



Diskussionspapiere Discussion Papers

Discussion Paper No. 182

**Cost-cutting:
A Strategy for Greater Wealth and Employment?**

**Results of quantitative scenarios for Germany
to the year 2010**

by

Bernd Görzig, Martin Gornig,
Claudius Schmidt-Faber, Erika Schulz

Berlin, March 1999
(revised version)

Deutsches Institut für Wirtschaftsforschung, Berlin
Königin-Luise-Str. 5, 14195 Berlin
Phone: +49-30-89789- 0
Fax: +49-30-89789- 200
Internet: <http://www.diw.de>
ISSN 1433-0210

Contents

1 INTRODUCTION	4
2 ELEMENTS OF THE TWO STRATEGIES	6
3 CAUSAL MECHANISMS	9
3.1 The determinants of private-sector investment	9
3.2 Wage costs and substitution processes	11
3.3 Cost-cutting, competitiveness and markets	13
3.4 Cost-cutting and sales	16
3.5 Cutting costs by prolonging working life	17
4 RESULTS	24
4.1 Output and employment	24
4.2 Growth and income distribution	27
4.3 The public sector	31
4.4 Employment and the labour market	33
5 CONCLUSION	36
BIBLIOGRAPHY	

LIST OF TABLES

Table 1: The importance of one year’s investment for potential output and employment 13

Table 2: Assumptions on demographic trends and participation rates 18

Table 3: Structure of the resident population in Germany: 1991, 1995, 2010..... 19

Table 4: Participation rates and labour supply 22

Table 5: Potential output of the business sector 26

Table 6: Demand and output..... 28

Table 7: Prices and wages 29

Table 8: Income Distribution..... 31

Table 9: Government Finances 32

Table 10: Employment and labour market 35

LIST OF FIGURES

Figure 1: Capacity utilisation and investment in machinery and equipment..... 10

Figure 2: Estimation of investment with reference to sales and profits 11

1 Introduction

Germany currently finds itself in a difficult economic situation, one characterised not only by a long period of weak economic growth, but also by developments that, if the necessary adjustment processes are not accomplished, pose a threat to Germany's medium-term growth prospects.

In the international context the central challenges result from the following trends:

- Changes in the framework of conditions for international trade (WTO agreements), which offer new opportunities for the export sector, but can also be expected to intensify competition and thus the pressure for adjustment;
- the transition in eastern Europe, the opening up of China and developments in Latin America, all of which, on the one hand, offer new sales markets for German companies, but on the other create new competitive relations and alternative locations for production and investment;
- the trend towards globalisation, which is gradually dissolving traditional ties to production locations.

In domestic economic terms the most urgent task is to reduce mass unemployment. An indispensable pre-condition for this to be achieved is that the "catching-up process" in eastern Germany continues. At the same time government finances must be consolidated in order to regain the capacity for policy action.

There is general agreement that action urgently needs to be taken to meet these challenges. Different views are put forward, though, with respect to the type of economic policy activities required to ensure the successful adjustment of Germany as a production locations. A large number of proposals for action are targeted towards an immediate and general reduction in the costs of production in Germany. They relate, in particular, to reductions in the burden of wage costs, taxes and social insurance contributions. These proposals are based on considerations derived largely from supply-side theory.

The task of this report is to indicate the possible economic effects of such an economic policy concept oriented towards cost-cutting. To this end the various proposed measures were concretised and brought together in a "cost-cutting scenario". It is not the economic policy proposals

of a specific party or interest group that have been examined with regard to their economic effects; rather, we have attempted to capture the underlying philosophy, with a package of measures that reflects the overall tenor of these proposals.

The quantitative paths were estimated on the basis of theoretical and empirical analyses, focusing particularly on the interrelationships between wage costs, investment and growth. Within the framework of the DIW's scenario model (Gornig et al. 1997), these partial results are collated into a consistent overall picture of economic developments in an iterative process. Projections of demographic and labour supply trends are also tied in to this process.

In order to be able to evaluate the economic effects, the results of the cost-cutting scenario are compared with those of a reference scenario that is based on proposals for measures targeted towards a modernisation of the institutional and material infrastructure. Although one of the aims of this strategy is also to reduce the burden of costs, this is achieved not by flat-rate cuts in individual cost components, but rather by raising efficiency. In this line of argument, relatively high levels in wages as well as in taxes and social insurance contributions can be seen as a condition for increases in efficiency by means of improvements in qualitative production conditions. The economic causal mechanisms of these policy measures, which are brought together under the title of "integration scenario", and their depiction within the DIW scenario model have already been described in detail elsewhere (DIW 1996b).

2 Elements of the two strategies

The central element in a cost-cutting strategy is to reduce business costs. The main role is played by a reduction in the burden of labour costs, achieved by means of wage moderation on the part of workers, coupled with a reduction in indirect labour costs. It was assumed that in real terms labour costs per employee remain constant in west Germany to the year 2010. This means that wage growth is even slower than that demanded by the various calls that have been made for real wage growth to follow a path below productivity growth. The European Commission (EU 1993), for example, proposes a lag of one percentage point behind productivity with the aim of expanding employment. The German Council of Economic Experts (SVR 1997) calls for a lag of one half of a percentage point.

Alongside the decrease in the burden of wages and indirect wage costs, the tax burden is also reduced. For unlike in the reference scenario, energy, as a production factor, is not subjected to higher taxes, so that an important component of input costs will not increase (at least not for this reason). In addition, firms can count on further reductions in the burden of taxes on profits, although at a markedly reduced pace compared with the first half of the 1990s.

Reductions in the tax burden are not limited to the business sector. Employee households also benefit from a cut in wage and income tax, so that the tax burden is reduced by almost one percentage point of earned income by the year 2010. On the other hand, households face a two-percentage-point increase in value added tax and an increase in the burden of social insurance contributions, of which they must shoulder a greater proportion.

As a result of these measures, the share of government receipts on GDP is almost three percentage points lower than in the reference scenario. In order to reduce the budget deficit as a share of output, simultaneously government spending is cut back on a broad front. In real terms government investment is frozen at its present level, while government consumption at constant prices is limited to a marginal annual average rate of growth of just 0.2 per cent. Subsidies are cut back drastically to just 1.2 per cent of GDP, and the level of many transfer benefits will be raised significantly more slowly than in the past.

The Growth and Employment-Promotion Act has already indicated the direction in which the financial pressure on the social insurance systems is to be reduced within the context of a cost-cutting strategy (BfA 1996). One of the proposals is to raise the retirement age to 67, a strategy accompanied by cuts in higher education studying times, in order to reduce the average age at

which young people enter employment. Changes in the regulations for social benefits for those with reduced capacity to work will make it much more difficult to claim such pensions.

The „integration scenario“, which serves as a reference model to the cost-cutting scenario, is based on a comprehensive modernisation concept. It focuses on the renewal and development of the institutional and material infrastructure. The aim of the modernisation strategy is to guarantee Germany's high level of social, technological and economic performance, while at the same time creating greater scope for individual and plant-level solutions by rendering institutional forms more flexible.

The central elements in the modernisation strategy are as follows:

- an incomes policy that, while allowing for greater scope for plant-level exceptions, enables broad sections of the workforce to participate in economic growth;
- a working-time policy that, allowing for the different conditions prevailing in German enterprises, creates greater scope for a more equitable distribution of work;
- an education policy appropriate to the increasingly highly differentiated skill requirements, by strengthening initial and particularly continuing training;
- an infrastructure policy that permanently improves the conditions for high-value production by means of qualitative improvement and expansion;
- a policy for eastern Germany that provides massive support for an adjustment to the conditions and standards prevailing in west Germany, based on an orientation towards a further capital intensification and a higher technological level.

Seen as a whole, this bundle of strategies relies upon government playing an active role in improving the conditions for production in Germany. This cannot be achieved without additional public spending and must, therefore, in many respects take precedence over current fiscal constraints.

