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Analysis of the Structural Development of the German Economy

Findings of the 1983 Structure Report

The 1983 HWWA Structure Report¹ is a continuation and extension of the structure report drawn up in 1980 (see *INTERECONOMICS* No. 3/1981, pp. 137 ff.). Against the background of the overall development of the German economy, it describes changes in the sectoral structure of output after the first and second energy price increases and analyses the impact of structural change and productivity development on employment. In addition, it examines the factors that have influenced macroeconomic developments, shifts in the structure of output and the pace of structural change. This article summarises the main findings of the Report.

More than in the past, economic policy today is faced with the problem that the number of declining industries is growing. This is not a consequence of more rapid structural change but of a lessening economic dynamic. The pace of structural change has slowed down markedly since the first oil price shock, although the German economy has had to make significant adjustments to changes in the international and national conditions – the increase in energy costs, new exchange rate relationships, the pressure of competition from Japan and the newly industrialising countries, the growing army of job-seekers.

The change in the sectoral structure of employment is partly a continuation of the structural change that was already taking place between 1960 and 1973, in other words before the rise in energy costs. The 21 industries that had already made redundant a total of 3.2 million workers between 1960 and 1973 reduced their workforce by a further 1.2 million between 1973 and 1980; most of these industries were engaged in the production of intermediate inputs and consumer goods (see Table 1). The break in trend after the oil price rise is evident in the employment statistics for a second group of industries, which had increased the number of jobs by 1 million before 1973 and reduced it again by 0.7 million

by 1980. Besides trade, this group comprises 12 branches of the secondary sector, including chemicals, electrical engineering, mechanical engineering and the construction industry. Among the 27 branches that had taken on more labour before 1973 only 14 also created new jobs between then and 1980. These included the service industries but very few branches in the secondary sector, for example motor car manufacture.

The declining economic dynamic has meant that, contrary to expectations, Germany suffered a sharper economic setback after the second oil price shock than after the first in 1973-74. Following a temporary decline, the number of unemployed more than doubled. In 1983 overall production was only 2 % higher than in 1979, the last previous year of upswing; by contrast, real gross domestic product had increased by 7.5 % in the four years from 1973 to 1977.

The lack of dynamic is manifest in the fact that too many firms react primarily in a defensive manner, in other words by consolidating, rationalising and streamlining their production programmes. Such defensive measures do admittedly save at least some of the plants and jobs that would be lost if firms adopted a passive stance towards the alterations in the domestic and external parameters, but they do nothing to replace the lost jobs, let alone create the openings that will be needed for the growing labour force.

The defensive attitude is undoubtedly due in part to the fact that in the last ten years the economic

¹ Analyse der strukturellen Entwicklung der deutschen Wirtschaft – Strukturbericht 1983, HWWA-Institut für Wirtschaftsforschung-Hamburg, Hamburg 1983

