102,0	177,7	188,5	170,5	186,0	192,0
Oil	24,5	105,6	294,3	91,0	92,0	88,0
Memorandum items						
Total non-energy use	4,8	20,9	22,7	17,8	22,0	23,0
Electricity generation[b]						
Oil	0,9	8,8	5,5	3,3	4,0	3,0
Solid fuels	27,2	44,1	48,2	58,6	52,0	60,0
Gas	1,6	10,2	16,6	9,5	13,0	11,0
Nuclear	0	2,8	9,7	12,7	24,0	37,0
Hydro	3,5	3,3	3,9	4,7	4,0	4,0
Total	32,2	69,2	83,9	82,7	97,0	115,0

(a) Millions of tonnes of oil equivalent.
(b) Fuel inputs.
Source : IEA; Commission Staff

Table 44 : Forecast growth in energy consumption, 1980-90

A. Macro-economic assumptions 1980-95

	Variants A	B	C
	Av. annual growth in %		
GDP	2,7	3,4	2,2
Private consumption	1,8	2,7	1,6
Public consumption	2,0	2,5	1,7
Fixed investment	4,2	3,1	3,2
Exports	4,7	5,6	4,4
Imports	4,4	3,9	4,2
Productivity	2,9	3,3	2,4
Employment	-0,2	0,1	-0,1
	In millions		
Population 1995	57,3	58,0	60,9
Potential workforce 1995	25,8	26,7	27,4
Registered unemployed 1995	0,8	0,7	1,8

B. Projected structure of energy consumption to 1990

	1960	1970	1978	1980	1985 Variants A	B	C	1990 Variants A	B	C
Primary energy consumption	211,5	336,8	389,0	390,2	423,2	433,3	415,7	445,9	462,3	439,3
Consumption and losses in energy sector	58,9	82,5	99,8	105,8	117,8	433,3	415,7	134,9	137,8	132,0
Non-energy uses	6,9	23,9	29,7	27,4	32,3	26,5	31,5	34,2	41,7	32,8
Final consumption	145,7	230,4	259,5	257,0	273,1	277,8	267,2	276,8	282,8	274,5
of which : Industry	70,7	90,8	88,6	88,3	96,3	99,1	94,0	103,6	106,4	99,4
Transport	22,6	39,5	54,2	65,8	59,9	61,5	58,8	58,4	60,6	57,2
Households and small users	52,4	100,1	116,7	111,9	116,9	117,2	114,4	114,8	115,8	117,9
	% Share of primary energy consumption									
Consumption and losses in energy sector	27,8	24,5	25,7	27,1	27,8	27,5	28,1	30,2	29,8	30,0
Non-energy uses	3,3	7,1	7,6	7,0	7,6	8,4	7,6	7,7	9,0	7,5
Final energy consumption	69,9	68,4	66,7	65,9	64,6	64,1	64,3	62,1	61,1	62,5
	% Share of final energy consumption									
Industry	48,5	39,4	34,2	34,4	35,3	35,7	35,2	37,4	37,7	36,3
Transport	15,5	17,2	20,9	22,1	21,9	22,1	22,0	21,1	21,4	20,8
Households and small users	36,0	43,4	44,9	43,5	42,8	42,2	42,8	41,5	40,9	42,0

Source : Energy programme of the Federal Government, 1981

Table 45 : Price and income elasticities of final energy demand [a]

Short term elasticities for the total of the three main end-use sectors - Residential/commercial + Industrial + Transport

	Constant	Income	Price	Time Trend	R^2	DW
Total energy demand	5,01	0,99	-0,46	0,06 [b]	0,99	1,21
Per capita energy demand						
- no lag on price term	5,15	1,14	-0,60		0,99	1,13
- one year lag on price term	5,15	1,02	-0,66		0,99	1,28
- two year lag on price term	5,15	0,96	-0,56		0,98	1,52

Long term price elasticity energy demand for the total of three end-use sectors

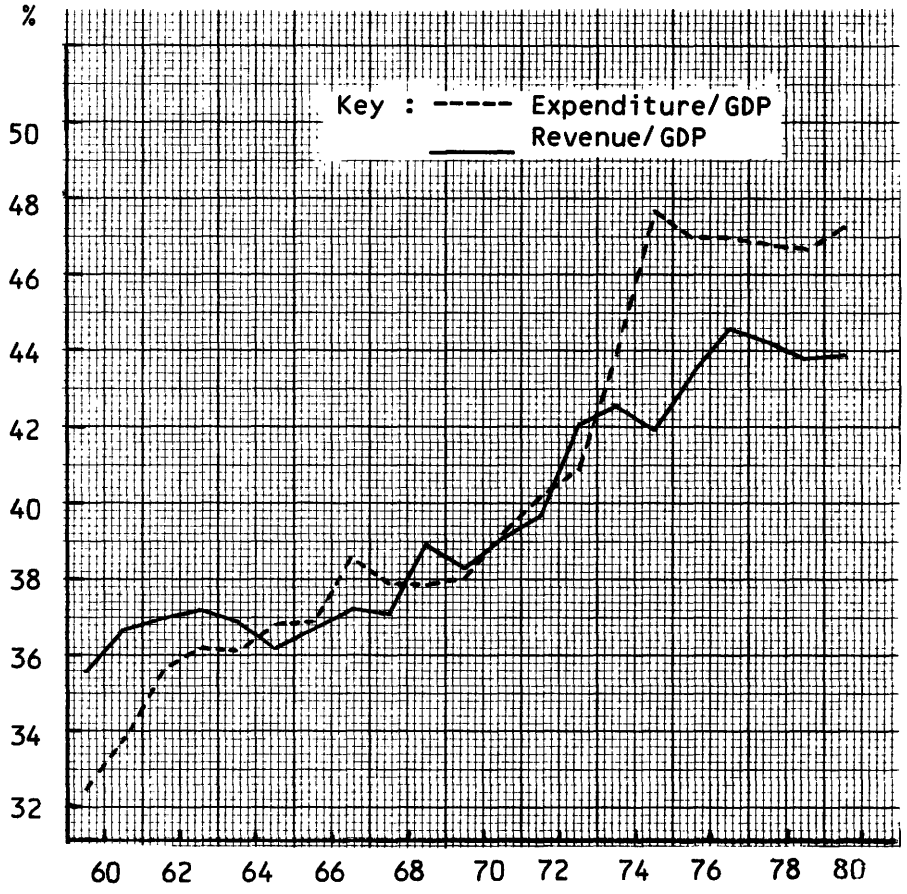
Distributed lag for price						sum of lagged coeffi-cients	R^2	DW
1	2	3	4	5	6			
-0,29	-0,24	-0,20	-0,15	-0,10	-0,05	-1,03	0,99	1,66

(a) The tables give coefficients of log linear regressions relating energy demand (total or per capita) to measures of real income and real energy prices (lagged or otherwise). These coefficients are therefore elasticities. The table distinguishes short and long term elasticities.

(b) Insignificant.

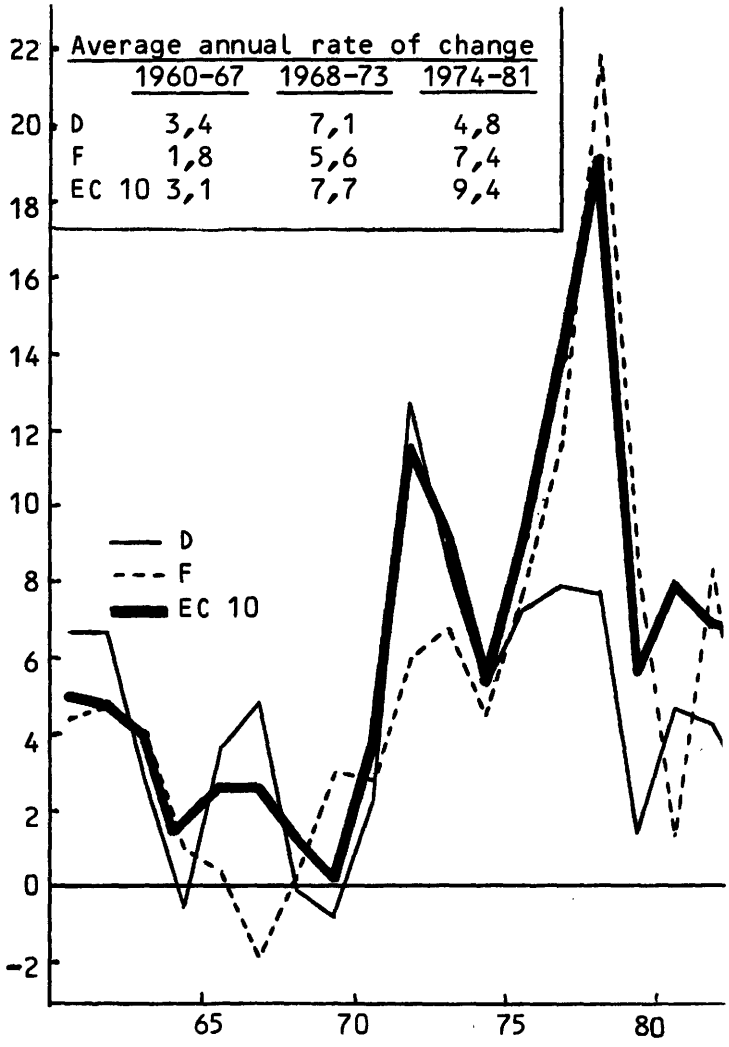
Source : OECD Annual Review of FRG : 1980