The conversion of this strategy bundle into the quantitative figures required in order to calculate the scenario relies on a large number of variables. In the case of real wage trends, for example, an increase at an annual average rate of 1.5 per cent is assumed, that is at a similar rate to that during the last 15 years in west Germany. It is assumed that the pace of working time reduction accelerates slightly in comparison to past trends. The education and infrastructure policy strategies are reflected in a marked increase in the rate of growth of overall factor productivity in

the business sector. The supply of government services expands at an annual rate of around 3.5 per cent. The assumed strategy regarding the support policy for east Germany is concretised by, among other things, virtually constant nominal spending on investment grants.

3 Causal mechanisms

The call for costs to be reduced is based on the expectation that this will provide impulses for higher economic growth. This expectation relies on a number of causal relationships. It is expected, for example, that the desired reduction in the burden of wage and indirect wage costs - coupled, in particular, with greater wage differentiation - will boost normal market production vis-a-vis moonlighting and do-it-yourself activities.

Yet the expectations of higher growth are based in the first instance on causal mechanisms within the production process. It is expected that reduced business costs will induce firms to expand investment and thus to increase medium-term potential output and employment. If the influence of cost-reducing measures on investment and employment is to be analysed systematically, it is necessary to distinguish between different analytical levels and causal relationships. The first important distinction for the evaluation is between the micro- and macroeconomic level. From the microeconomic perspective cost-reducing measures need to be divided into indirect influences, which impact on investment via the profitability and cost situation of the plant as a whole, and those effects related directly to the concrete investment calculation. The most important mechanisms at the macroeconomic level are the feedback effects on the various components of demand - not least government demand - resulting from changes in production conditions. In addition, the impact of a cost-cutting strategy on changes in the supply of labour are analysed.

3.1 The determinants of private-sector investment

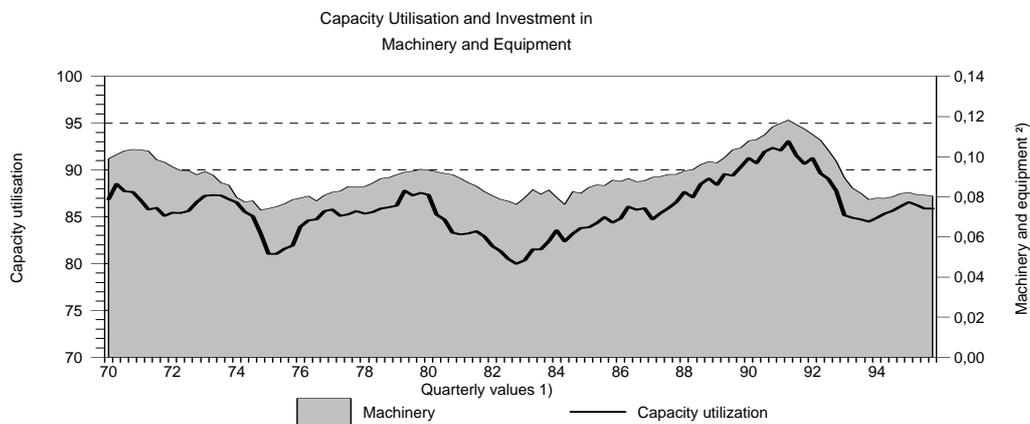
Profits are often seen as being the dominant factor determining investment activity by firms in so far as it is oriented towards generating future profits. Starting from simplified macroeconomic models it is frequently concluded that there is a very close relationship between investment and profits.

Yet such theoretical considerations run counter to empirical findings. At the macroeconomic level, and even more so at the microeconomic level, the relationship between profits and investment is very loose. The rapid increase in business income and profits since 1994 have not led to the rise in investment on which many had pinned their hopes. A comparison of annual changes in profits and investment reveals little correlation. The contrast between the theoretical models and the empirical findings can be explained primarily with reference to assumptions of the model that do not accord with reality.

In analysing the relationship between private sector investment and corporate profits, it is important to recognise that in practice the latter are derived from various sources. It is only in ideal-typical models that profits can be equated with the yield on capital as a production factor. Those familiar with business practice are well aware that, while the production process is certainly a pre-condition for earning profits, profits are influenced by a wide range of factors, many of which have little to do with production. Firms' willingness to take on debt in order to finance additional investment depends decisively on their evaluation of the nature and the source of the profits they are earning.

"Inflationary profits", i.e. those resulting from an unexpected rise in the price level, will be considered by firms as "pseudo" profits. While they improve liquidity, they cannot be taken, of themselves, as indicating an improvement in the firm's sales position. Similarly, profits from temporary cuts in the cost of production, for instance resulting from currency revaluation, falling energy prices, or cyclically induced wage moderation, will not induce firms to invest in additional productive capacity. It is only when firms are confident that profits are closely linked to the utilisation of existing plant that it makes sense for them to expand their machine park. Figure 1 clearly shows the parallel paths of capacity utilisation and investment in plant and machinery.

Figure 1



1) Seasonally adjusted. - 2) As a% of potential output.

DIW 99

Yet it is not always easy to recognise the sources of profits. Help comes in the form of a decomposition procedure (DIW 1989) that divides annual changes in profits into a number of components. Taking as a starting point gross income from entrepreneurial activity and property, the annual change in profits there is decomposed into:

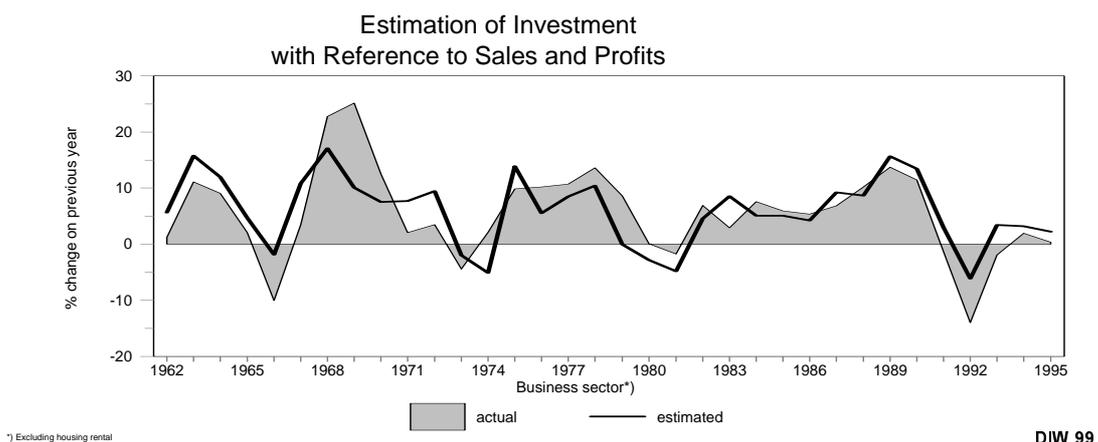
- a sales component which indicates how profits would have changed, given constant unit returns and unit costs, merely due to changes in the volume produced;

- a price-component which covers those influences resulting from the increase in the general price level at an unchanged level of output, when unit costs increase at the same rate as unit returns;
- an interest-cost component, which covers the change in profits caused by changes in the net interest burden of the business sector; and
- a production-cost component relating to that proportion of the change in profits that, at unchanged output and a given rise in unit returns, results solely from an increase in unit costs differing from that in unit returns.

A regression analysis in which all four components were examined with respect to their influence on investment identified a systematic influence only in the case of the sales component of profits. For all the other profit components the parameters derived are not significant.

Figure 2 shows the annual rates of change of gross fixed capital formation, calculated in dependence of the sales-related component of profits, alongside the corresponding actual values. The degree of correlation of the two series is extraordinarily high, with an R^2 of 0.81. The residual differences can be explained neither by way of the other profits components, i.e. the interest-cost, production-cost or price components, nor with reference to long or short-run interest rates, nor to interest-rate spreads.