Table 1
Changes in Employment 1960-1982, by Groups of Industries^a

	Changes in thousands					Percentage shares		
	60-73	73-77	77-80	73-80	80-82 ^b	1960	1973	1980
GROUP 1								
Agric., forestry, etc.	-1657	-335	-153	-488	-53	13.7	7.2	5.5
Coal mining	-260	-9	-11	-20	(2)	1.9	0.9	0.8
Other mining	-33	-4	0	-4	(1)	0.2	0.1	0.1
Ceramics	-16	-8	0	-8	(-5)	0.3	0.3	0.2
Iron & steel	-128	-28	-13	-41	(-40)	1.8	1.3	1.2
Metal drawing	-12	-8	-7	-15	(-10)	1.2	1.1	1.1
Steel alloy constr.	-38	-10	-3	-13	(-7)	0.9	0.8	0.7
Shipbuilding	-24	-3	-10	13	(1)	0.4	0.3	0.2
Metal goods	-3	-49	-5	-54	(-22)	1.6	1.5	1.3
Wood working	-19	-10	-5	-15	(-8)	0.4	0.3	0.2
Cellulose	-20	-12	0	-12	(-1)	0.3	0.2	0.2
Leather	-104	-32	-7	-39	(-10)	1.0	0.6	0.5
Textiles	-237	-117	-24	-143	(-48)	2.8	1.8	1.3
Clothing	-104	-105	-14	-119	(-38)	2.1	1.7	1.2
Tobacco	-46	-7	-1	-8	(-1)	0.3	0.1	0.1
Railways	-81	-46	-39	-85	(-4)	2.0	1.6	1.3
Private households	-292	-18	-13	-31	(-7)	1.5	0.3	0.2
Stone and clay	-29	-53	+1	-52	(-22)	1.2	1.1	0.9
Castings	-35	-23	+5	-18	(-9)	0.7	0.5	0.5
Musical instr., etc.	-6	-4	+2	-2	(-2)	0.4	0.4	0.4
Wooden products	-101	-39	+13	-26	(-30)	1.9	1.5	1.4
	-3245	-922	-284	-1206	(-316)	36.6	23.6	19.3
GROUP 2								
Chemicals	104	-8	-10	-18	(-12)	2.0	2.4	2.4
Rubber products	20	-18	0	-18	(-8)	0.5	0.5	0.5
Non-ferrous metals	2	-13	-2	-15	(-5)	0.3	0.3	0.3
Mechanical eng.	157	-85	-7	-92	(-25)	4.0	4.5	4.2
Office equipment, EDP	44	-29	0	-29	(-4)	0.2	0.4	0.3
Printing, duplicating	24	-50	-1	-51	(-8)	0.9	1.0	0.8
Petroleum refining	9	-18	6	-12	(0)	0.2	0.2	0.2
Glass	5	-14	1	-13	(-8)	0.4	0.4	0.3
Electrical eng.	279	-110	7	-103	(-62)	3.6	4.6	4.3
Paper products	17	-28	1	-27	(- 7)	0.5	0.6	0.5
Food	15	-50	17	-33	(-18)	3.5	3.4	3.4
Civil eng.	86	-405	92	-313	(-104)	5.9	6.0	5.0
Trade	193	-89	82	-7	-131	12.7	13.0	13.3
	955	-917	186	-731	(-392)	34.7	37.3	35.5
GROUP 3								
Plastics	108	-9	31	22	(-8)	0.4	0.8	0.9
Road vehicles	321	-12	83	71	(-31)	2.2	3.3	3.7
Fitting-out trade	135	-2	57	55	(-3)	2.3	2.7	3.0
Federal Postal Admin.	97	-26	29	3	(10)	1.5	1.8	1.9
Other transport	47	-9	36	27	(-11)	2.1	2.2	2.4
Insurance	87	-8	10	2	(1)	0.4	0.8	0.8
Energy	61	2	8	10	(3)	0.7	1.0	1.0
Aircraft	22	5	10	15	(3)	0.1	0.1	0.2
Precision eng., optics	32	6	19	25	(-5)	0.7	0.8	0.9
Banking	208	20	40	60	(13)	1.0	1.8	2.0
Other services	464	171	209	380	65	7.6	9.1	10.8
Private organisations	225	49	81	130	(33)	1.5	2.3	2.8
Public authorities	1219	276	236	512	83	7.5	11.8	14.0
Social security	50	17	10	27	7	0.6	0.7	0.9
	3076	480	859	1339	(160)	28.6	39.2	45.3

^a The groups are defined as follows:

Group 1: Decrease in employment in the periods 1960-73 and 1973-80.

Group 2: Increase in employment between 1960 and 1973, decrease between 1973 and 1980.

Group 3: Increase in employment in the periods 1960-73 and 1973-80.

^b The figures in parentheses relate to workers covered by compulsory social security (relevant national accounts data are not yet available).