Graph 1 : General Government expenditure and revenue, 1960-80



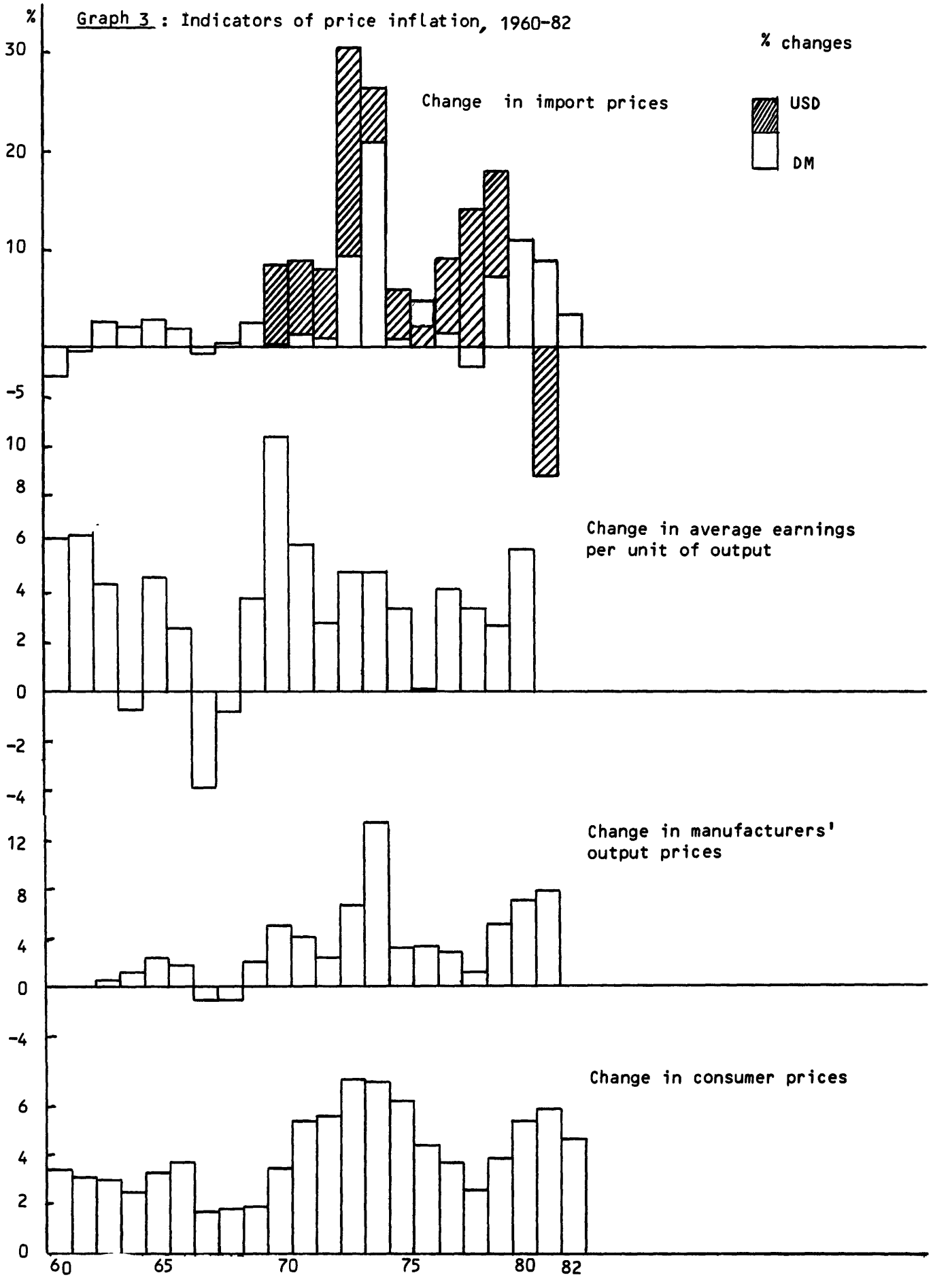
Source : SVR, 1974-75 and 1981-82

Graph 2 : Labour cost per unit of output in manufacturing industry (% changes), 1960-82



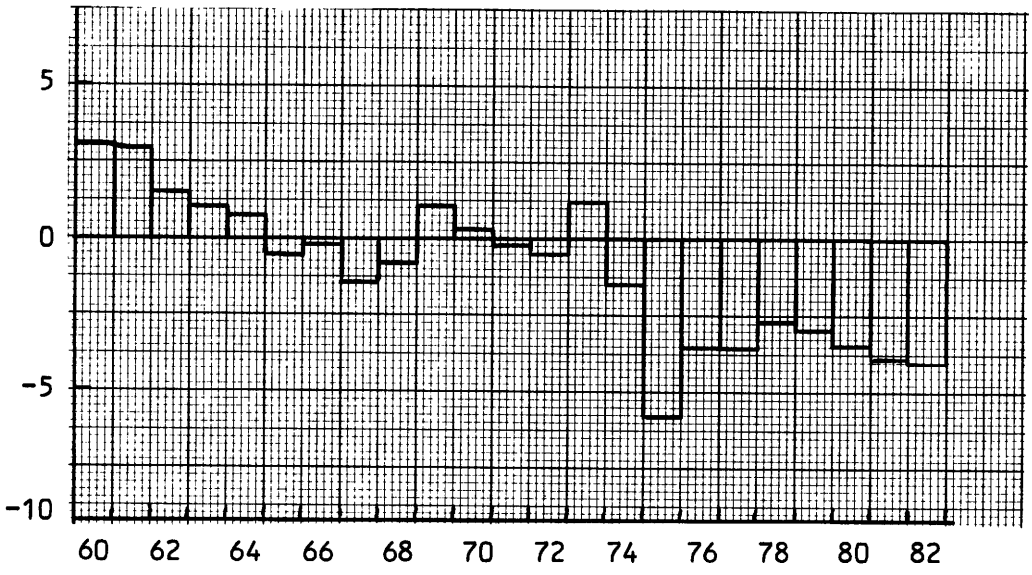
Source : Commission staff

Graph 3 : Indicators of price inflation, 1960-82

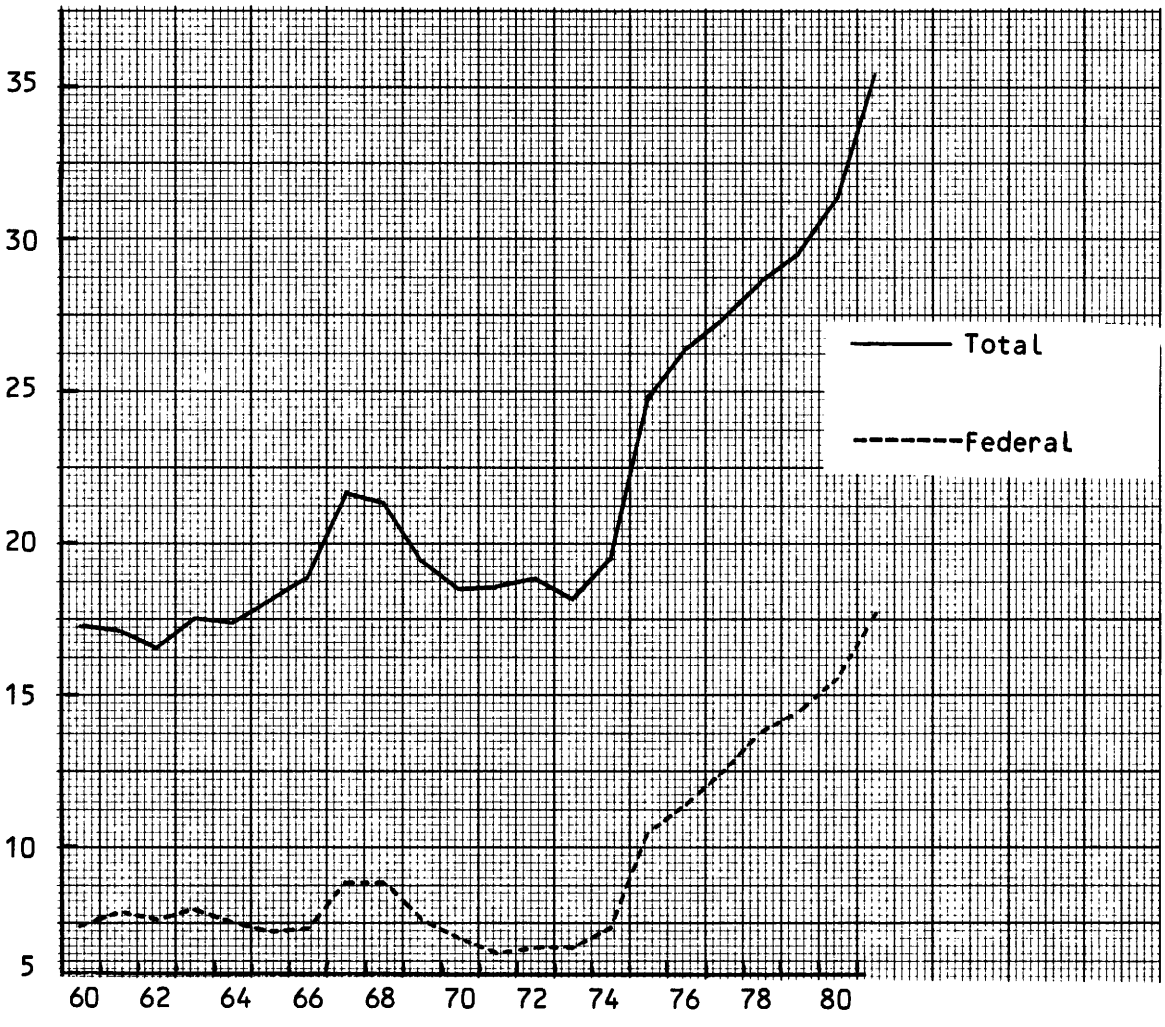


Source : SVR, 1981-82

Graph 4 : General Government deficit as a % of GDP, 1960-82

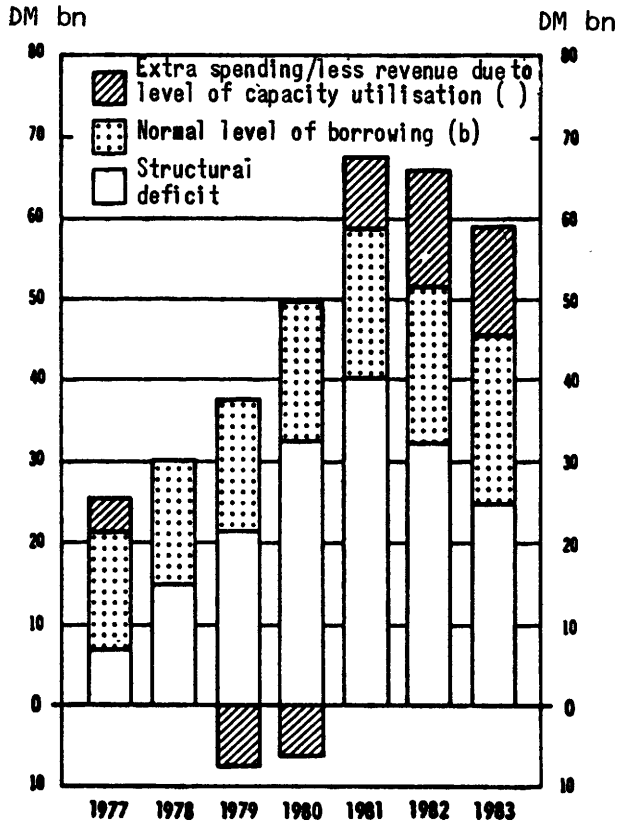


Public sector debt as a % of GDP, 1960-80



Source : SVR, 1981-82, Commission staff

Graph 5 : The development of the Government deficit[1] 1977-83



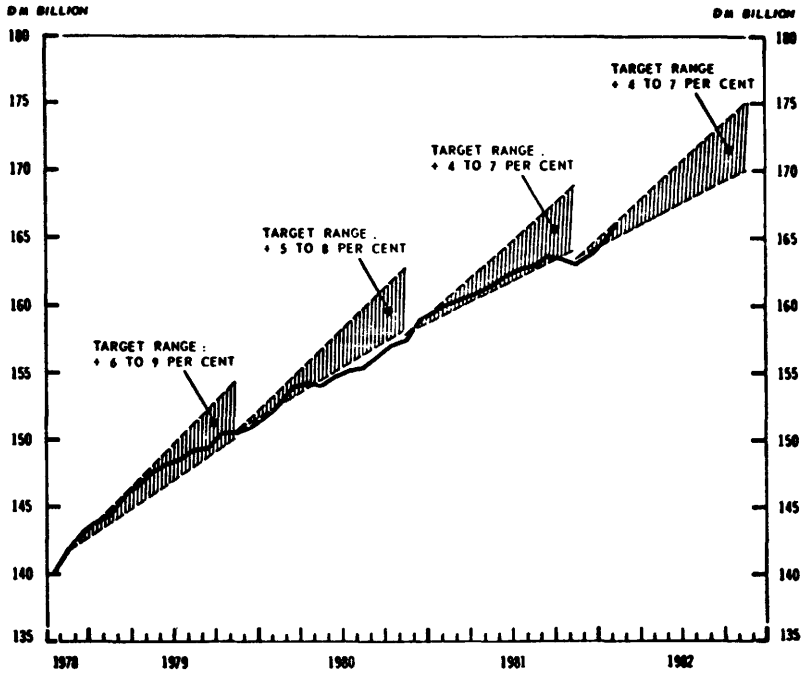
(a) Reduced by an amount equal to the exceptional level of Bundesbank profits transformed to the Government (1982:7 billion DM; 1983:9 billion DM). For 1979 and 1980 the higher levels of capacity utilisation gave rise to extra revenues.