Figure 2



3.2 Wage costs and substitution processes

If the reduction in the cost burden is biased in favour of labour as a production factor, this may lead to a job-creating restructuring of production processes. In view of technical rigidities,

however, it must be assumed that the scope for restructuring existing production processes is rather limited. Consequently, the adjustment to changes in relative factor prices generally occurs only over the longer term, via the process of investing in new and scrapping old plant. At the microeconomic level investment decisions are frequently based on a calculation approach in which the costs of investment are determined by the sum of future discounted earnings. It is on this microeconomic approach that the DIW's capital-vintage model is based (Görzig 1985). In terms of the model, this means that it is assumed that companies base their investment decision on a neo-classical production function. Once an investment has been realised, relative factor inputs remain constant. In such a putty-clay approach it is usually assumed that prices and price expectations for the factors of production, and generally also sales expectations, are exogenous to the firm. Future earnings are derived as the difference between the returns on sales and the expected variable costs, primarily wage costs. An investment is utilised until the variable costs exceed the returns.

If firms are assumed to be profit maximising within the framework of such a model, then the level of investment simultaneously determines the optimal relationship between capital and the associated jobs, and the optimal period of utilisation. If in the longer term a company expects wage costs to rise more slowly, economic obsolescence of the investment will be postponed to the future. The firm will be able to base its calculations on a longer effective plant life. As a result the need for replacement investment will decline.

If wage costs are reduced, it makes sense for a company to design investment projects with a given capacity effect in a less capital-intensive way. If a company can count on the lower wage cost burden being maintained over the longer term, it will reduce its demand for investment goods (given constant sales expectations). At the same time the demand for labour increases in relative terms. In the short term the influence of this weakened pressure to substitute capital for labour is likely to be minor. The "weight" of one year of investment relative to the machine park already in place is simply too small. Calculations using the DIW's capital-vintage model, for example, shows that in 1995 just 5 per cent of the total west German productive capacity was accounted for by investment in plant during that year (Table 1).

In the longer term, however, the influence of the substitution process spreads to the entire capital stock, and also exerts an influence on average labour and capital productivity. Gradually the post-1995 investment accounts for a rising proportion of total productive potential. Assuming medium-term investment growth of between 3 and 4 per cent, by the year 2010 75 per cent of productive capacity would consist of post-1995 invested plant.

Table 1

**The Importance of One Year's Investment for Potential Output and Employment
West Germany 1995**

	Stock at start of year	Additions	
	in DM billions or thousands		as a % of the stock
Gross fixed assets	5 791	309	5,3
Potential output	2 361	124	5,3
Employment	26 248	1 216	4,6

Source: DIW calculations **DIW 99**

Even so, the quantitative effects of such a restructuring of production processes should not be overstated. Assuming a one percentage point reduction in the average rate of growth of real wages in the coming years, average capital deployment per job would be just 7 per cent lower by 2010. Provided the reduced rate of wage-cost growth does not induce effects damaging to corporate sales, after 15 years 3 to 4 per cent more jobs would be available by virtue of this substitution effect. Initially the effect on the demand for labour is minor. The job-creating effects increase over the observation period, making their full effect felt towards the end of the period. This means that the demand for investment goods would decline to at least the same extent, however. The macroeconomic wage bill would be reduced from the start of the period, on the other hand, as the cost-reducing influences of the lower wage cost burden would take effect before the job-creating impact of the resulting substitution effect begins to bite.

Moreover, given the initial reduction in wage income and the reduced demand for investment over the longer term, it appears difficult to sustain the assumption that the reduction in the burden of labour costs would have no effect on corporate sales. If, on one hand, the macroeconomic wage bill declines in the wake of the easing of the labour-cost reduction, coupled with the initially limited employment effect, private consumption can be expected to expand less strongly. This has a damaging effect on firms' sales expectations, on top of the weakened demand for investment goods resulting from the substitution effect. In the absence of other factors stimulating sales and compensating for these negative influences, firms must be expected to reduce investment even further, rather than creating jobs.

3.3 Cost-cutting, competitiveness and markets

When evaluating the impact of lower costs on sales, either via wage moderation or reduced payments by business to the public sector, it is necessary to pay attention to the numerous differences between the micro and macroeconomic perspectives. It is not infrequently the case that determinants of investment activity that may be relevant for an individual company are irrelevant at the macroeconomic level. Conversely, variables that play a significant role in the macroeconomic discussion frequently have no direct influence on investment decisions at the microeconomic level.

From a microeconomic perspective the assumption that cost reductions will have a positive impact on investment and growth for a firm facing price competition seem immediately plausible. Price competition means that a firm competes with other suppliers only with regard to the price of the commodity on a market that is otherwise unlimited. Taking the isolated view of a single firm, cost reductions would enable it to reduce its sales price. The additional demand for the products of this company to which this gives rise lead to expanding output and employment there. The firm increases its capacity utilisation. If the company had previously adjusted its employment to the lower level of capacity utilisation, it will recruit additional labour, filling positions that had previously been vacant due to inadequate sales. Additional jobs can also be created by means of investment to expand productive capacity, if the company had been operating at the limit of its capacity and is confident that the cost reduction and the resulting competitive advantage are permanent in nature.

It is immediately obvious from the term "competitive advantage" that not all companies can win in the struggle for market shares. If all the companies operating on a market enjoy cost reductions, they cannot improve their price competitiveness. The mechanism whereby a cost reduction for one group of companies is associated with an improvement in competitive position only functions if there is another group of companies that does not benefit from cost-cutting measures. In the context of a cost-cutting scenario based on a generalised reduction in costs in Germany, this means that competitive advantages can only arise vis-a-vis the rest of the world.

Yet the growth impulses of an improved price competitiveness over the rest of the world should not be overstated. Given flexible exchange rates, improvements in the international competitiveness of German firms must be offset against the potential for a revaluation of the D-Mark. A higher external value of the currency can nullify cost advantages in terms of wages or taxes in international trade between price-competitive terms. Yet even when such exchange-rates reactions do not occur, or, as in a European monetary union, are not possible, domestic wage moderation, for instance, does not necessarily bring about an improvement in international price competitiveness. It must be assumed that, at least within the EU, German wage trends serve as an indicator for other countries. If they, too, conclude moderate wage settlements, Germany's cost advantage over its most important trading partners melts away. The race to cut

costs in this fashion can at best generate only temporary advantages in international price competition.

The debate on the impact of cost reductions often focuses on the influence on firms' investment decisions. Yet this ignores the fact that, before investment occurs at all, any reductions in the cost burden initially exert effects on the production currently under way. This production is being realised using plants and machinery set in place in the course of prior investment activity. Whether firms actually use the profits resulting from the reductions in the cost burden for expansion, and thus for additional investment and the creation of new jobs, depends essentially on the type of product market on which the firm operates.

In evaluating the investment and growth impulses emanating from an improved competitive position, it must be taken into account that in Germany, as in other highly developed economies, the proportion of output that is a subject to international price competition is much lower than in other countries (DIW 1992). Rather, German companies have traditionally sought to concentrate on producing goods that enjoy quasi-monopolistic competitive advantages on limited markets. This is expressed not least in the relatively high concentration of German exports among a small number of commodity groups in the high-price segment. Yet on such markets, price cuts do not usually lead immediately to the desired increase in sales. It is only indirectly that their position improves against related products. A company that is not in price competition generally operates within constrained market segments. It is usually unable to increase its profits significantly by reducing its prices. Rather, most of the cost reduction will be translated directly into higher profitability. The higher rate of return of the plant utilised by the firm prolongs its economic working life. At the same time, the profitability requirements made of potential new plant are increased, retarding, *ceteris paribus*, the investment process, although without negative effects on the size of the workforce.

However, it must be taken into account that the market situation in which a company finds itself is seldom independent of its investment activity. On the contrary, in many cases it is precisely the aim of investment to strengthen the market position of the company and to increase its degree of independence from price competition. In other words, a company that does not face price competition will have to invest in order to maintain its competitive advantages in the future. Unlike a company that faces price competition, it cannot assume that its sales can be increased indefinitely on existing markets. It is in the nature of such markets tailored to the needs of individual companies or products, that the number of customers and the volume demanded are limited. For this reason such companies are forced to open up new market segments by means of investment. It is only when this is successfully accomplished that the additional profits resulting from lower costs actually lead to more investment and job creation. The new market segments need not necessarily lie in the existing areas of production activity and the existing

production location. Cost reductions, where it is not oriented exclusively towards an improvement in the profitability of a single firm, can therefore lead to investment in other production areas and particularly in other production locations.