S o u r c e : Statistisches Bundesamt; Bundesanstalt für Arbeit; own calculations.

parameters have not been stable or have not changed steadily. The energy price shocks and the violent fluctuations in interest and exchange rates increased the risk that investments will prove to be unprofitable. These shocks and disruptions would be absorbed more quickly and with less friction, however, if the economy were more flexible.

Increasing Expenditure on Consumption

Since the beginning of the seventies the change in the sectoral structure of output has followed the textbook insofar as the share contributed by goods-producing industries has diminished and that of the services sector has increased. However, this has to be regarded as an undesirable trend to the extent that it is the result of an increasing use of national income for consumption. In view of the pressure for energy conservation, structural change and modernisation, one would have expected instead an increase in the proportion applied to investment, which would have increased the demand for equipment and building work and benefited the goods-producing sector.

Services did increase their share of private households' purchases at the expense of basic necessities, but durable consumer goods, in particular motor cars, also continued to be in high demand. There is absolutely no indication of general saturation. With real incomes growing more slowly, private households placed the formation of wealth after their desire for a rising standard of living. Moreover, an increasing part of aggregate wealth formation was used by households to purchase consumer goods on credit and to finance house-building and was therefore unavailable for productive investment. Equity capital formation also declined appreciably.

The factor limiting the expansion in private consumption continues to be the growth in real incomes. This has been held back less by the decline in employment than by the fact that the slowdown in productivity gains has restricted the scope for real wage increases. Furthermore, as the trend rise in incomes is small, short-term fluctuations are affecting income expectations more strongly than before. For this reason private consumption, and in particular purchases of consumer durables, has become more susceptible to cyclical changes; it also responds more strongly to movements in interest rates as a result of the increase in consumer debt.

The increased use of national income for consumption purposes and the expansion in the services sector were also reinforced by the rise in

government spending, which was concentrated not on improvements in public infrastructure but on services which predominantly benefit private households (health, social security, education, recreation, the arts). However, there are now signs of a slowdown in the expansion of the public sector as a result of the consolidation measures, thereby increasing the opportunities for additional activities in the private sector.

The reduction in the government budget deficits is intended to improve the climate for private investment. However, the diminution in the government's share of expenditure also induces households to purchase services in the market that are no longer provided by the state. This presupposes that firms and workers, and particularly the latter, will seek marketing and employment opportunities in the private sector rather than in the public sector to a greater extent than in the past.

Inadequate Investment Activity

The paucity of investment is apparent in the fact that, despite a pickup in capital spending, net investment in enterprises (excluding residential construction) accounted for no more than 7.5 % of aggregate value added in 1978 and 1979. In the early sixties the figure was 12 % and at the beginning of the seventies 10.5 %.

This trend decline cannot be attributed to excessively high interest rates. After the first oil shock, in fact, investment benefited from low rates of interest. Investments in Deutsche Mark became more attractive to international investors owing to the prompt and successful campaign against the inflationary impulses released by the increase in energy prices. The inflows of capital from abroad depressed interest rates. The policy aimed towards price stability initially had a restrictive effect, but in the longer run it encouraged economic growth. The stimulus to expansion came less from a reduction in real interest rates than from a lessening of investment risks, which otherwise place a constraint on investment owing to uncertainty about the duration and scale of inflation, the level of interest rates and the economic policy response. Uncertainty about future interest rates in times of inflation encourages not only the investing public to prefer short-term forms of investment; the high marketing and financial risks also tend to make enterprises opt for investments with a short payback period. Investment to open up new markets, which is particularly important for the process of structural change, is therefore shelved.