(b) A rate of borrowing dependant upon the potential of the economy and related to the concept of the conjuncturally neutral budget. Equivalent to about 1 % of the productive potential of the economy.

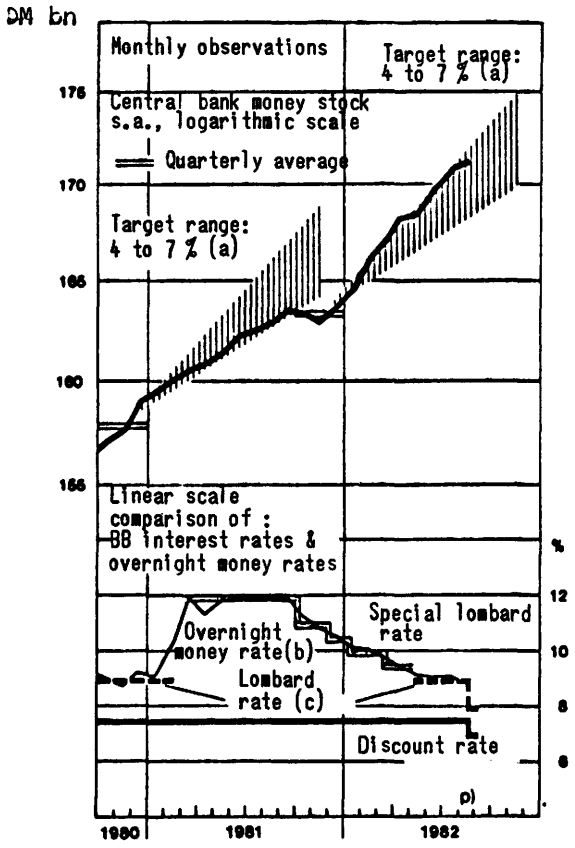
(1) Net borrowing for the total General Government budget (Bund, Lastenausgleichsfonds, ERP-Sondervermögen, Länder und Gemeinden/Gemeindeverbände) on the natural accounts basis.

Source : SVR, 1982

Graph 6 : The Central Bank Money Stock : target ranges and outturn (seasonally adjusted data), 1978-82

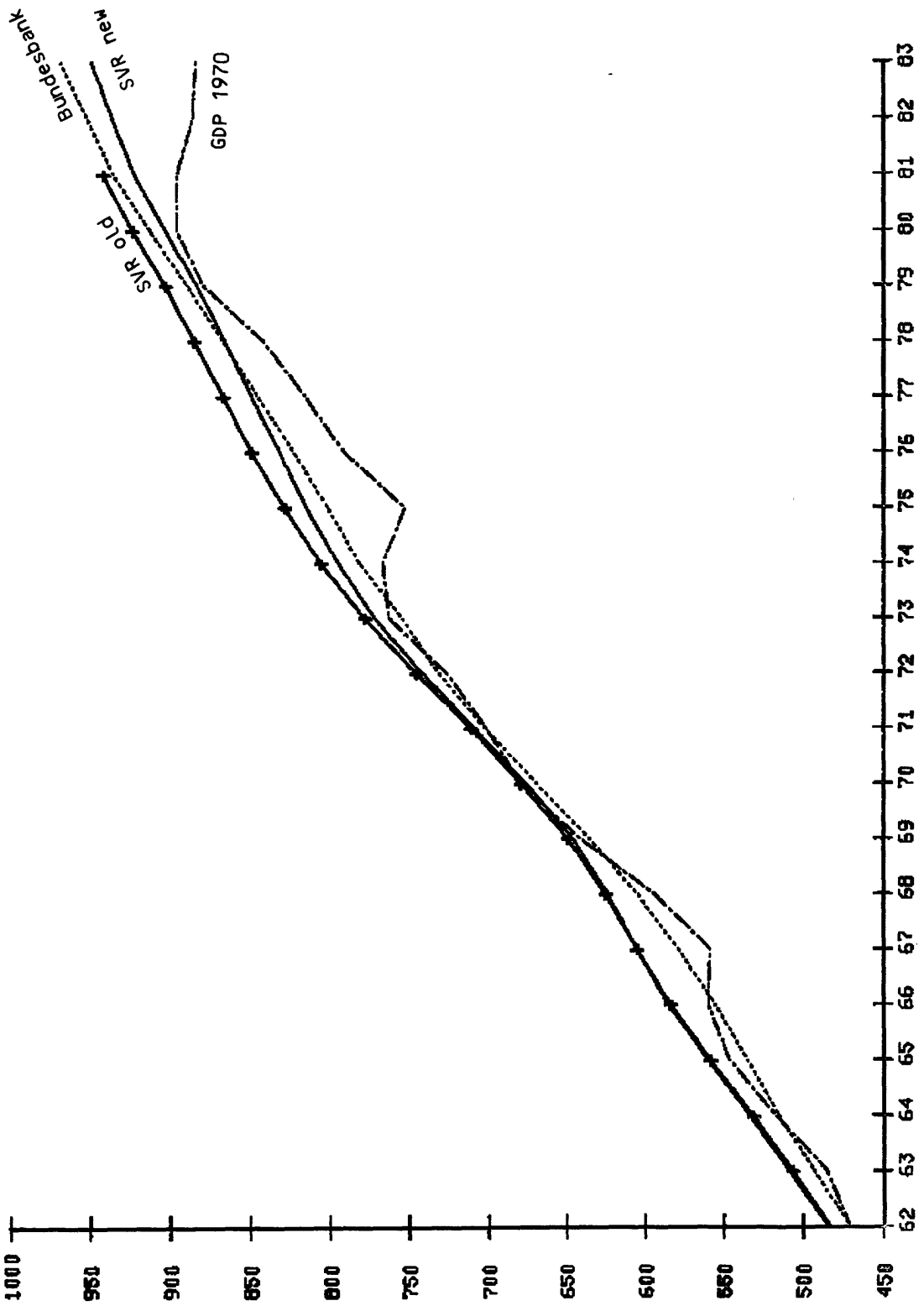


Source : Bundesbank OECD



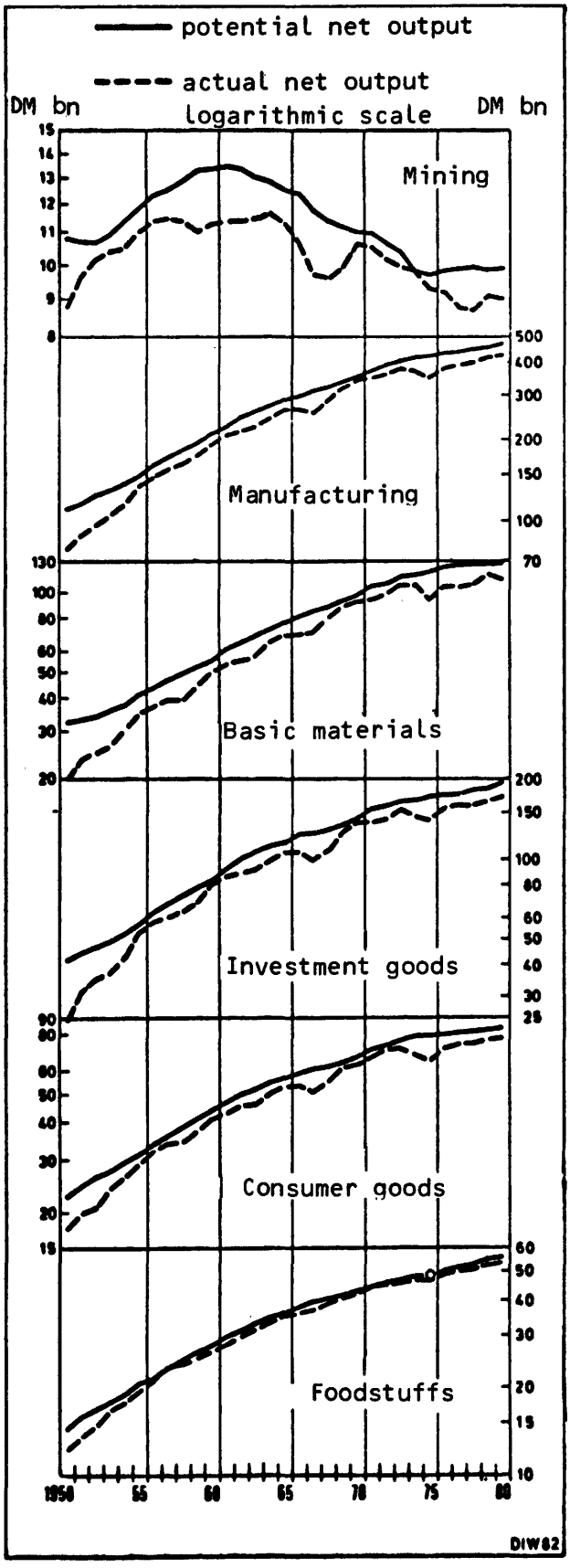
(a) Effective from 4th quarter of previous year to 4th quarter of given year.
(b) Monthly average.
(c) Lombard credit at the lombard rate was not granted to credit institutions between 20.2.81 and 6.5.82 inclusive. In this period the Bundesbank made available, to the credit institutions, in the case of need, special lombard credit at the special lombard rate.
p) Provisional.
Source : Bundesbank

Graph 7 : Productive potential : comparison of SVR and Bundesbank estimation methods at constant (1970) prices, 1962-83



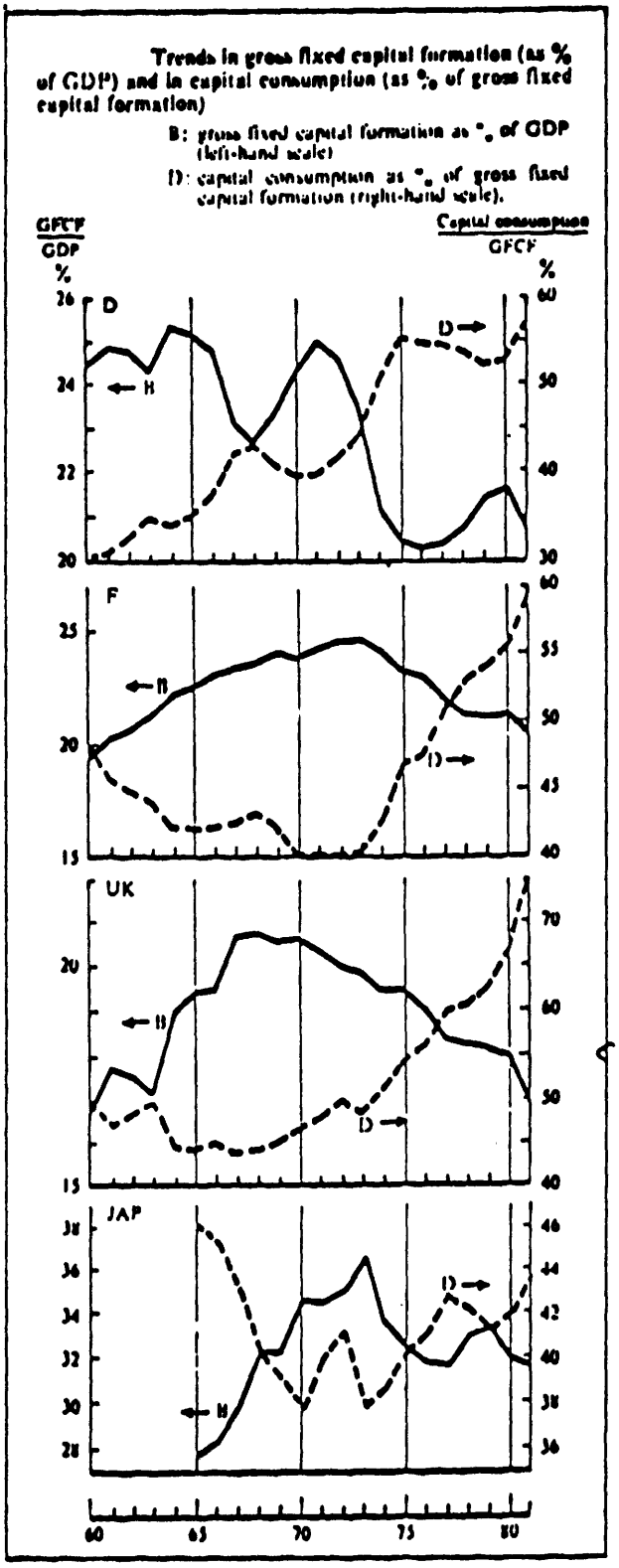
Source : SVR, Bundesbank, StBA, Commission staff