3.4 Cost-cutting and sales

Whether and to what extent measures taken with the aim of improving the cost situation at the micro-level will raise investment and employment at the macroeconomic level also depends on the reaction of other affected actors in the economy. It is the recognition of these interdependencies within an economy that constitutes an additional important reason for the divergence between micro and macroeconomic explanations of investment and growth following cost reductions.

At the macroeconomic level these macroeconomic interrelations of a cost reduction on the various components of effective demand play a key role. Under *ceteris paribus* conditions, reduced costs for the business sector inevitably imply income losses for other sectors. A reduction in the burden of corporate wage costs means, taken by itself, a decline in income for employee households. This, in turn, generally leads to declining sales due to the ensuing contraction of private consumption. Within this circular economic mechanism, a negative effect on investment and growth can only be avoided if either the propensity to save of private households lastingly declines, or the loss of demand from private consumption is offset by increases in other demand aggregates.

Comparable demand effects are also induced by government measures. Cuts in public spending must be implemented to reduce the budget deficit. As a result, planned increases in public capital spending are cancelled, reducing sales growth for private companies and failing to generate positive effects for the productivity of private investment. If, in the context of a growing economy, economically relevant infrastructure is utilised more heavily, firms' production costs will tend to increase over the longer-term due to capacity constraints (DIW 1994). The cuts in many areas of public spending mean that firms' sales prospects tend to decline. Reduced public spending on goods and services leads to a direct demand loss, while cuts in social benefits result in an indirect loss of demand.

Similar considerations apply in the case of the other demand aggregates. If government is successful in reducing its budget deficits, government demand for credit declines. The resulting fall in capital market interest rates could stimulate private investment activity. If this were the case, it might offset the influence of the substitution effect induced by the slower pace of wage growth. Yet this is not necessarily to be expected. If the business and the public sector managed to reduce net borrowing by means of wage moderation, redundancies and cuts in transfers,

households must expect income losses, unless the current account surplus increases at the same time. If this leads to a decline in private consumption, households will save less, even if the savings-to-income ratio remains unchanged. If the central bank does not pursue an expansionary monetary policy in this situation, a fall in the supply of capital must be expected, so that there is no reason to expect interest rates to decline. If, in addition, the hoped-for improvement in the foreign trade balance fails to materialise, from a macroeconomic perspective the cost-cutting measures themselves are more likely to reduce than to raise sales and employment.

Consequently, at the macroeconomic level account must be taken of the fact that investment must adjust to the constraints on financing set by economic interrelations. If the proportion of self-financed investment remains constant, higher investment is only conceivable if other sectors of the economy or the "rest of the world" take on additional debt (DIW 1997b). Although it is undisputed that higher corporate investment is compatible with an unchanged debt position of all sectors if at the same time output is at a high level, the decisive question is how this high level is to be achieved. Relying solely on higher retained profits in the hope that this will lead to more investment is equivalent to the assumption that the other sectors are prepared to take on additional debt (DIW 1996a). If this cannot be achieved, a profit-induced increase in investment is impossible.

3.5 Cutting costs by prolonging working life

Two central elements in the cost-cutting strategy discussed here are the plans to reduce the time spent in higher education and the raising of the retirement age to 67. These strategy elements exert direct effects on labour supply. In addition, the framework of economic and political conditions characterising the cost-cutting scenario also influence - primarily by way of migration - the size of the overall population and therefore the population of working age. Whereas in the reference scenario net migration of 3.6 million is expected between 1996 and 2010, against the background of favourable economic development prospects, in the cost-cutting scenario the economic situation in Germany is rather unfavourable, reducing the "pull effect" of the German labour market on potential immigrants to a corresponding extent. This is likely to be associated with a more restrictive immigration policy, so that it was assumed that net migration would be around 800,000 below that in the reference scenario (Table 2).

Table 2

Assumptions on Demographic Trends and Participation Rates

	Reference scenario	Cost-cutting scenario						
Birth rate	<p><i>West Germany:</i> <u>German women:</u> relatively constant with a continued slight increase in the average age at the first child. The total fertility rate by the cohort 1985 amounted to around 1300. <u>Foreign women:</u> continued convergence on the fertility patterns of German women. The total fertility rate in 2010 amounted to 1600. <i>East Germany:</i> <u>German women:</u> Among younger women a "catching-up effect" has begun, offsetting the very low birth rates in the early 1990s; among middle-aged women who already have 1 or 2 children, this effect will not occur. More generally a process of convergence to west German fertility patterns. The cohort born in 1985 will exhibit the same birth rate in east and west Germany. Over the period this implies an increase in birth rates, but they will remain below those in west Germany for a considerable time to come.</p>							
Mortality	<p>Continued increase in life expectancy in both east and west Germany, with a narrowing of the existing regional differences in mortality. In 2010 the life expectancy of German men in west Germany will be 75.1 and of German women 81.4 years; in east Germany the figures will be 74.2 and 80.4 years respectively. In purely statistical terms the figures for foreigners are slightly higher: this is due to the fact that the old and the sick tend to return to their country of origin.</p>							
Migration	<p>Net migration for the period 1996-2010 is as follows:</p> <table border="1"> <tr> <td>Germans:</td> <td>0.95 million</td> <td>0.80 million</td> </tr> <tr> <td>Foreigners:</td> <td>2.62 million</td> <td>1.99 million</td> </tr> </table>		Germans:	0.95 million	0.80 million	Foreigners:	2.62 million	1.99 million
Germans:	0.95 million	0.80 million						
Foreigners:	2.62 million	1.99 million						
Participation rates	<p>Participation rates will increase in both scenarios thanks to the impact of the Growth and Employment-promotion Act. On top of this comes the fact that the trend towards higher participation rates among west German women will continue. For east German women two scenarios of future participation rates were calculated.</p> <p style="text-align: right;"> In addition the normal retirement age is raised to 67 years.</p>							
DIW 99								

The ageing of the population will continue largely independently of the extent of immigration: against the background of the continued increase in life expectancy, the birth rate in west Germany will remain more or less constant, while the low birth rate in eastern Germany will gradually rise to the west German level. Even so, the reduced immigration in the cost-cutting scenario serves to accentuate the ageing of the population compared with the reference scenario. Of a total resident population of 81.5 million (reference scenario 82.4 million), the proportion of the under 20-year-olds will decline to 18% and the share of the 60-year-olds and over will rise to 26% (Table 3). There will only be a minor decline in the working-age population as a proportion of the total, although the absolute decline of this group, at 1.6 million, is substantial.

The decline in the working-age population cannot be expected to ease pressure on the labour market, however, as it will be more than compensated for by changes in participation behaviour patterns. In the cost-cutting scenario it is assumed that the duration of higher education studies is cut markedly, student fees are raised significantly and the number of places in higher education cut back to a far greater extent than in the reference scenario. On top of this comes an increase in the retirement age in stages to 67 for both men and women.

Table 3

Structure of the Resident population in Germany: 1991, 1995, 2010

	1991	1995	2010	
			Reference-scenario	Cost-cutting scenario
	in millions			
Population	80,3	81,8	82,4	81,5
Age structure in %				
0-20 years	21,5	21,5	18,3	18,3
20-60 years	58,0	57,4	55,8	55,7
60 years and older	20,4	21,0	25,9	26,1
Foreigners as a % of the population	7,6	9,0	13,7	13,0
Cumulative migrations ²⁾				
Immigration	-	-	13,4	12,6
Emigration	-	-	9,8	9,8
Net migration	-	-	3,6	2,8
of which:				
Nationals	-	-	0,9	0,8
Foreigners	-	-	2,6	2,0
Cumulative net natural population movements				
Nationals	-	-	-4,3	-4,3
Foreigners	-	-	1,3	1,3
Total	-	-	-3,0	-3,1

1) Excluding naturalisations. - 2) 1996 to 2010.

Sources: Statistisches Bundesamt; DIW Scenario Model.