Finally, a policy geared towards stabilisation keeps to

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Table 2
Structure of Output by Sector – Percentage
Shares of Gross Value Added at Current Prices

Branches of industry	Before the energy price rises			After the first energy price rise			After the second energy price rise	
	60-64	65-69	70-73	74/75	76/77	78/79	1980	1981
PRIMARY & SECONDARY SECTORS	57.7	55.3	53.1	49.5	48.6	47.9	47.0	45.6
Production of intermediate inputs	19.4	18.3	17.6	17.6	16.8	16.6	16.1	15.6
Energy, raw materials ^a	6.6	5.9	5.6	5.8	5.8	5.9	5.9	5.7
Chemicals, plastic and rubber products	4.3	4.7	4.7	4.9	4.7	4.5	4.2	4.2
Basic metals and metal products ^b	5.9	5.1	4.8	4.6	4.2	4.0	3.9	3.7
Glass, ceramics, wood, ^c paper ^d , printing	2.7	2.6	2.5	2.3	2.2	2.2	2.1	2.0
Production of consumer goods	14.9	13.1	10.5	9.2	8.8	8.3	7.8	7.5
Agriculture	4.7	3.9	2.8	2.4	2.4	2.1	1.8	1.8
Food, tobacco	6.2	5.7	4.9	4.5	4.4	4.3	4.2	4.0
Leather, textiles and clothing	4.0	3.6	2.9	2.3	2.1	1.9	1.8	1.7
Production of durable goods and equipment	12.8	13.7	14.8	14.2	15.0	14.8	14.4	14.2
Wooden articles, precision eng., optics, musical instruments	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.0
Vehicle building	3.3	3.5	3.8	3.5	4.1	4.3	4.0	4.1
Electrical eng., EDP	3.6	4.1	4.6	4.5	4.6	4.4	4.4	4.2
Mechanical eng.	4.0	4.1	4.3	4.1	4.2	4.1	3.9	3.9
Construction	10.5	10.1	10.2	8.5	8.0	8.2	8.7	8.3
Stone, clay	1.6	1.4	1.5	1.2	1.1	1.1	1.0	0.9
Steel and alloy structures	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Civil eng.	6.1	5.7	5.7	4.5	4.0	4.2	4.6	4.3
Fitting-out trade	2.2	2.3	2.3	2.2	2.2	2.3	2.4	2.4
TERTIARY SECTOR	42.3	44.7	46.9	50.5	51.4	52.2	53.0	54.4
Trade, transport & communications ^e	16.5	15.1	14.2	13.4	13.6	13.7	13.5	13.7
Trade	11.7	10.9	10.3	9.7	9.9	10.2	9.9	10.0
Railways & shipping	2.8	2.1	1.8	1.6	1.4	1.3	1.3	1.3
Other transport	2.0	2.1	2.1	2.1	2.2	2.3	2.4	2.4
Other intermediate inputs	7.2	8.7	10.2	11.7	12.1	12.9	13.7	14.5
Fed. Postal Admin.	1.6	1.9	1.9	2.3	2.4	2.4	2.3	2.3
Banking	1.9	2.4	2.8	3.5	3.4	3.5	3.7	4.1
Other services	3.6	4.4	5.4	5.9	6.3	7.0	7.7	8.1
Services for private households	8.2	8.9	8.8	9.5	9.8	9.6	9.6	9.7
Insurance	0.7	0.8	0.8	1.0	1.1	1.1	1.0	1.0
Rented dwellings, domestic services	4.9	5.5	5.5	6.0	6.1	5.9	5.9	5.9
Catering, education and entertainment	2.6	2.7	2.5	2.4	2.6	2.6	2.7	2.8
Government-controlled services	10.4	12.0	13.7	16.0	16.0	15.9	16.2	16.5
Public authorities	7.5	8.6	9.9	11.4	11.3	11.2	11.4	11.6
Soc. sec., health care, private organisations	2.9	3.4	3.8	4.6	4.7	4.7	4.8	4.9

^a Energy sector, mining, petroleum refining, forestry.

^b Iron and steel industry, non-ferrous metallic products, castings, metal drawing and cold rolling, metal goods.

^c Lumber.

^d Pulp and paper production, paper products.

^e Excluding the Federal Post Office Administration.