Graph 8 : Net actual and potential output in main producing industries - at 1970 prices, 1950-80



Source : DIW

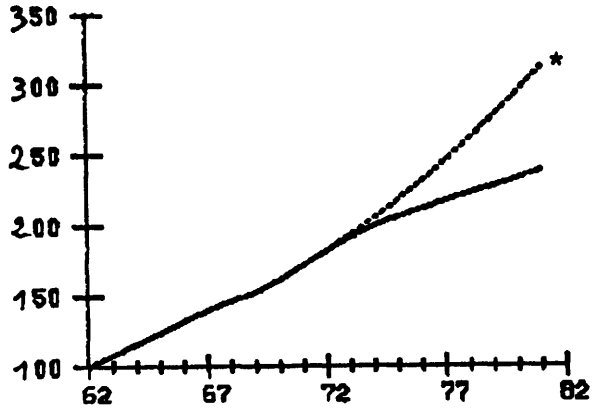
Graph 9 : Some international trends in gross fixed capital formation, 1960-80



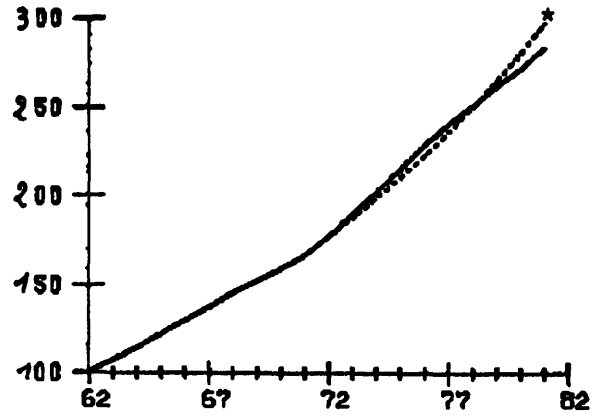
Source : Eurostat, Commission staff

Graph 10 : Actual and potentially realisable growth of the gross capital stock, 1962-82 (Index, 1962 = 100)

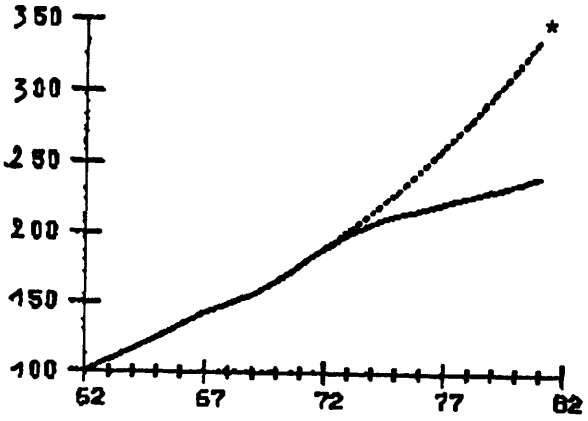
Industry



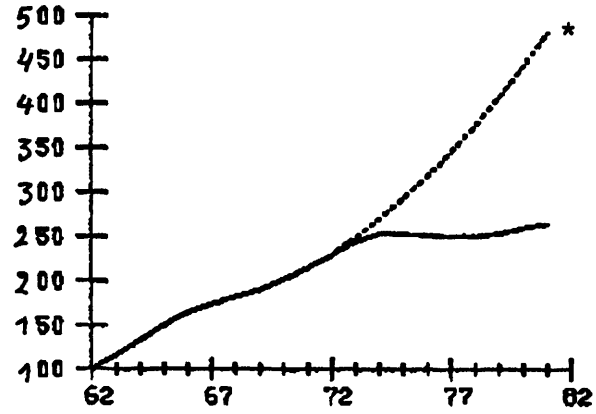
Electricity, gas and water



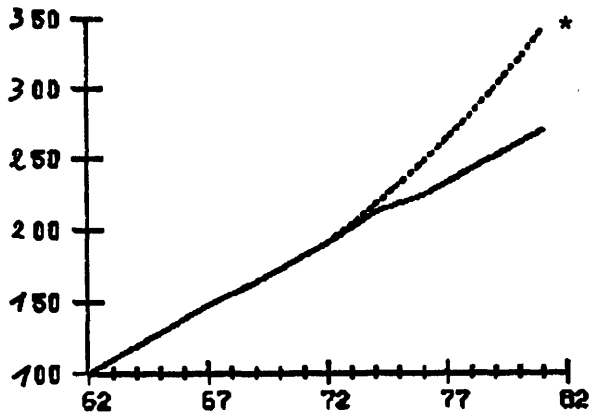
Manufacturing



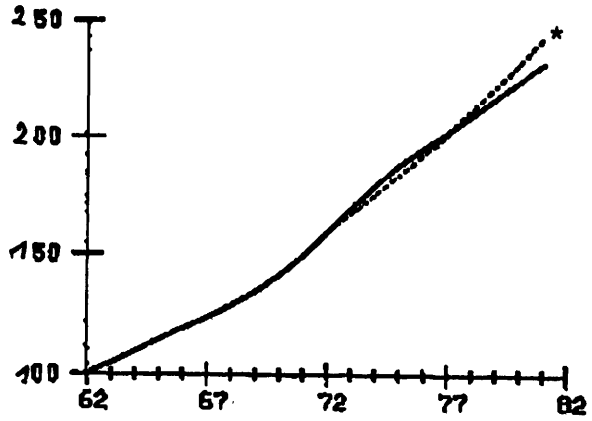
Building and construction



Distribution

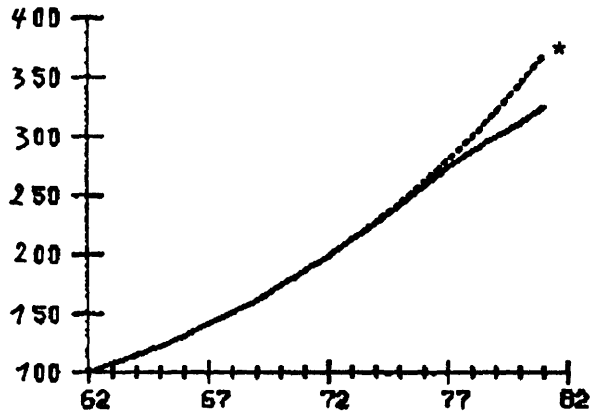


Transport

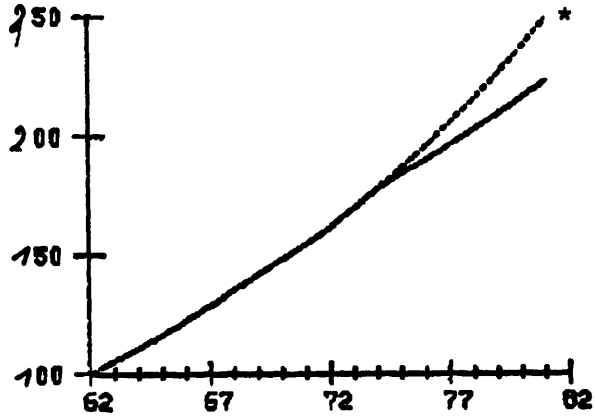


Graph 10 (continued)