DIW 99

The changes within higher education imply both that the proportion of school leaders commencing studies will decline and that those graduating from universities and colleges will, due to the shorter duration of studies, be available to the labour market at an earlier stage. The Conference of Federal State Ministers responsible for education (Kultusministerkonferenz) has produced estimates of higher education trends (new students, students and graduates) to the year 2015 (KMK 1996). In the middle status-quo variant, in which the average study period is held constant in universities (at just under seven years) and colleges (at just under five years) a

total of 2.2 million students are expected in 2010. If, on the other hand, it proved possible to reduce study periods to four and a half years at university and four years at college, the number of students in 2010 would, at 1.6 million, be significantly lower than in the reference scenario. The reduction in the duration of studies serves primarily to raise labour market participation rates among the 25-30 year-olds, as the average age of graduates amounts to around 28 years. Overall, the participation rates of those aged under 30 will be significantly higher in the cost-cutting than in the reference scenario.

Given the financial problems expected to be encountered by the pension insurance scheme as a result of demographic trends, discussions have begun on a further increase in the normal retirement age, i.e. the age at which employees can retire without suffering deductions from their pension entitlements. The most frequent proposal is for an increase in the retirement age to 67. Also under discussion are changes in the mode of calculating pension entitlements and further reductions in benefit levels. In the cost-cutting scenario it is assumed that a bundle of measures is taken to ensure the viability of the pension system, with only moderate increases in the contribution rate to the pension insurance scheme, and that the normal retirement age is raised to 67.

The Growth and Employment-Promotion Act that came into force at the start of 1997 has already brought in numerous changes in pension laws (BfA 1996). The previous retirement age for the unemployed (starting in 1997) and for women (starting in 2000) is being raised in 60 monthly steps from 60 to 65; the retirement age for those with the full number of contribution-years is to be raised (starting in 2000) from its current level of 63 to 65 in 24 monthly steps. These changes have been incorporated into the reference scenario. In the cost-cutting scenario it is assumed that additional measures are taken, leading to a further increase in the retirement age to 67. The increase in the age limit could be achieved by raising the minimum retirement age to 62 (an option that, as currently for those retiring at 60, would lead to deductions from pension entitlement), or by permitting people to retire at 60, as is currently the case, but imposing more stringent deductions. In the latter case the maximum deduction from the unemployment pension and women's pension would be 25.2 per cent. The maximum deduction per month would, with respect to the pension levels prevailing in the first half of 1997 amount to around DM 465 in west and DM 382 in east Germany (in each case assuming 40 contribution years) Such deductions - just as the alternative of increasing the earliest possible retirement age to 62 - would be expected to induce more people to remain in employment for longer.

Currently participation rates decline significantly well before the standard retirement age. For instance, in west Germany in 1995, less than half of (German) men aged 60 were employed, around 40% of those aged 61 and just a third of those aged 62 (StaBua 1996). This is because of the opportunities available to retire early due to unemployment or entitlement to a full or partial

occupational disability pension. Thus the financial burden on the pension insurance scheme can only be effectively reduced if the conditions for entitlement to occupational disability pensions are also changed. The planned reform of these pensions (Seidel 1997), under which the occupationally specific disability pension is to be more or less scrapped and entitlement to a pension due to reduced work capacity restricted, was incorporated into the reference scenario. In the cost-cutting scenario it is assumed that the reform is implemented more rapidly and the definition of "reduced work capacity" is interpreted far more rigorously. These changes in pension law are coupled with lower income growth, lower wage growth and a reduced pension level compared with the reference scenario. It is therefore to be expected that there will be a significantly greater number of people who will be forced to continue working, or to take on work to top up their pension entitlement, in order to make ends meet. The participation rate will thus be higher than in the reference scenario, particularly among the 65-69 year-olds (Table 4).

Comparing participation rates with those prevailing in the 1960s or 1970s, it seems that there is considerable scope for raising participation rates once more. Although participation rates had been falling before the start of the 1970s (when the flexible retirement age limit was introduced), they were still twice as high for the 60-64 year-olds and four times as high among the 65-69 year-olds than in the 1990s. Even allowing for the fact that, in the context of a labour shortage, employers were keen to retain elderly employees, and these were also forced to work longer because the financial constraints were greater then than they are today, the participation rates prevailing at that time do illustrate the substantial potential in this area: in west Germany alone, half a million more German males between the ages of 60 and 74 would now be in employment under the participation-rate conditions prevailing in 1972.

As a result of the changes in participation behaviour, the labour force in the year 2010 will, at 42.3 million, be 800,000 higher in the cost-cutting than in the reference scenario; this is in spite of the fact that the population will be 900,000 below that in the reference scenario. In other words the behavioural effect more than compensates for the demographic effect. Yet this also

Table 4

Participation Rates and Labour Supply

Age groups	1991		1995		2010			
	male	female	male	female	Reference scenario		Cost-cutting-scenario	
					male	female	male	female
Participation rates in selected age groups in % West Germany								
15 - 20	40,7	34,8	34,8	28,2	36,2	31,3	40,5	35,0
20 - 25	77,8	73,4	75,7	68,7	76,7	69,8	82,4	72,5
25 - 30	86,8	70,8	86,0	72,5	86,6	75,6	90,4	77,1
60 - 65	35,0	12,2	33,0	13,0	67,9	19,0	71,9	30,1
65 - 70	8,2	3,8	7,3	3,3	17,8	4,8	21,3	7,5
70 - 75	4,9	2,1	4,2	2,1	4,6	1,8	3,2	0,8
East Germany								
15 - 20	59,6	46,3	40,5	30,4	35,2	32,4	40,3	35,0
20 - 25	88,9	87,2	86,5	81,0	75,4	72,9	82,1	74,3
25 - 30	96,2	96,2	93,1	90,7	85,5	79,8	90,1	79,8
60 - 65	26,8	4,8	15,7	3,3	67,1	18,4	72,2	30,7
65 - 70	3,4	1,2	3,0	-	4,3	3,6	20,2	7,2
70 - 75	-	-	-	-	-	-	0,9	-
Labour force in thousands West Germany								
15 - 30	5 143	4 171	4 484	3 643	3 989	3 275	4 233	3 378
30 - 60	12 628	8 256	13 384	9 283	14 058	9 918	14 104	10 008
60 a. over	800	362	768	361	1 712	520	1 797	757
Total	18 571	12 789	18 636	13 287	19 759	13 714	20 134	14 143
East Germany								
15 - 30	1 341	1 231	1 111	924	1 023	900	1 051	899
30 - 60	3 097	2 909	3 100	2 919	3 331	2 371	3 193	2 356
60 a. over	117	33	82	23	288	93	368	161
Total	4 555	4 173	4 293	3 866	4 642	3 365	4 611	3 416
Germany								
15 - 30	6 484	5 402	5 595	4 567	5 012	4 176	5 284	4 277
30 - 60	15 725	11 165	16 484	12 202	17 388	12 289	17 297	12 365
60 a. over	917	395	850	384	2 001	613	2 164	918
Total	23 126	16 962	22 929	17 153	24 401	17 078	24 745	17 559

Sources: Mikrozensus (representative sample survey); DIW prognoses.

DIW

means that the structure of the labour force will shift in favour of elderly workers. By the year 2010 the proportion of the workforce aged over 60 will have doubled.

4 Results

4.1 Output and employment

In order to evaluate the overall effects on output and employment of the assumptions bundled in the cost-cutting scenario, compared to the situation in 2010 in the reference scenario, we turn first to the results of the capital-vintage model. The main task is to determine the growth trajectory of the business sector (excluding housing rental), which constitutes an exogenous variable for the calculations in the capital-vintage model. For its part, the capital-vintage model provides figures on domestic demand for investment goods and productivity, along with essential components enabling the overall path of potential output growth to be estimated.

On the basis of the qualitative evaluation of growth impulses given in section 3, and allowing for the interdependent relationships between investment and aggregate demand, and between investment and productivity, the growth trajectory for the business sector (excluding housing rental) can be determined. Most important in this context is the estimation of the impact of a cost-cutting strategy on private consumption and the external position.