S o u r c e : Statistisches Bundesamt; own calculations.

a minimum the distortions caused by the system of taxation in times of inflation. The taxation of inflation-induced book profits discriminates against the investment of capital in the form of both business and financial assets but favours investment in housing,

particularly dwellings to be let for rent. This has led to a rising proportion of overall saving being used not for the formation of productive wealth but the erection of residential property. Residential construction now accounts for 45 % of total net investment.

The Deutsche Bundesbank has endeavoured to stabilise not only the internal but also the external value of the Deutsche Mark; when the currency was appreciating between 1976 and 1978 it pursued a low interest policy while in the phase of depreciation since 1981 it has temporarily pursued a policy of high interest rates. The switch from greater-than-planned monetary expansion to greater-than-planned restriction has disrupted investment activity owing to its high sensitivity to interest-rates. The attempt to protect the externally-oriented sector of the economy from the effects of exchange rate fluctuations has shifted the burden of adjustment to the domestic sector and has impeded investment. Bearing in mind that the Bundesbank was ultimately unable to prevent exchange rate fluctuations, a steady monetary policy, in other words one oriented towards the economy's production potential, would not only have caused less friction but would have been more neutral from the structural point of view.

A lasting increase in the cost of capital, such as that caused by persistently high worldwide demand for credit, can in any case not be offset by monetary policies as this would arouse inflationary expectations that might prevent a fall in interest rates even in the short term. High interest rates must therefore be offset by reductions in other costs, namely wage costs and the burden of taxation. Technological advances that permit a more sparing use of capital, such as may be expected from the greater use of microelectronics, also lead to cost reductions. Besides, they contribute to easing the strain on the capital market.

International Competitiveness Maintained at the Expense of Real Income

The low level of investment activity led to obsolescence of production facilities and to a slowdown in productivity gains in the economy as a whole but especially in manufacturing industry. An efficient industrial sector is essential, however, if international competitiveness is to be maintained without having to reduce real incomes.

Until 1978 Germany showed itself to be highly competitive. It recorded large current account surpluses and its share of world exports increased, while the Deutsche Mark appreciated substantially. In the aftermath of the second energy price increase surpluses were again recorded after a brief period of deficits, but the real external value of the Mark decreased substantially and the country's shares of world trade dropped markedly on both the export and import sides. This time, therefore, Germany's price and cost levels had to be reduced in relation to those

elsewhere before German firms could again hold their own against foreign competition. The real depreciation of the Mark meant a reduction in real incomes and impinged upon domestic demand.

As the scope for real increases in income has narrowed in any case owing to the underlying slowdown in productivity gains, it would be a serious matter if Germany had to accept further devaluation-induced reductions in real incomes in order to remain competitive. In recent years it has become clear that this is a real possibility. The focus of the expansion in world trade has shifted from the EC markets and the USA to the OPEC countries, Japan and the newly industrialising countries in Asia. The structure of German exports has adapted to this shift in the regional balance only as far as OPEC is concerned; the small proportion of German exports going to the Far East has hardly increased.

In the past, Germany's competitive strength lay in the fact that its firms knew how to offer products and, especially, capital goods that competed with foreign supplies not so much on price as on quality. There is a danger that German firms will gradually forfeit this position. Examination of Germany's range of export products reveals that it is moving away from the profile typical of a leading industrialised country. With the exception of the automobile industry, the large exporting branches (chemicals, electrical engineering and especially mechanical engineering) have suffered larger-than-average losses in market shares. By contrast, relatively good performances have been recorded in a number of branches making intermediate products or consumer goods whose part in the international division of labour will probably decline in importance over the long term or which can sell their products only if they are heavily subsidised, such as agriculture.

Finally, the ability to develop new products and to market them at not only high but also lasting profits no longer seems to be present to the extent seen in the past. At any rate, Germany's importance as a supplier of goods with a large technology content has diminished markedly as regards both high technology and advanced technology. In the case of high technology goods, Germany's imports are now actually greater than its exports (see Table 3).