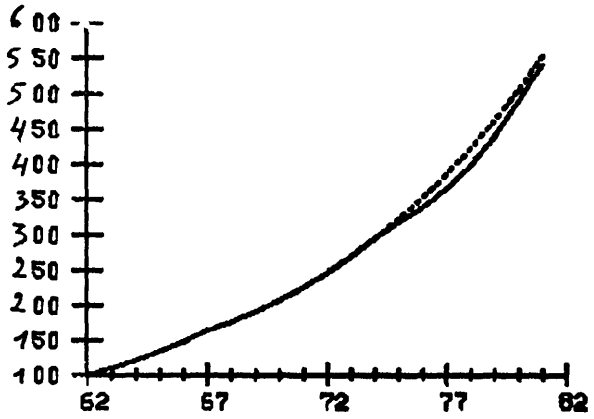
Banking and insurance



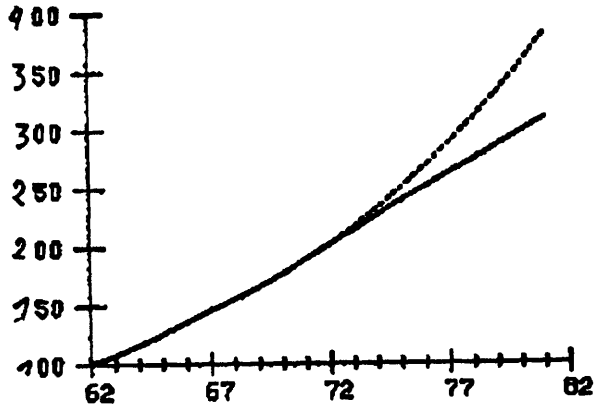
Rental



Debt services

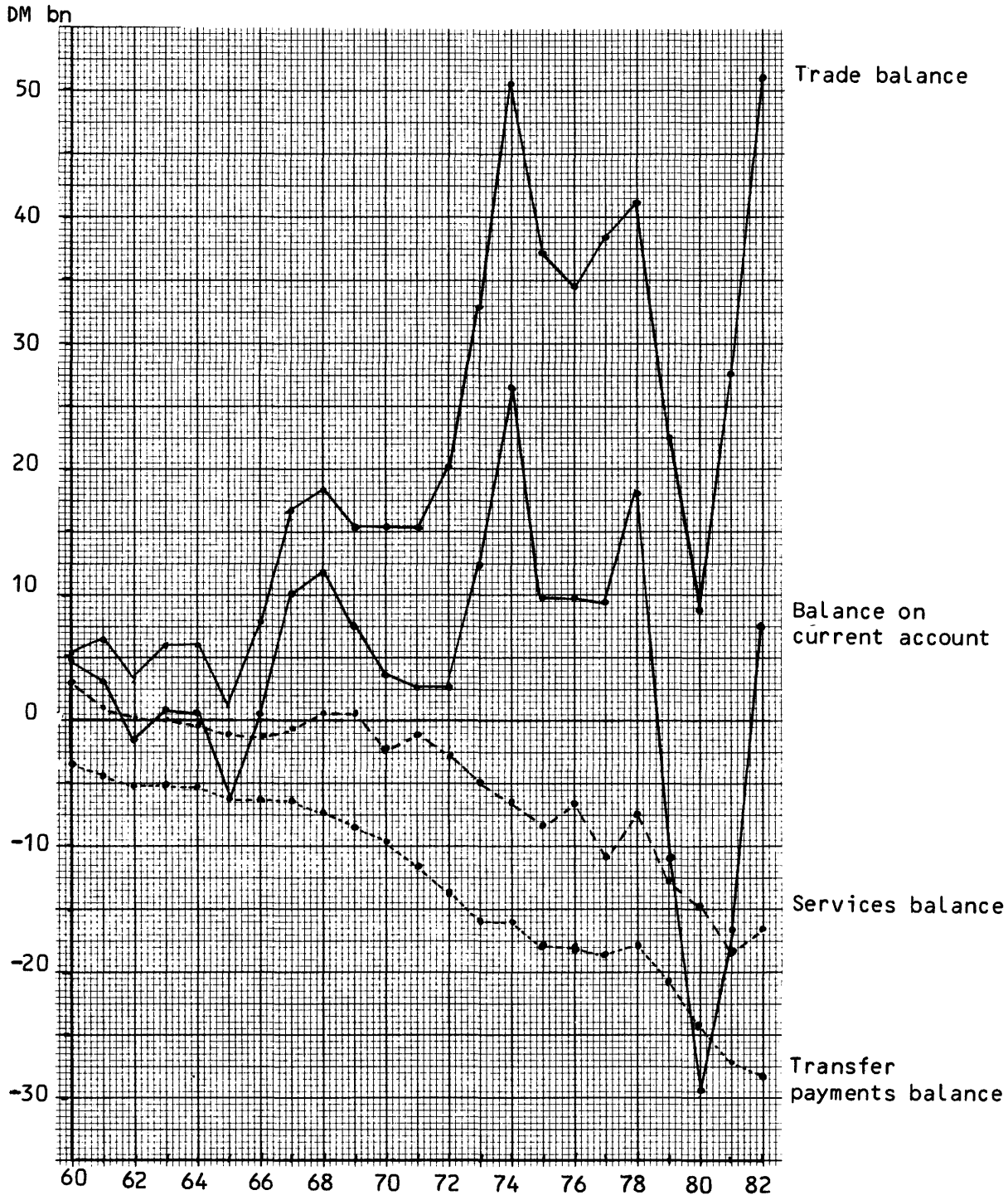


Civil engineering



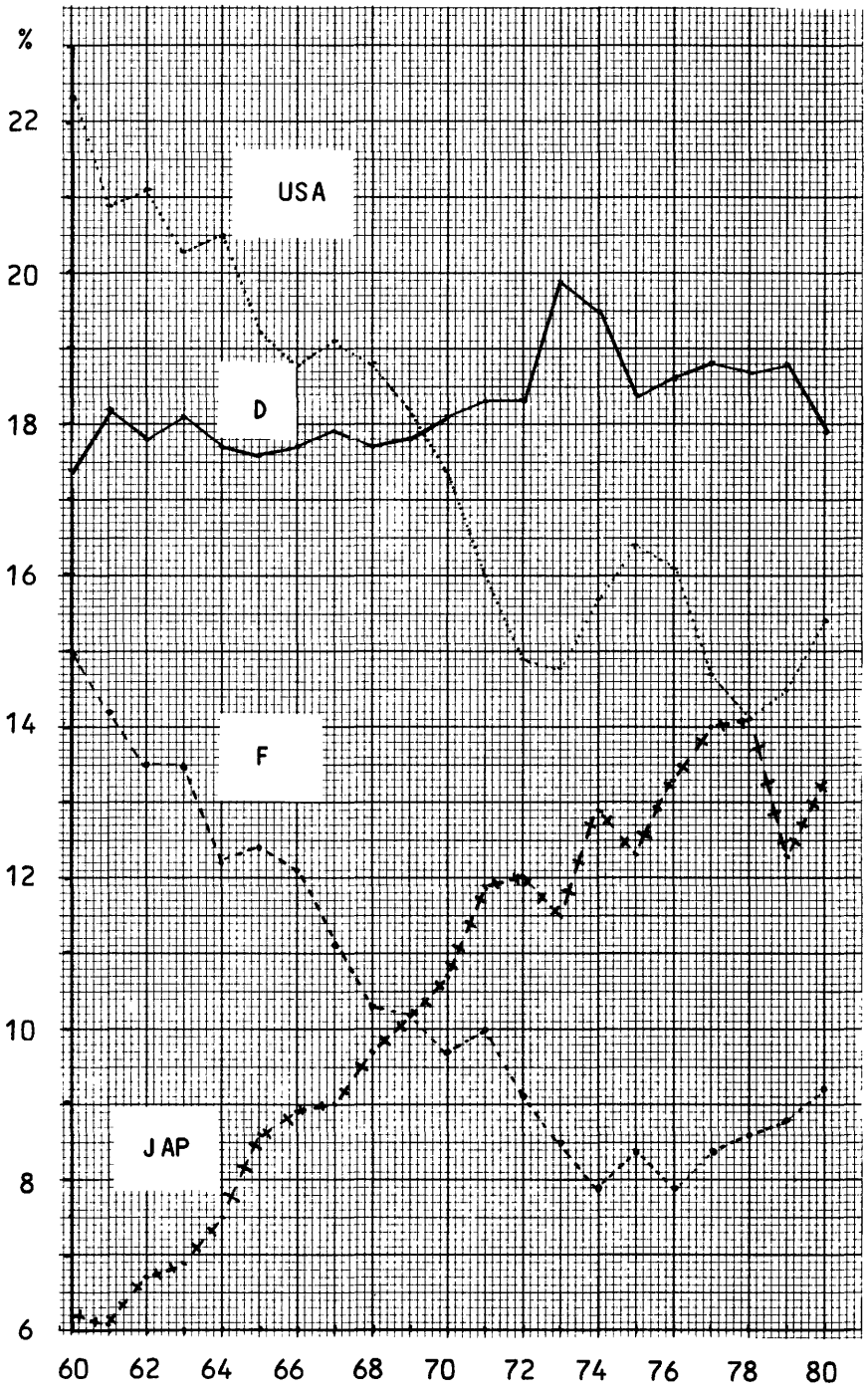
Source : StBA, Commission staff

Graph 11 : Balance on current account, 1960-82



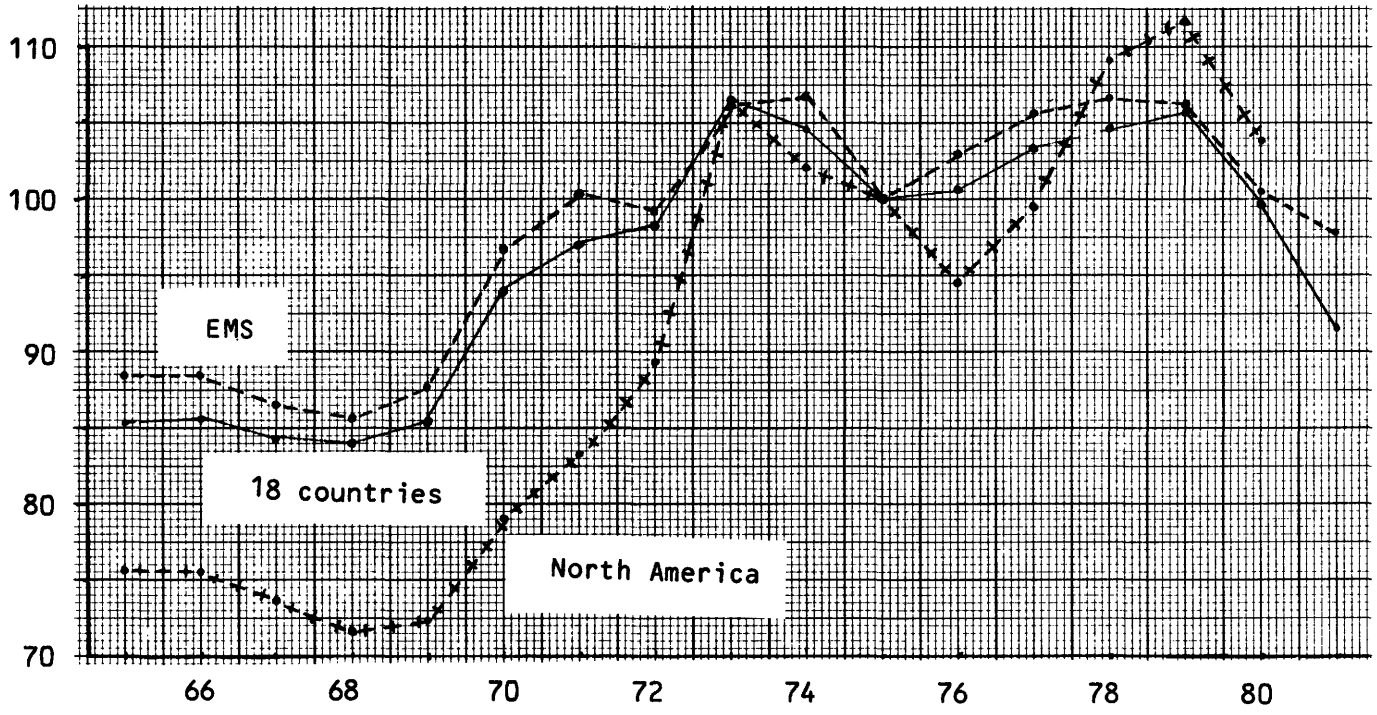
Source : Bundesbank

Graph 12 : Shares in the value of world trade in manufacturers (1), 1960-80



(1) Market economies, i.e. 83,6 % of world trade in 1985.
Source : United Nations, Monthly Bulletin of Statistics