Given the trajectory of collectively agreed wage rates and indirect labour costs assumed in the cost-cutting scenario, unit labour costs are expected to decline across the entire prognosis period. On average this decline will amount to more than 1 per cent per annum in west Germany and around 2 per cent in east Germany. Germany's price competitiveness vis-a-vis the rest of the world will only temporarily improve to the same extent, however. Given that German wage trends are taken as an indicator within the EU, wage settlements in other Member States will also be moderate, causing Germany's cost advantages over its most important trading partners to melt away.

In addition the restrictions on public spending lead to a relative deterioration in the qualitative conditions of Germany as a production location, particularly in the areas of infrastructure and education. In the longer-term this poses a threat to its lead in terms of quality competition, particularly over the newly industrialising and central and east European countries. For this reason only moderate export growth to the year 2010 of around 3 per cent per annum is expected, compared to 4 percent in the reference scenario. The cost-cutting strategy will be relatively successful in limiting imports, however. Taken together, there will be a substantial increase in the foreign trade surplus in real terms. However, the foreign-trade impulses on the domestic economy will be significantly weaker than in the reference scenario.

The increasing demand impulses from abroad will have a positive effect on the domestic economy. This would have a favourable effect on the demand for investment goods and in

particular for private consumption. On top of this, privatisation will lead to a shift away from government in favour of private consumption. An additional positive effect is expected to emerge from the reduced incentives for moonlighting resulting from the lower indirect labour costs. However, these growth impulses will be almost completely offset by the weak development of mass purchasing power resulting from the unfavourable development of private household disposable income. In sum, therefore, private consumption can only be expected to expand by around 2 per cent per annum in the cost-cutting scenario. This growth rate is one half of a percentage point below that in the reference scenario.

Bringing together these various influences, it is expected that gross value added in the business sector (excluding housing rental) would increase by 2 per cent per annum in the cost-cutting scenario, taking the depressed level of 1995 as a starting point. In the reference scenario, by contrast, in which the positive impact of government activities and higher investment boost demand, the growth rate reaches almost 3 per cent.

The slower pace of wage growth leads to changes in factor inputs only in the case of new plant. A flattening out of the increase in capital intensity and thus also of labour productivity consequently occurs only after significant time lags. Even so, by the year 2010 it is to be expected that because of the slower pace of real wage growth, potential capital intensity in west Germany will increase by almost one half of a percentage point more slowly than in the reference scenario (1.6 compared to 2.0 per cent). The growth of labour productivity is weakened to a roughly corresponding extent (Table 5). However, on balance the number of jobs created by investment activity will be lower than in the reference scenario, because investment growth will be weaker in the light of the slow growth of demand.

In eastern Germany an even more pronounced weakening of the rate of labour productivity growth is to be expected. Whereas until now firms have expected a rapid adjustment of east German to west German wage levels, in the cost-cutting scenario east Germany is to be irrevocably classified as a low-wage region as far as the investment calculations of firms are concerned. The growth of labour productivity in the cost-cutting scenario will accordingly be far weaker than in the reference scenario. On balance the impact on employment is negative. The specialisation on relatively low value-added products, produced at low wages with low labour productivity, means that this region will be unable to serve attractive, expanding market to the same extent as west Germany.

For Germany as a whole the annual average growth of potential labour productivity under the conditions of the cost-cutting scenario will, at 1.7 per cent, be less than in the reference scenario (2.4 per cent), but this weakening will be considerably less pronounced than the gap in real wage growth between the two scenarios (an annual average of 1.3 percentage points). This

reflects the time lags inherent in the investment process, and is one of the reasons why the job effects of factor substitution are insufficient to offset the employment-reducing impact of weaker growth in the cost-cutting scenario.

Table 5

Potential Output of the Business Sector^{1) 2)}

	Unit	1991	1995	2010	
				Reference-scenario	Cost-cutting-scenario
Gross fixed capital	DM billions	6 177	6 862	10 413	9 466
Capital productivity 3)	DM thousands	451	431	414	406
Potential output	DM billions	2 786	2 955	4 308	3 839
Gross value added	DM billions	2 429	2 576	3 872	3 443
Capacity utilisation	%	87	87	90	90
Capital intensity 4)	DM thousands	178	212	313	289
Productivity per job 5)	DM thousands	80	91	129	117
Jobs	in millions	34,8	32,4	33,3	32,7
Employees	in millions	29,1	27,6	30,0	29,5
Job-fill density	%	84	85	90	90
Labour productivity 6)	DM thousands	83	93	129	117
Annual average change on previous period					
Gross fixed capital	%	-	2,7	2,8	2,2
Capital productivity	%	-	-1,2	-0,3	-0,4
Potential output	%	-	1,5	2,5	1,8
Gross value added	%	-	1,5	2,8	2,0
Capital intensity	%	-	4,5	2,6	2,1
Productivity per job	%	-	3,3	2,4	1,7
Jobs	%	-	-1,8	0,2	0,1
Employees	%	-	-1,3	0,6	0,4
Labour productivity	%	-	2,8	2,2	1,5

1) Excluding housing rental,- 2) At 1995 prices.- 3) Potential output per 1000 units of gross fixed capital.- 4) Gross fixed capital per job.- 5) Potential output per job.- 6) Gross value added per employee.

Sources: Federal Statistics Office; DIW potential output calculation and scenario model.

DIW 99

4.2 Growth and income distribution

The economic policy concepts depicted in both the scenarios lead to a marked acceleration of economic growth over the longer term (Table 6). In the reference scenario the German economy as a whole is expected to grow at an annual average rate of almost 2.5 per cent to the year 2010. The growth dynamic is perceptibly weaker in the cost-cutting scenario. With annual average growth rates of 1.7 per cent, however, the pace of growth is relatively high compared with the 1980s.

The achievement of a relatively high growth path in the cost-cutting scenario is conditional on decisive changes in the behavioural patterns of firms and households. It requires, for example, that firms pass on to a considerable extent the reductions in their wage cost burden in the form of lower prices. This implies that the price level would have to remain constant on average between 1995 and 2010 (Table 7). It also requires that households lastingly increase their propensity to consume, while the savings-to-income ratio would have to decline from its current level of 12 per cent to 9 per cent.

The main reasons for the lower growth trajectory in the cost-cutting compared to the reference scenario lie in the reduced impulses from government demand and private-sector demand for investment goods. Whereas in the reference scenario government consumption and public capital spending increase by between 1 and 2 percentage points each year, in the cost-cutting scenario both variables remain virtually constant. In the case of private-sector investment (excluding housing rental), annual growth of almost 3 per cent in the reference scenario contrasts with growth of just 1.5 per cent in the cost-cutting scenario. The dampening of investment demand is explained largely by the reduced extent to which capital is substituted for labour in response to wage moderation.

Taking the prognosis period as a whole, the cost-cutting measures are associated with highly significant welfare losses compared to the reference scenario. Whereas in the reference scenario per capita GDP at constant prices rises from DM 38,000 in 1995 to more than DM 60,000 in 2010, less than DM 55,000 is achieved in the cost-cutting scenario. This means that realisation of the conditions contained in the cost-cutting scenario implies a loss of income growth of an order of magnitude corresponding roughly to the total growth achieved in west Germany during the 1980s.