By contrast, the United States has substantially increased its world market share in high technology goods, as has Japan in the advanced technology field. Only in comparison with its European competitors, France and the United Kingdom, Germany still has a larger share of the market in technologically advanced

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Table 3
Foreign Trade in Goods with a High Technology Content (Excluding Aircraft)

	Exports				Imports			
	1972 DM billion	%	1981 DM billion	%	1972 DM billion	%	1981 DM billion	%
Federal Republic of Germany								
All goods	141.6	14.5	365.4	12.4	97.9	10.0	261.4	8.8
All tech.-intens. goods	17.5	17.7	40.6	12.2	8.9	9.0	27.6	8.3
Advanced technology	13.8	20.1	30.8	15.7	5.3	7.7	15.5	7.9
High technology	3.7	12.3	9.8	7.1	3.5	11.6	12.2	8.9
France								
All goods	74.9	7.7	213.5	7.2	67.2	6.9	189.5	6.4
All tech.-intens. goods	6.0	6.1	19.9	6.0	7.5	7.6	22.8	6.8
Advanced technology	3.8	5.5	10.7	5.5	4.6	6.7	11.3	5.8
High technology	2.2	7.3	9.2	6.7	2.9	9.6	11.5	8.4
United Kingdom								
All goods	76.3	7.8	193.4	6.5	69.3	7.1	185.5	6.3
All tech.-intens. goods	7.8	7.9	19.7	5.9	6.0	6.1	20.8	6.2
Advanced technology	4.8	7.0	10.2	5.2	3.7	5.4	11.0	5.6
High technology	3.0	9.9	9.5	6.9	2.2	7.3	9.7	7.1
USA								
All goods	137.2	14.0	429.8	14.6	142.2	14.5	408.1	13.8
All tech.-intens. goods	18.9	19.1	82.4	24.7	11.2	11.3	47.3	14.2
Advanced technology	9.8	14.3	27.8	14.2	7.8	11.4	27.6	14.1
High technology	9.1	30.1	56.6	41.2	3.4	11.3	19.7	14.3
Japan								
All goods	92.6	9.5	356.1	12.1	33.6	3.4	135.8	4.2
All tech.-intens. goods	13.6	13.8	53.7	16.1	2.8	2.8	10.9	3.3
Advanced technology	11.4	16.6	41.4	21.1	1.3	1.9	4.2	2.1
High technology	2.2	7.3	12.3	9.0	1.5	5.0	6.7	4.9
World								
All goods	977.5	100	2953.8	100	977.5	100	2953.8	100
All tech.-intens. goods	98.9	100	333.2	100	98.9	100	333.2	100
Advanced technology	68.6	100	195.9	100	68.6	100	195.9	100
High technology	30.2	100	137.4	100	30.2	100	137.4	100

Source : UN; own calculations.

products. Nonetheless, one cannot dismiss lightly the danger that Germany must now make a stronger impact on those markets where competition is based mainly on price rather than quality but which are also distorted by protectionism and subsidies. If this should increasingly be the case, Germany's competitiveness could be maintained only at the expense of further reductions of real incomes. A reversal of this trend would be required if the German enterprises were to gain a firmer foothold in the growth markets of the world and to participate in the international division of labour with real incomes rising.

False Signals through Industry-specific Subsidies

State intervention in the form of subsidies (including tax concessions and interest-subsidised loans) has increased considerably in the last twenty years to stand at about DM 80 billion in 1982. Three-quarters of this

related to just four sectors (house-building, agriculture, transportation and coal mining) which have largely been withdrawn from market control. Until now, manufacturing industry has been one of the sectors with low rates of subsidy, except in shipbuilding and aerospace. An examination of the practice and results of paying subsidies in these two industries shows that extremely strict criteria must be applied in any justification of subsidies if they are not to lead to a misallocation of labour and capital and to prevent structural change, which would prejudice sales, incomes and employment in the other branches of industry. Hence the justification of subsidies in shipbuilding on the grounds that they safeguard the country's lines of supply is hardly a valid argument, as the necessary tonnage could be built in other yards or, at worst, chartered or purchased. Nor is it convincing to point to subsidising practices abroad, as most foreign