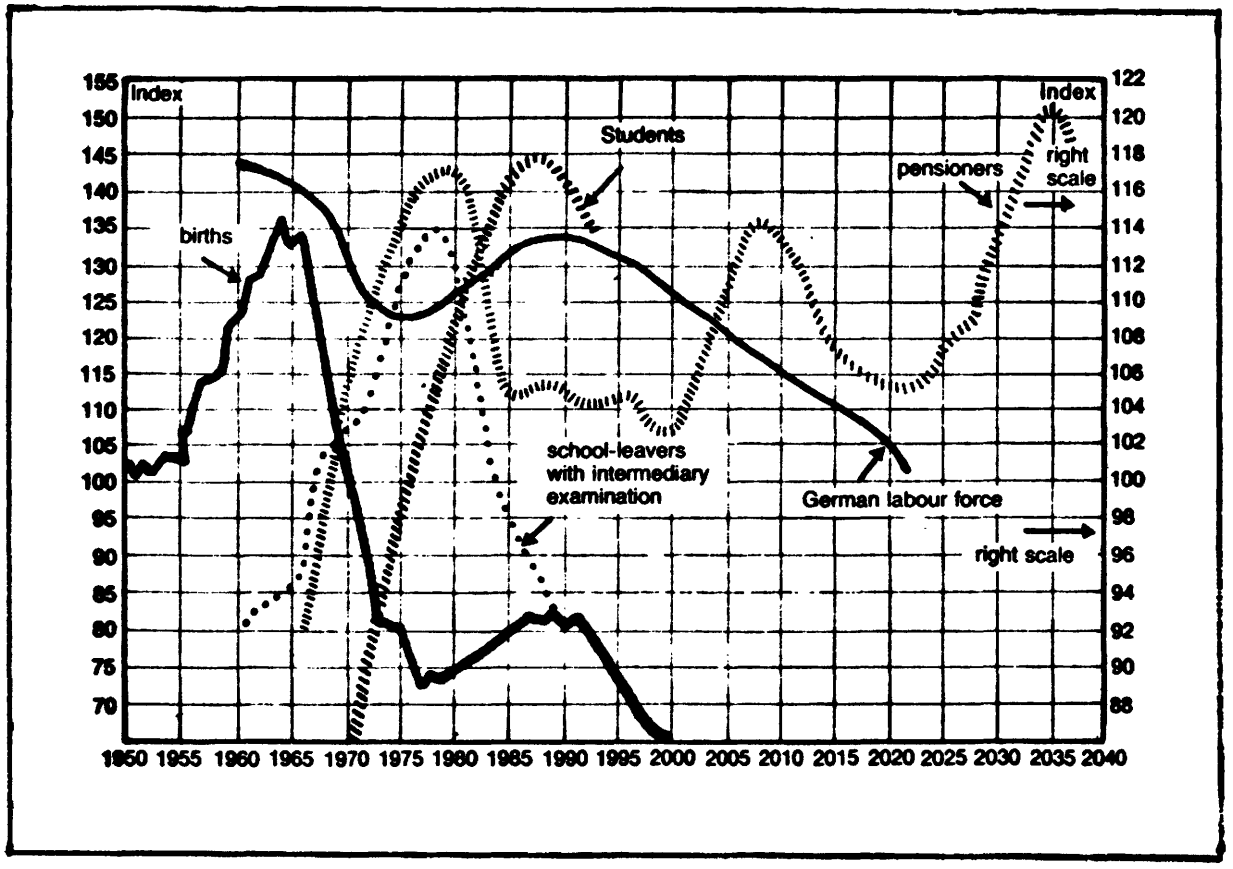
Graph 13 : Indexes of German competitiveness (1975 = 100)[1], 1965-81



(1) Based upon relative wholesale prices for manufacturing goods, corrected for exchange rate movements (export weight). A rise in the index indicates a loss of competitiveness.

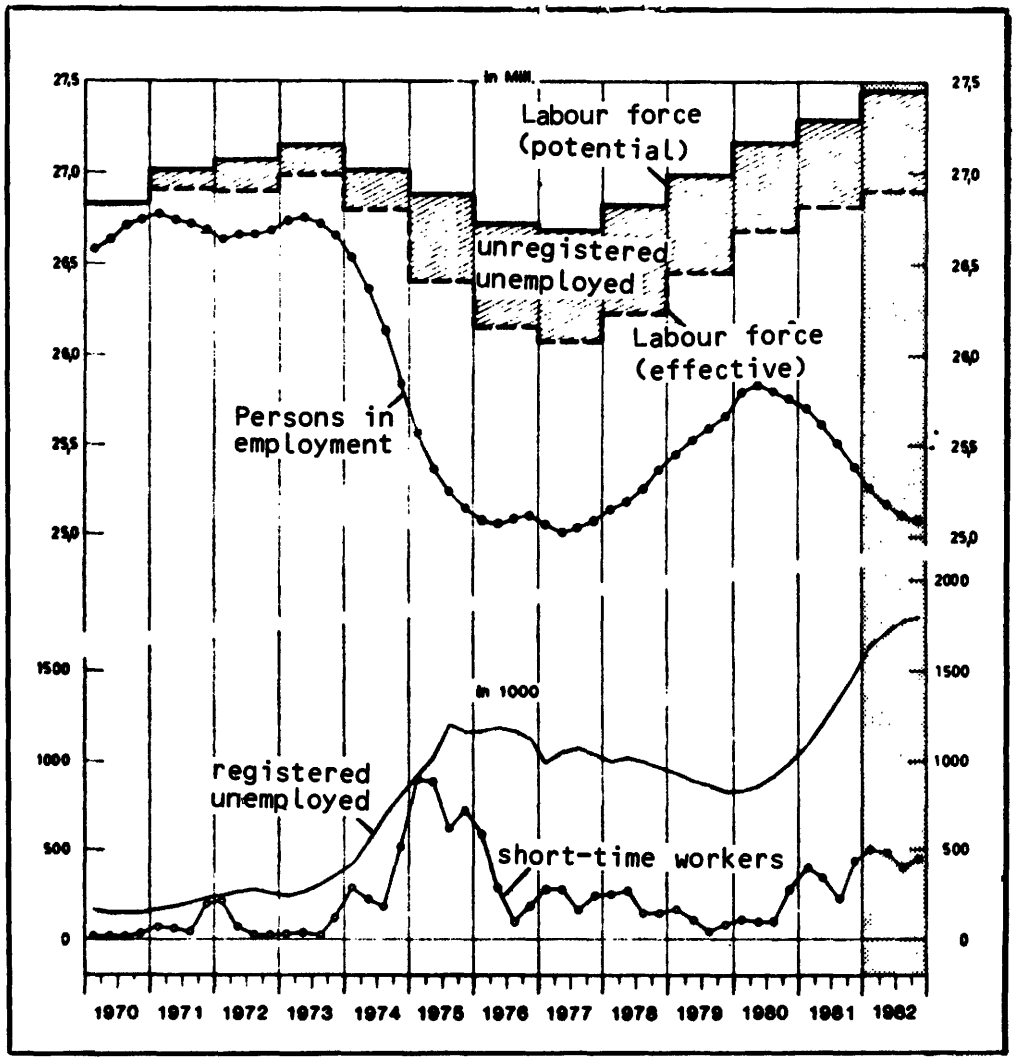
Source : Commission staff

Graph 14 : Demographic developments in population of working age, 1950-2040



Source : Batelle Institute Information 24, Frankfurt 1976.

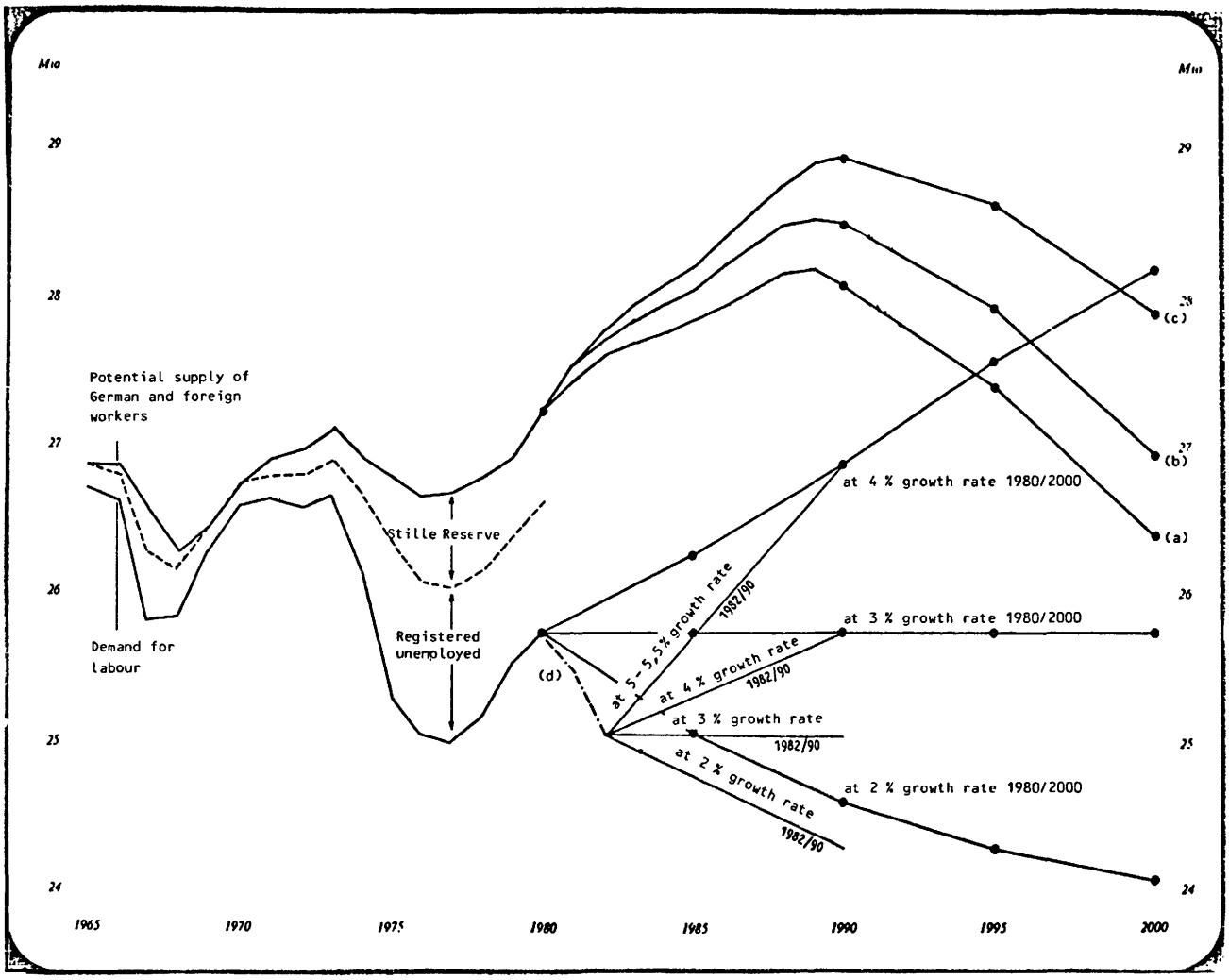
Graph 15 : Movements in the size of the labour force and in employment, 1970-82(1)



(1) Estimates pre-revision of national accounts.