Table 6

Demand and Output

	1991	1995	2010	
			Reference-scenario	Cost-cutting-scenario
	DM billions 1)			
Private consumption	1 861	1 975	2 845	2 667
Government consumption	626	675	815	695
Investment	717	751	1 104	898
Government	84	87	126	87
Housing construction	195	260	352	306
Business 2)	438	404	626	505
Changes in inventories	5	28	20	20
Net exports	55	29	181	170
Exports	771	817	1 511	1 337
Imports	716	788	1 330	1 167
GDP	3 264	3 458	4 965	4 450
West Germany	2 965	3 077	4 206	3 868
East Germany	299	381	759	582
	Annual average change on previous period in %			
Private consumption	-	1,5	2,5	2,0
Government consumption	-	1,9	1,3	0,2
Investment	-	1,2	2,6	1,2
Government	-	0,9	2,5	0,0
Housing construction	-	7,5	2,0	1,1
Business 2)	-	-2,0	3,0	1,5
Changes in inventories	-	-	-	-
Net exports	-	-	-	-
Exports	-	1,5	4,2	3,3
Imports	-	2,4	3,6	2,7
GDP	-	1,4	2,4	1,7
West Germany	-	0,9	2,1	1,5
East Germany	-	6,2	4,7	2,9
1) At 1995 prices,- 2) Excluding housing rental.				
Sources: Federal Statistics Office; DIW scenario model.				DIW 99

Table 7

Prices and Wages

	1991	1995	2010	
			Reference-scenario	Cost-cutting-scenario
Price index 1995 = 100				
GDP	87	100	137	102
Private consumption	88	100	133	102
Government consumption	89	100	140	103
Investment	92	100	139	103
Exports	94	100	130	101
Imports	102	100	122	101
Annual average change on previous period in %				
GDP	-	3,5	2,1	0,2
Private consumption	-	3,2	1,9	0,1
Government consumption	-	3,0	2,3	0,2
Investment	-	2,1	2,2	0,2
Exports	-	1,6	1,7	0,1
Imports	-	-0,5	1,3	0,1
memo items:				
West Germany				
Price index of GDP	-	2,9	2,1	0,2
Adjusted gross wage share	-	-0,5	-0,3	-1,1
Individual gross wage income 1)	-	3,8	3,4	0,2
Labour productivity 2)	-	1,5	1,6	1,2
Unit labour costs	-	2,3	1,8	-1,1
East Germany				
Price index of GDP	-	9,7	2,3	0,1
Adjusted gross wage share	-	-6,2	-1,4	-1,9
Individual gross wage income 1)	-	14,9	5,0	0,7
Labour productivity 2)	-	10,0	4,4	2,9
Unit labour costs	-	2,1	0,8	-2,1
1) Gross wage and salary income per employee.- 2) GDP at 1995 prices per employed person. Sources: Federal Statistics Office; DIW scenario model. DIW 99				

The failure to exploit the potential for economic growth has a negative effect on the catching-up process in east Germany. Whereas per capita GDP in east Germany rises from DM 25,000 in 1995 to DM 49,000 in 2010 in the reference scenario, a figure of just DM 40,000 is achieved in

the cost-cutting scenario. Thus in this scenario, in the year 2010 the level of income in eastern Germany is more than 30 per cent below that in west Germany.

Moreover, it is not only regional differences that remain more pronounced in the cost-cutting scenario. It is also to be expected that the disparities in the functional and personal distribution of income will also be wider. Wage income, for example, will continue to decline sharply as a proportion of GDP, despite the fact that the wage share in Germany is already below the west European average. Wages decline from around 61 per cent of GDP in 1995 to just 50 percent in 2010 (Table 8), which would imply a renewed acceleration of the pace of income redistribution compared with the period since the start of the 1980s.

On top of this come the cutbacks in the transfer benefits to private households. Hardest hit by such cuts are recipients of minimum social benefit, the unemployed and pensioners. It is therefore to be expected that in the cost-cutting scenario broad sections of the population would not only miss out on real income growth, they would actually suffer serious income losses.

A continuation of the decline in wages as a share of output is also expected in the reference scenario. The pace of this decline will be significantly slower than in the past, however. Under the conditions prevailing in this scenario the wage share would amount to 57 per cent in 2010. Even so, given average real wage increases of around 1.5 per cent, most employee households will benefit from the growth process.

Restructuring processes in the area of social transfers are also expected in the reference scenario, resulting primarily from the shift in the age structure of the population. However, taken as a whole these changes will not serve to "decouple" social transfers from net wage trends. Consequently, in the case of personal income distribution, too, differentials can be expected to be markedly less pronounced in the reference than in the cost-cutting scenario.

Table 8

Income Distribution

	1991	1995	2010	
			Reference-scenario	Cost-cutting-scenario
	DM billions			
GNP	2 882	3 445	6 845	4 541
Depreciation	362	453	987	657
Indirect taxes minus subsidies	261	364	940	630
Indirect taxes	358	447	1029	675
Subsidies	98	83	89	45
Gross wage income	1 612	1 876	3 481	2 010
Social insurance contributions	491	608	1 071	602
Taxes on wages	221	294	559	298
Net income	900	973	1851	1 110
Gross income from profits	648	752	1 437	1 244
memo items:				
Indirect taxes as % of private consumption	22,0	22,6	27,2	24,7
Subsidies as % of GDP	4,4	3,1	1,6	1,2
Social insurance contributions as % of gross	30,5	32,4	30,8	29,9
Wage taxes as % of gross wage income	13,7	15,7	16,0	14,8
Taxes on profits as % of income from profits	15,7	10,6	10,8	10,1
Gross wage income as % of GDP	62,2	60,6	56,9	50,3
1) After deducting government consumption.- 2) Adjusted. Sources: Federal Statistics Office; DIW scenario model.				DIW 99

4.3 The public sector

Assumptions regarding the extent and nature of public sector activity are clearly reflected in the figures for government revenues and spending; together with more general economic trends, they lead to very different effects between the two scenarios on the extent of government debt (Table 9).

Table 9

Government Finances 1)

	1991	1995	2010	
			Reference-scenario	Cost-cutting-scenario
	DM billions			
Revenues	1 165	1 430	2 814	1 700
Indirect taxes	358	447	1 029	675
Social insurance contributions	491	608	1 071	602
Taxes on wages	221	294	559	298
Taxes on profits	95	81	154	125
Expenditure	1 301	1 547	2 852	1 789
Gross capital spending	75	87	175	89
Provision of public services 2)	537	649	1092	679
Social transfers	428	556	1115	751
Transfers in support of entrepreneurial 5)	149	114	133	67
Transfers to rest of the world	66	53	200	87
Interest payments 4)	47	88	137	116
Fiscal deficit	-136	-117	-39	-89
memo items:				
Governments revenues as % of GDP	40,8	41,4	41,2	37,3
Government expenditure as % of GDP	45,6	44,7	41,8	39,3
Deficit as % of GDP	-4,8	-3,4	-0,6	-2,0
Net debt as % of GDP 5)	38,9	48,2	37,3	64,4
1) Central, state and local government, social insurance and supplementary budgets (Treuhandanstalt, rail, east German housing sector).- 2) Government consumption minus depreciation.- 3) Subsidies and investment grants.- 4) Interest payments minus earnings from property.- 5) Liabilities minus claims. Sources: Federal Statistics Office; DIW scenario model.				
				DIW 99

In the reference scenario government plays an active role in modernising the production location. This involves additional spending, both current and capital. The volume of gross investment will almost double compared with 1995. The growth of public capital spending is limited exclusively to west Germany, whereas in eastern Germany investment is maintained at its present high level. Despite the additional spending, in the reference scenario public spending will decline slightly from 45 percent of GDP in 1995 to around 42 percent in 2010 for Germany as a whole.

The growth process initiated by government activities will generate additional government revenues even in the absence of tax changes. Beyond this, the reference scenario assumes an increase in the burden of indirect taxation. As a result, in the longer-term the annual public borrowing requirement can be reduced to below DM 40 billion, despite higher public spending. Thanks to the induced growth process, it is possible to reduce the borrowing requirement to below 1 per cent of GDP. In consequence, the relative burden of interest payments on government budgets declines perceptibly.

In the cost-cutting scenario government attempts to reduce the burden of taxes and contributions on firms and households by limiting spending at all levels of government and in virtually all spending areas. Compared with 1995, spending on service provision and public investment remain virtually constant in nominal terms. Subsidies are cut back markedly, falling by almost two thirds as a proportion of GDP by the year 2010. Additional spending is only to be expected on social transfers, reflecting the continued rise in the number of benefit recipients. The overall effect is a decline in public spending as a share of GDP of more than five percentage points by the year 2010 (39 percent) compared with 1995.

At the same time taxes and contributions will fall by almost 3.5 percentage points of GDP. Both the burden of taxes on profits and the proportion of social insurance contributions borne by companies will be reduced. Although employees will pay higher social insurance contributions, total contributions will decline by 2.5 percentage points of gross wage and salary income compared with 1995. On the other hand, employee households will benefit from a reduced burden of taxes on wages. Over the next 15 years wage tax receipts will fall by a more than 1 percentage point of wage income. Despite an increase in value added tax of two percentage points on the 1995 level, the deficit can only be reduced to around DM 90 billion. The annual public borrowing requirement declines to 2 per cent of GDP.