capacity established abroad with state aid can now build more cheaply without state subsidy than German yards (Japan) or will probably soon be in a position to do so (South Korea and other developing countries). The most weighty argument in favour of subsidies at present is that there would be no substitute for the endangered jobs. If economic policy took this justification for granted, it would accord unviable firms an employment guarantee, so that the necessary structural change would not come about. Measures assisting retraining and/or resettlement as well as the establishment of new firms would be preferable to permanent subsidies for old enterprises. Justification could be found only for industry-specific, fixed-term and gradually declining subsidies that slow down the process of contraction to give established firms that might be able to convert to competitive products of their own branch of industry (above all special utility ships) or of related industries, a chance of survival. A prerequisite in this respect, however, is that the state refuse to grant continued support when the subsidies expire.

Unlike shipbuilding, the aerospace industry is one of the leading growth sectors. Nevertheless, the payment of subsidies for the construction of civil aircraft is not a model for a sensible state industrial policy. There is still a long way to go before the breakeven point is reached. The economy could not afford such subsidies on a grand scale.

Subsidies are justified in this instance by means of the infant industry argument, formerly used in support of protective import tariffs: new industries must be protected for a while against overpowering foreign competition until they can hold their own. This argument makes sense in developing countries, but a highly developed industrial country has no need to be represented in every technical sphere. Even the argument that technological advances made in aircraft manufacture may benefit other industries lacks conviction. Similar external effects also occur in other industries, such as the chemical industry, motor manufacture or mechanical engineering, which finance their research and development largely out of their own resources.

Successful Adjustment to Higher Energy Costs

While the economy's adjustment to higher energy costs was accompanied by adverse effects on the price level and distributional conflicts it can be considered remarkably successful as far as energy conservation and oil substitution are concerned. Considerable progress was made in particular by private households

and those industries that had greatly increased their energy consumption before 1973. Whereas until 1972 energy consumption had risen in step with overall output, in 1982 the amount of energy used to produce a unit of output was about 20 % less than in 1972.

Although Germany's energy prices are high by international standards, there is no evidence that the rise in energy costs has had an adverse effect on Germany's international competitiveness. The energy-intensive industries, which had already greatly reduced their specific energy consumption before the oil price rise, have even increased their export surpluses. Hence a not inconsiderable part of the energy consumed in Germany is re-exported.

For enterprises, adjustment to higher energy prices cannot entail reducing energy costs at any price; total costs are always the deciding factor. This explains why commercial road transport, which is an energy-intensive industry and for technical reasons has been able to reduce its specific energy consumption only marginally, is nevertheless one of the expanding sectors. The increased utilisation of transport services enabled a more intensive division of labour at home and abroad as well as an increasing product differentiation. This led to productivity gains which more than offset the cost increases resulting from the above-average price rises for transport services.

Inadequate Adjustment in the Labour Market

Contrary to the widely-held opinion, the employment problems are not due to accelerating job losses as a result of rationalisation. The so-called decoupling supposition, whereby even rapid economic growth will not increase the demand for labour because of the productivity reserves available and the rationalisation measures, is disproved by the declining trend in productivity gains. There are clear indications that employment now increases faster than before when production rises and contracts less when output stagnates. The widespread view that employment has fared worse in industries with large productivity gains than in those with small gains is also incorrect. The employment problems stem mainly from the lack of dynamic in the economy. Even growth of 2 to 2.5 % today would increase the demand for labour by about as much as economic growth of 4 to 4.5 % in the past. The only trouble is that the modest rate of growth is more difficult to achieve today than the higher one was previously.