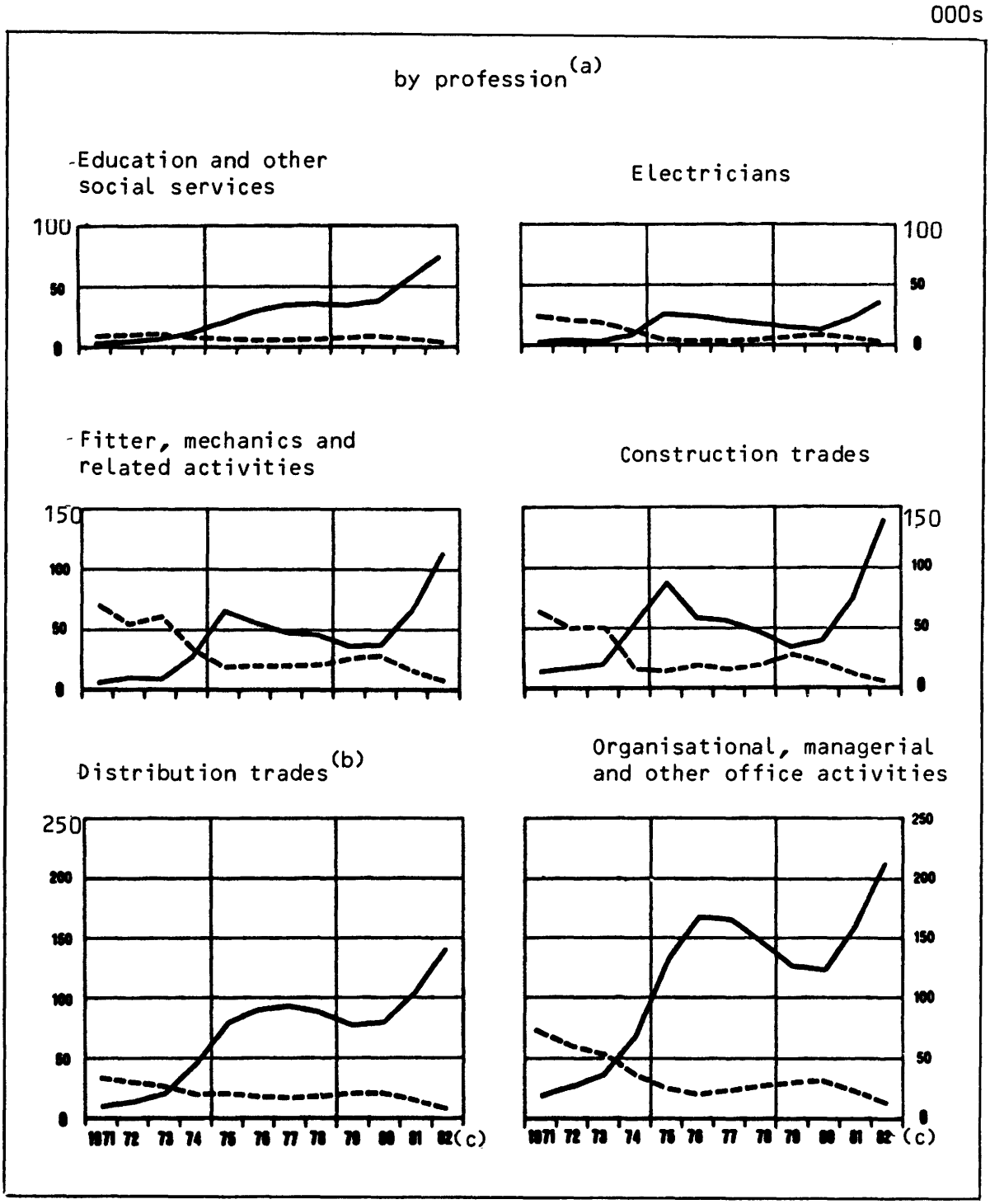
Source : RWI, Konjunkturberichte, Teil 1, 1981/4

Graph 16 : Developments in potential labour supply, 1965-2000



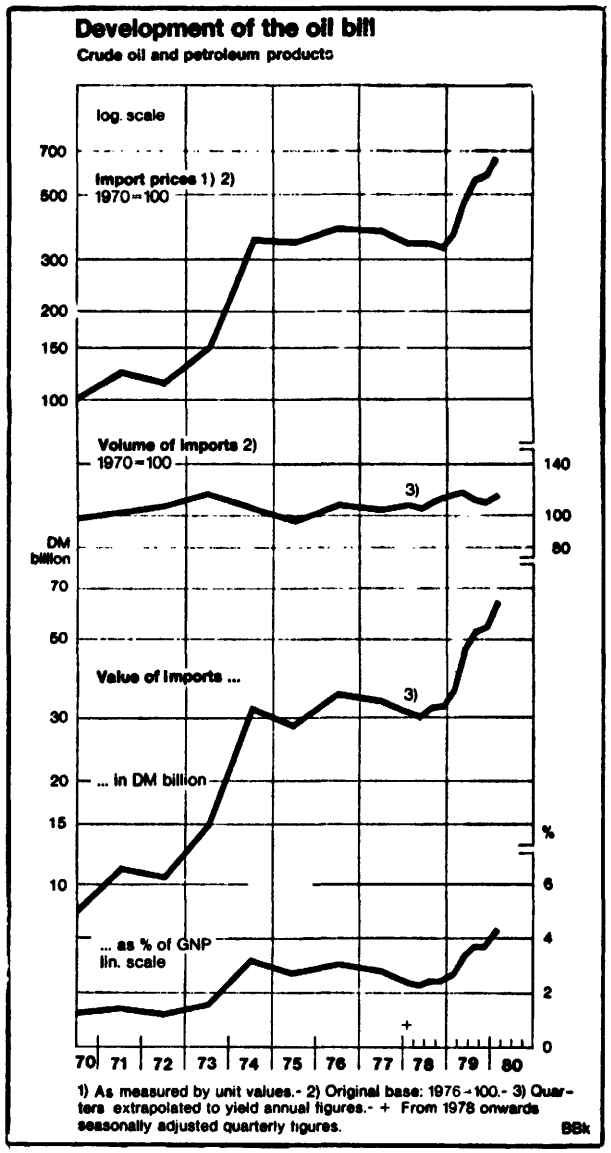
(a) Constant foreign population at 1981 level (2,5 m).
(b) Net immigration of foreigners : zero.
(c) Net immigration of foreigners : +55 000 p.a. and 30 000 p.a. in 1988-92.
(d) First provisional estimate 1982.
Source : IAB

Graph 17 : Unemployed and vacancies, 1971-82



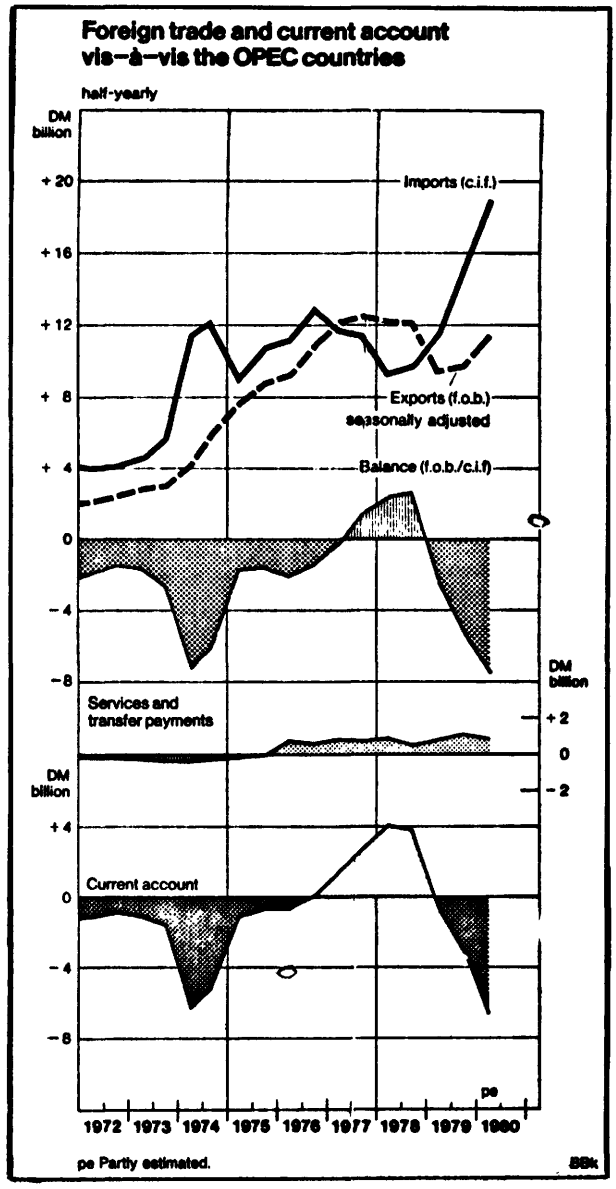
(a) Men and women.
(b) Salesmen and women, representatives, etc.
(c) Estimate.
Source : SVR, 1982-83