It cannot be claimed that comprehensive fiscal consolidation would be achieved by the measures summarised in the cost-cutting scenario. Despite the efforts to cut spending, outstanding government debt will increase markedly. Net government debt will rise from 48 percent of GDP in 1995 to 64 percent in 2010. The scope for government action would be further constrained by a continued increase in the burden of interest payments. The debt problem would be particularly serious for state and local governments in eastern Germany, as the increase in outstanding debt is not matched by a corresponding improvement in economic performance.

4.4 Employment and the labour market

As far as the central economic and social policy problem, that of mass unemployment, is concerned, a cost-cutting strategy does not produce the desired results (Table 10), although the

volume of employment rises significantly to the year 2010. The employment impulses in the cost-cutting scenario emanate from the private sector, and more than offset the job losses in the public sector. The greater part of the job creation effects in the private sector is directly due to the weakening of the capital intensification of production induced by the slower pace of wage growth. This leads to a significantly slower rate of productivity growth, which (per employee-hour) amounts to an average of around 2 per cent per annum during the prognosis period. The employment-intensity of economic growth increases accordingly. Over the period 1995-2010 employment is expected to rise by around 1.6 million.

Yet this increase in the number of wage-earners is not reflected in a decline in unemployment. The reason for this does not lie in the immigration from abroad of people of working age. Indeed, it is to be expected in the cost-cutting scenario that immigration will slow compared with the first half of the 1990s. Rather, the reason for the increase in the labour supply is to be found in the cost-cutting strategy itself, which serves to prolong working life, in particular by shortening higher education study periods and postponing retirement. In 2010 these measures will increase potential labour supply in Germany by around 1.7 million in persons.

Under the conditions prevailing in the cost-cutting scenario, the extent of the excess supply of labour in the year 2010 will, at 7 million people, be of a similar order of magnitude to that in 1995. At just under 9 per cent of the workforce, registered unemployment will, however, be slightly below the current level, as people are forced out of the labour force and into various forms of hidden unemployment: pressure to leave the labour market is likely to be particularly strong in east Germany, and there especially among women.

In the reference scenario, too, the goal of overcoming mass unemployment will probably still be a long way off in 2010, although the extent of excess labour supply will have been significantly reduced. The increase in employment is expected to be around 1 million persons higher than in the cost-cutting scenario, implying an increase of 2.6 million persons on the 1995 figure.

For the reference scenario the labour market statistics indicate a decline in the excess supply of labour of almost 1.7 million persons compared with 1995 by the year 2010, despite the higher incidence of immigration and cross-border commuting. Registered unemployment is expected to decline to under 7 per cent of the working population.

Table 10

Employment and Labour Market

	1991	1995	2010	
			Reference-scenario	Cost-cutting-scenario
	in 1000 persons			
Employment in Germany	36 511	34 868	37 500	36 500
Net cross-border commuters	-53	4	155	125
Resident population in em-	36 564	34 864	37 345	36 375
Labour supply	41 081	41 855	42 626	43 474
Excess labour surplus	4 517	6 991	5 281	7 099
Registered unemployment	2 602	3 614	2 711	3 562
Hidden unemployment	1 915	3 377	2 570	3 537
memo item:				
Unemployment rate in % 1)	6,6	9,4	6,8	8,9
West Germany	5,5	9,0	6,2	8,4
East Germany	10,7	14,0	9,3	11,2
1) Registered unemployment in relation to registered unemployment plus residents in employment.				
Sources: Federal Statistical Office; Labour supply calculations by the IAB; DIW Scenario model.				
DIW 99				

5 Conclusion

The positive connotations attached to the concept of "cost-cutting" quickly lose their attraction when, as is frequently the case, this goal is seen as a comprehensive concept of reducing spending in all sectors of the economy. In such a context cost-cutting does not aim merely to reduce avoidable costs, in the sense of raising efficiency and productivity, but rather amounts, in the final analysis, to a defensive restructuring of the entire economy. As justified as many of the demands may be from a microeconomic perspective, at the macro level a rigorous and comprehensive strategy of cost-cutting is ill-suited to resolving the problems facing Germany 's labour market. Indeed, there is a real danger that the prime target, that of reducing the burden of costs with respect to output, will not in fact be finally achieved at the end of the day.

A much more promising strategy would involve adopting an offensive approach to resolving Germany's economic problems. The strategy of improving the conditions for growth establishes the prerequisites for higher incomes and is more likely to help reduce over-supply on the labour market. In such a strategy, cost-cutting does not result from cutting spending, but by achieving growth while simultaneously raising efficiency, and thus raising the incomes of all participants.

BIBLIOGRAPHY

- Bach, S., M. Gornig, F. Sille, U. Voigt (DIW 1994): Wechselwirkungen zwischen Infrastrukturausstattung, strukturellem Wandel und Wirtschaftswachstum. Deutsches Institut für Wirtschaftsforschung, Beiträge zur Strukturfor schung, Heft 151, Berlin.
- Bundesversicherungsanstalt für Angestellte (BfA 1996): Neuregelungen in der Rentenversicherung - Wachstums- und Beschäftigungsförderungsgesetz. BfA-aktuell - Sonderinformationen. Berlin.
- Deutsches Institut für Wirtschaftsforschung (DIW 1989): Gewinne und Investitionen der Unternehmen in der Bundesrepublik Deutschland. Bearb.: B. Görzig. In: Wochenbericht des DIW, Nr. 20.
- Deutsches Institut für Wirtschaftsforschung (DIW 1992): Strukturwandel im Prozeß der deutschen Vereinigung, Analyse der strukturellen Entwicklung. Deutsches Institut für Wirtschaftsforschung, Beiträge zur Strukturfor schung, Heft 136, S. 113-123.
- German Institute of Economic Research (DIW 1996a): German Economic Trends: Severe Economic Setback in both East and West Germany, in: Economic Bulletin, Vol 33, No. 1, Aldershot.
- German Institute of Economic Research (DIW 1996b): Prospects for Germany's Long-term Development, in: Economic Bulletin, Vol 33, No. 10, Aldershot.
- German Institute of Economic Research (DIW 1997a): German Economic Trends 1997/98: Domestic Demand Remains Weak, in: Economic Bulletin, Vol 34, No. 8, Aldershot.
- German Institute of Economic Research (DIW 1997b): The World Economy in the spring of 1997, in: Economic Bulletin, Vol. 34, No.5, Aldershot.
- Gornig, Martin, B. Görzig, C. Schmidt-Faber und E. Schulz (1997): Entwicklung von Bevölkerung und Wirtschaft in Deutschland bis zum Jahr 2010. In: Deutsches Institut für Wirtschaftsforschung, Beiträge zur Strukturfor schung, Heft 166, Berlin.
- Görzig, Bernd (1985): Die Berechnung des Produktionspotentials auf der Grundlage eines capital-vintage Modells, in: Vierteljahrshefte zur Wirtschaftsforschung des DIW, Jg. 1985, Heft 4.
- Kommission der europäischen Gemeinschaften (EU 1993): Wachstum, Wettbewerbsfähigkeit, Beschäftigung; Herausforderungen der Gegenwart und Wege im 21. Jahrhundert, Luxemburg.
- Kultusministerkonferenz (KMK 1996): Prognose der Studienanfänger, Studierenden und Hochschulabsolventen bis 2015. In: Statistische Veröffentlichungen der Kultusministerkonferenz, Nr. 133, Bonn.
- Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (SVR 1997): Den Aufschwung sichern - Arbeitsplätze schaffen, Stuttgart.
- Seidel, Ehrentraud (1997): Reformüberlegungen zur Neuordnung der Renten wegen verminderter Erwerbsfähigkeit. In: Deutsche Rentenversicherung, Heft 1-2, S. 110-121.
- Statistisches Bundesamt (StaBua 1996): Bevölkerung und Erwerbstätigkeit, Fachserie 1, Reihe 4.1., Stand und Entwicklung der Erwerbstätigkeit 1995, Wiesbaden.