It is true that in comparison with other countries Germany has shown better productivity gains since

Table 4
International Comparison of Changes in
Production and Employment
 (Average annual percentage change)

	Labour productivity		Number of persons employed	
	1960-73	1973-79	1960-73	1973-79
ECONOMY AS A WHOLE				
Fed. Rep. of Germany	4.3	3.0	0.2	-0.6
European OECD countries	4.4	2.0	0.4	0.3
Japan	8.4	2.9	1.4	0.7
USA	2.1	0.2	1.9	2.4
All OECD countries	3.9	1.6	1.0	1.1
MANUFACTURING				
Fed. Rep. of Germany	4.7	3.2	0.5	-1.4
European OECD countries	5.3	2.8	0.6	-0.9
Japan	9.7	6.5	3.6	-1.4
USA	3.4	0.9	1.5	1.1
All OECD countries	4.9	2.8	1.4	-0.4
TERTIARY SECTOR				
Fed. Rep. of Germany	3.0	2.5	1.4	1.1
European OECD countries	2.8	1.4	1.9	1.8
Japan	6.3	1.4	2.9	2.6
USA	1.8	0.5	2.7	3.1
All OECD countries	2.4	0.9	2.4	2.4

Source: OECD; own calculations.

1973 but a worse employment record (see Table 4). From this it cannot be concluded, however, that the more rapid increase in productivity has been the cause of the steeper rise of unemployment. Quite the reverse: jobs have been shed as unprofitable just because productivity was too low in relation to wages. The result was that employment fell while the productivity of those still in employment rose. The redundancy of workers who were too highly paid in relation to their productivity led to an increase of the average productivity of those staying at work.

In the Federal Republic of Germany there has been a shortage of jobs for a number of years. This became obvious when in 1979 and 1980 there were still around 900,000 persons out of work despite a high plant utilisation rate. Since then the shortfall has increased further because the unviable jobs that have disappeared have exceeded the viable jobs that have been created. The worst affected have been workers in relatively unskilled jobs, who bear a higher risk of dismissal. In manufacturing industry alone 1.2 million jobs with low or intermediate qualification requirements disappeared between 1960 and 1980, whereas over the same period 700,000 jobs for better qualified staff were created. This continued trend towards higher

qualification requirements is also evident in other sectors of the economy. Only in the tertiary sector a limited number of additional jobs were created for employees with no vocational training. Workers with a low level of qualification who lose their job can generally find a new one because of their high flexibility and mobility, but the types of employment offered are often highly insecure, so that their chances of sustaining their vocational capabilities and obtaining new qualifications are reduced. Since 1973 a considerably higher proportion of the relatively unskilled workers who have switched to another job have first experienced a period of unemployment. The average duration of unemployment was also significantly higher than before 1973.

Workers with professional training also have problems of adjustment, for if they are unemployed they hesitate relatively long before deciding to accept a job that does not correspond fully or at all to their qualifications. Above-average unemployment rates are apparent among professional groups whose training suits them for a narrow field of activity or to employment in a particular sector.

Another structural problem of the labour market is the fact that qualified staff in employment are relatively immobile. This increases the need for flexibility and mobility on the part of workers who lose their jobs, who want to change to a better qualified job or who are seeking employment after the completion of training.

Besides greater geographic and professional mobility, an adjustment in the level and structure of wages could make a substantial contribution towards reducing the jobs gap and the continuous tendency towards segmentation of the labour market. The rigidity in the wage structure that has been evident hitherto has meant that the burden of adjustment has had to be borne to a larger extent by workers who are frequently unemployed and who must accept a discontinuous development of their incomes or by unemployed workers who, after a long search, accept jobs at a lower rate of pay. Greater wage flexibility in industries threatened with unemployment could not only keep a greater number of jobs viable but also ease the adjustment pressure. Changes in the wage structure by which endangered jobs become viable once more could save less mobile workers from unemployment, after which they usually find work only at a lower wage in any case. More mobile workers, on the other hand, might be motivated by the relative reduction in wages to seek better paid alternatives, with the result that the necessary contraction process of industries and firms that have proved uncompetitive will still take place.