Graph 18 : Imports of oil, 1970-80



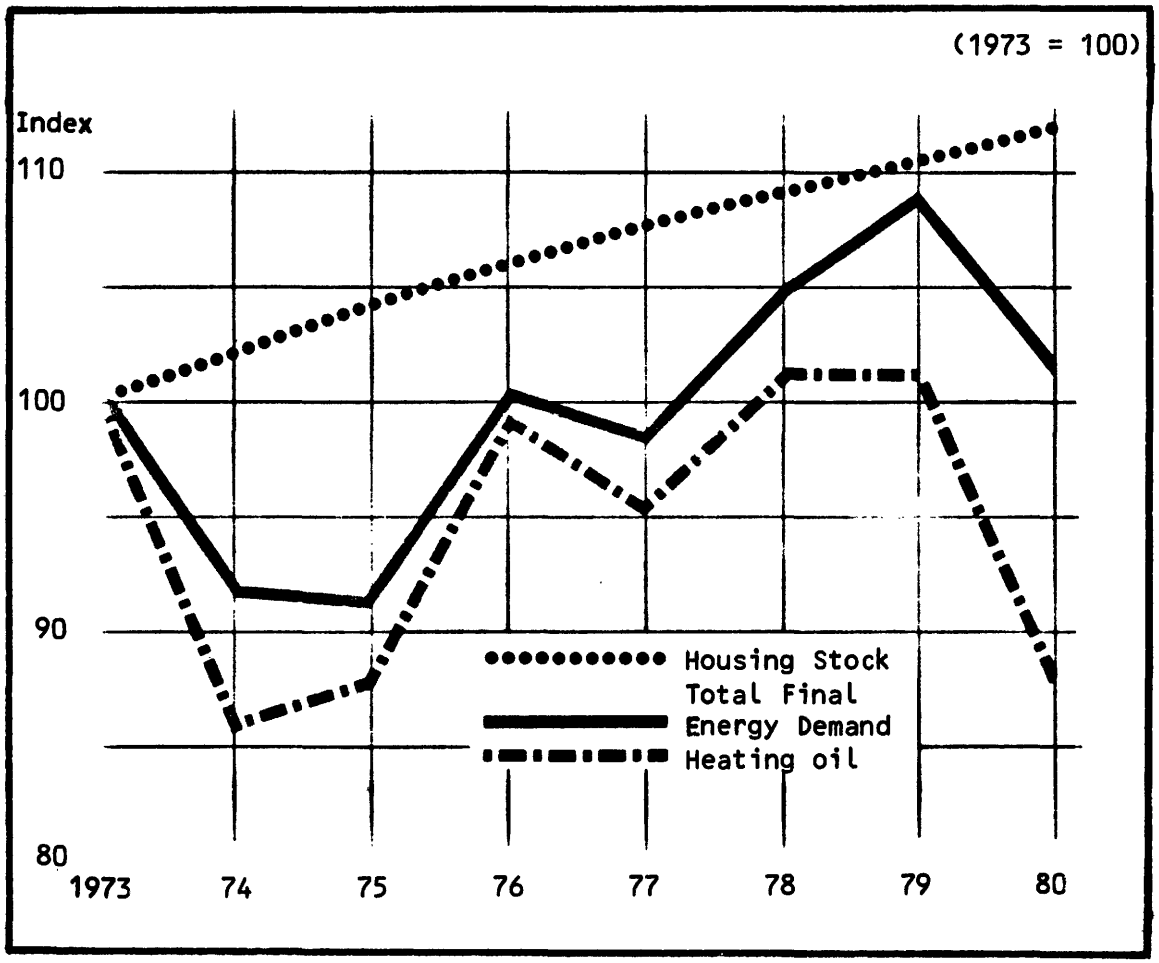
Source : Bundesbank

Graph 19 : Trade with OPEC, 1972-80



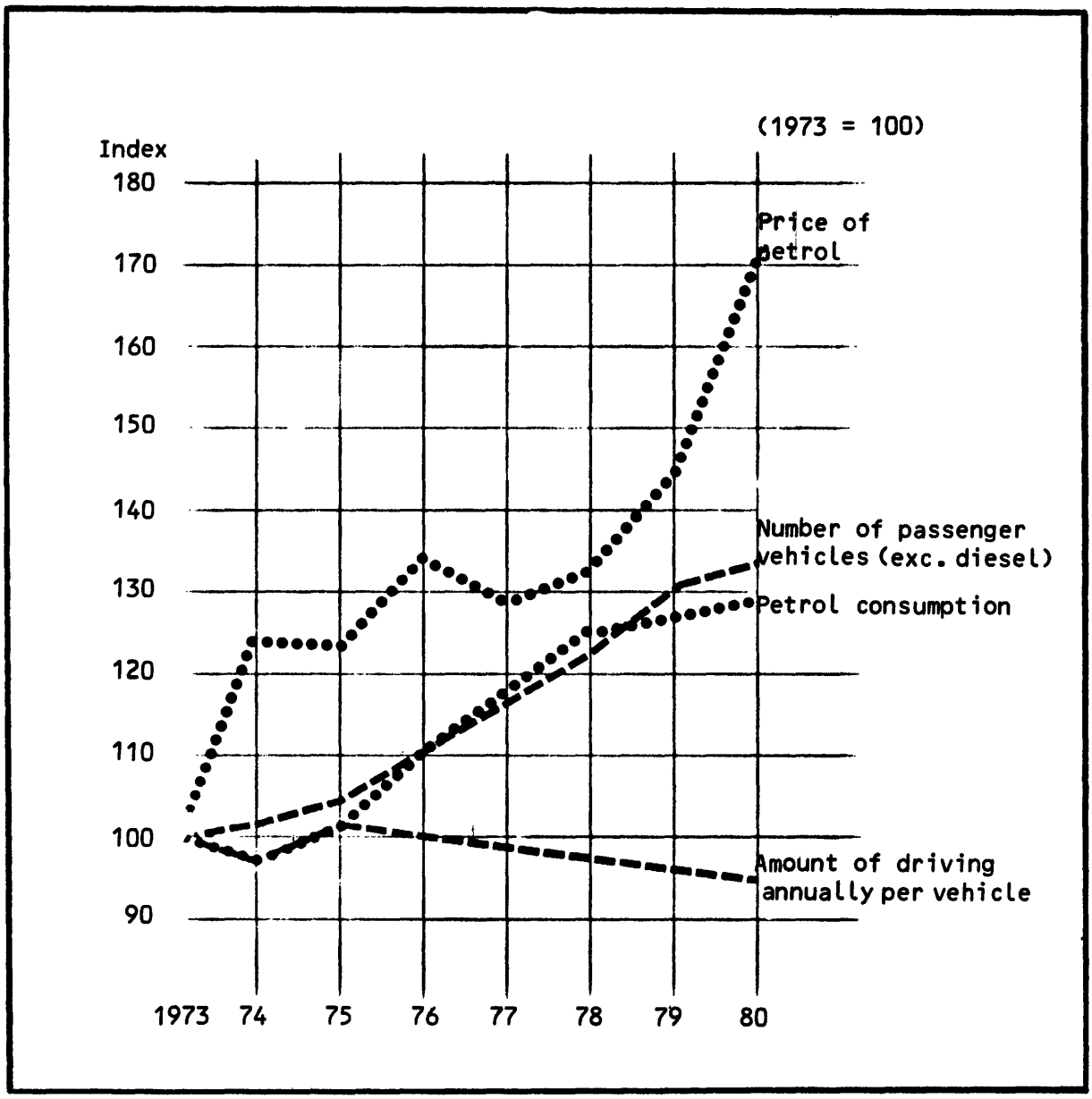
Source : Bundesbank

Graph 20 : Energy consumption in households, 1973-80



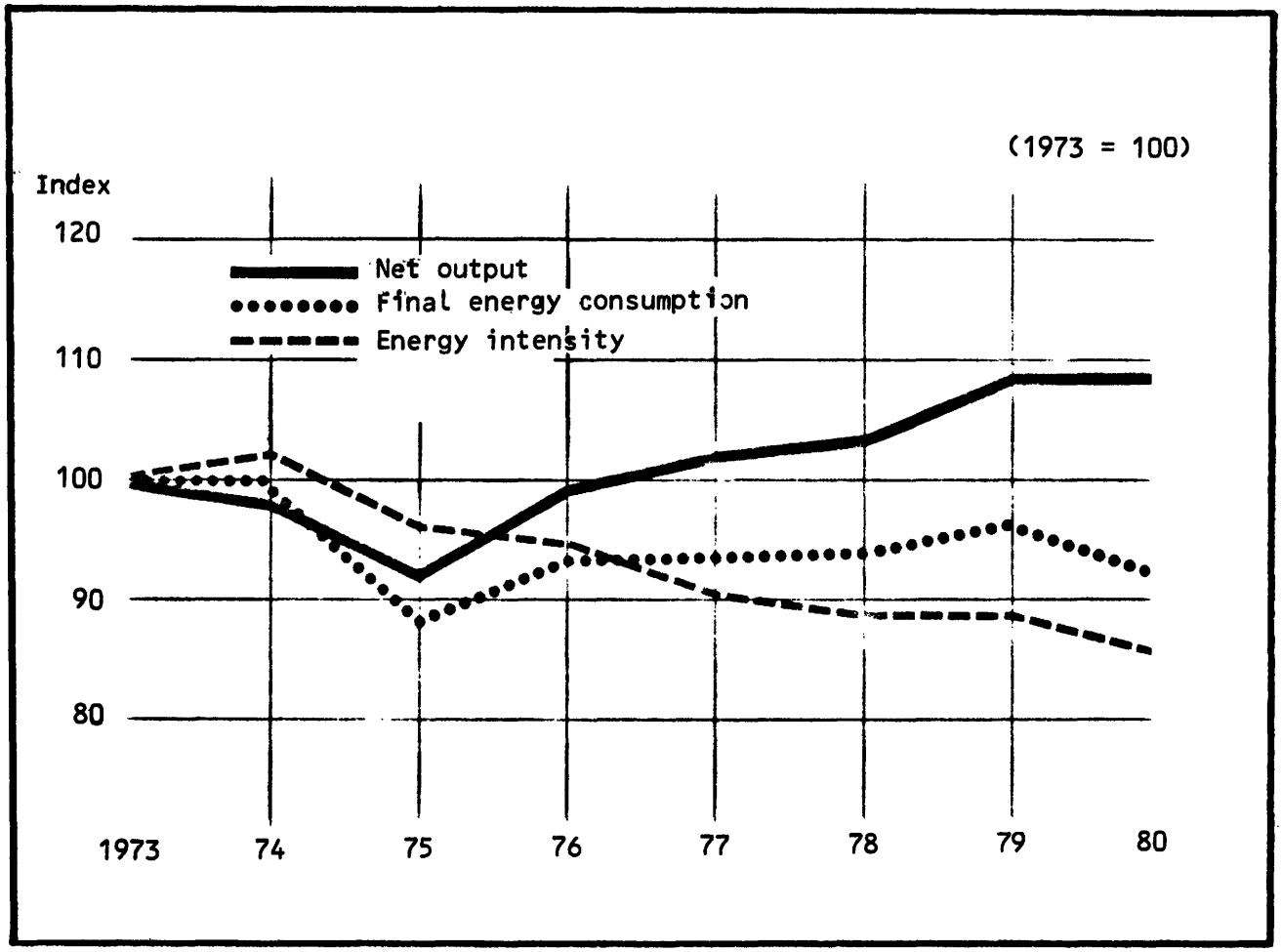
Source : Energy Programme of the Federal Government, Third Edition, 4.11.1981

Graph 21 : Energy consumption in motor transport, 1973-80



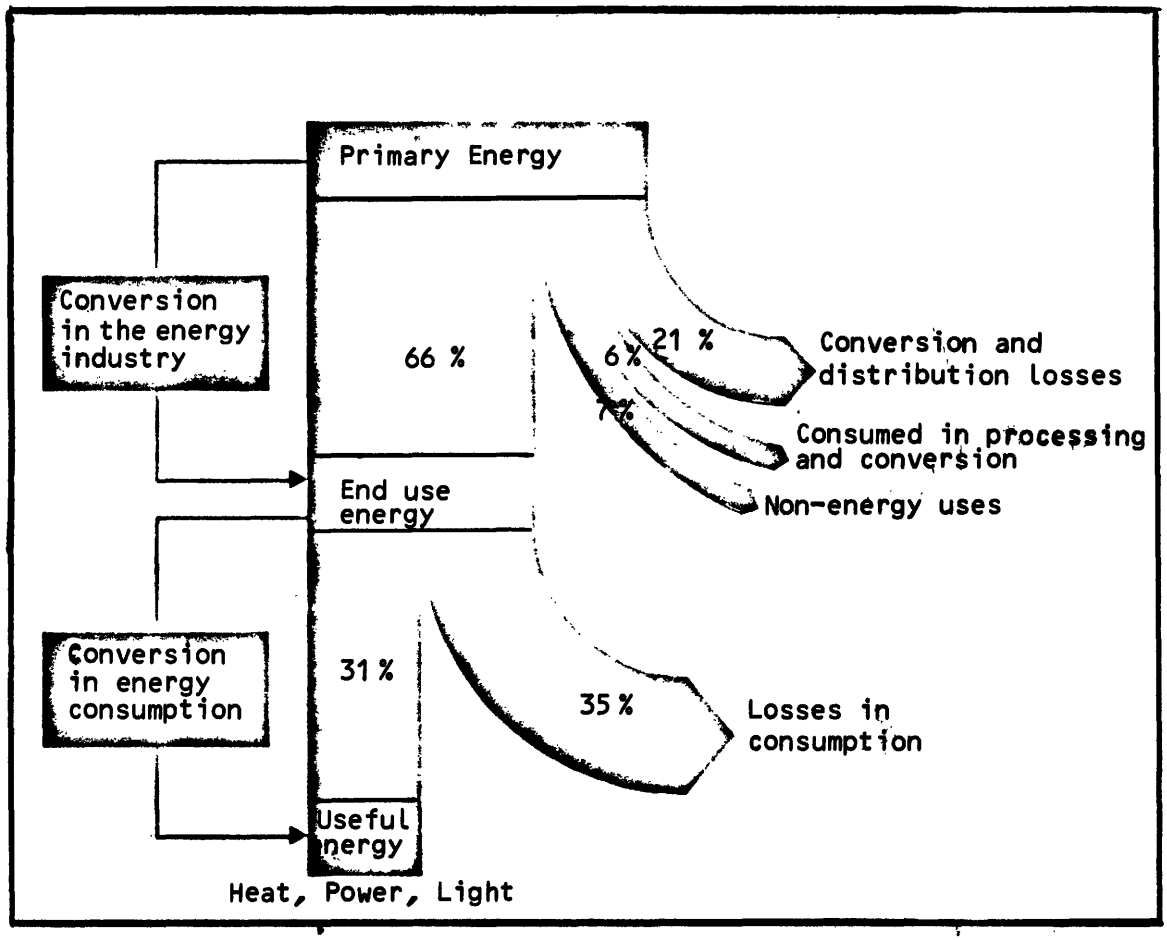
Source : Energy Programme of the Federal Government, Third Edition, 4.11.1981

Graph 22 : Energy consumption in industry, 1973-80



Source : Energy programme of the Federal Government, Third Edition, 4.11.1981

Graph 23 : Flow-chart of energy use, 1980



Source : Energy programme of the Federal Government, Third Edition, 4.11.1981

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