Determinants and macroeconomic significance of product wage and consumption wage

In macroeconomic terms, wages and salaries have a dual character. On the one hand they represent the largest cost factor for enterprises, on the other hand they are the principal source of income for households. For employees, it is net earnings valued in terms of units of consumption, i.e. the (real) consumption wage, that count, whereas the key variable for enterprises when making decisions is labour costs in relation to expected selling prices, i.e. the (real) product wage. The gap between product wage and consumption wage – the wedge driven between them – stems mainly from the burdens imposed by taxes and social security contributions. A large or increasing tax wedge, as prevailed in Germany in the nineties, not only results in significant welfare losses but also complicates wage policy and may lead to more rigid unemployment structures, not least because of its dampening effect on the incentive to work and on demand. The moderate pay settlements agreed for the years 2000 and 2001 and the reduction in the burden of taxes planned for next year, in particular, are thus steps in the right direction in macroeconomic and employment policy terms.

Agreed pay rates, actual earnings and wage drift

Agreed pay rates

Wage trends in Germany are primarily geared to the pay rates formally negotiated between management and labour. For firms which are bound by the terms of collective pay agreements and for employees organised in trade unions, these rates of pay form the basis of the wages and salaries that are paid. Despite the erosion of collective pay bargaining that is evident in some areas and the falling membership of trade unions, about 90 % of all wage and salary earners in Germany subject to social security contributions are covered by wage settlements concluded at the company or sectoral level, according to data from the Federal Ministry of Labour and Social Affairs.

As can be seen from the Bundesbank's pay rate statistics, agreed pay rates in Germany, including negotiated ancillary benefits (such as holiday and Christmas bonuses, in particular), rose on a monthly basis by a total of 38.3 % between 1991 and 1999, or by 4.1 % per year. However, this masks some disparate developments over the past decade. Above-average growth rates were recorded at the beginning of the nineties, owing both to the relatively high wage settlements in western Germany and the rapid convergence of east German negotiated wages to the relevant west German standards that had been pursued by the trade unions. In the second half of the nineties, by contrast, negotiated pay raises were quite moderate on aggregate, given the narrower leeway for income distribution and the favourable price climate.

Negotiated working hours

The reduction in negotiated annual working hours also has to be taken into account, which resulted in correspondingly higher rates of growth in pay measured on an hourly basis. Reductions in standard working hours in return for forgoing increases in income that would otherwise have been possible accounted for just over ⅓ percentage point per year of the increase in pay rates during the nineties. Nevertheless, working hours played a far less important role in wage bargaining in the nineties than they had done in western Germany in the second half of the eighties. As was the case for the pay component, the trend towards reduced working hours was driven mainly by the rapid convergence between eastern and western Germany. Thus in eastern Germany negotiated working hours decreased by ½ % per year between 1991 and 1999, whereas the corresponding rate in western Germany was ¼ %. East-West parity has largely been achieved meanwhile in the amount of paid holiday granted, whereas negotiated weekly working hours in eastern Germany in 1999, at 39 ¼ hours, were still just under two hours more than in the west.[1]

Wage drift and actual earnings

Although pay agreements, for the time of their duration, largely determine the level of actual gross earnings, they by no means do so completely. Depending on the relative strength of the demand for labour, the wages and salaries that are actually paid differ from agreed pay rates in terms of their level and their trend. In the period under review, actual earnings rose by 3.3 % per year; this was

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1 See, for example, Wirtschafts- und Sozialwissenschaftliches Institut in der Hans-Böckler-Stiftung (ed.), WSI-Tarifhandbuch 2000, Frankfurt am Main.

¾ percentage point per year less than the agreed rates of pay (on a monthly basis). This negative wage drift throughout the nineties stands in sharp contrast to developments in the second half of the eighties, when actual earnings had risen broadly in line with agreed pay rates.

Components of wage drift

Negative wage drift (on a monthly basis) is caused partly by differences between actual and negotiated working hours, known as time drift. It also stems in part from divergencies between actual and negotiated hourly compensation. The two components are interrelated, however. Higher overtime working, for example, may lead both to a positive time drift and to a positive wage drift on an hourly basis, owing to overtime premiums. Nevertheless, decomposing wage drift into these two components provides further insights into the reasons for its decline since the early nineties.

Time drift

Time drift, which mainly reflects part-time effects, overtime and hours lost due to short-time working and sickness,[2] was in fact slightly positive throughout the period under review. The main reason for this was the exceptionally wide time drift in 1992 (3.4%). This primarily reflects the fact that the number of short-time workers in eastern Germany, following a huge rise in 1991, decreased by over 1.2 million in the following year. In addition, the number of working days in 1992 was 1½% higher than in 1991. If the exceptional year 1992 is disregarded, the past decade shows a negative time drift amounting to ¼% per year. This mainly reflects the increased share of part-time work, which ac-

Agreed pay rates, actual earnings and wage drift

Year/Period	Agreed pay rates [1]	Actual earnings [2]	Wage drift [3]
	1991 = 100		
1992	111.0	110.5	99.6
1993	118.2	115.6	97.8
1994	121.6	118.1	97.1
1995	127.2	122.2	96.1
1996	130.3	124.5	95.6
1997 p	132.2	125.5	94.9
1998 p	134.6	127.3	94.6
1999 p	138.3	129.6	93.8
	Change from previous year in %		
1992	11.0	10.5	− 0.4
1993	6.5	4.6	− 1.8
1994	2.9	2.2	− 0.7
1995	4.6	3.5	− 1.1
1996	2.4	1.9	− 0.5
1997 p	1.5	0.8	− 0.7
1998 p	1.8	1.5	− 0.3
1999 p	2.8	1.8	− 0.9
1991–1999 [4]	4.1	3.3	− 0.8

1 Negotiated wage and salary level on a monthly basis. — **2** Gross wages and salaries per employee in Germany. Source: Federal Statistical Office. — **3** Deviations of wages and salaries per employee from the agreed pay rates on a monthly basis. — **4** Annual average change in %.

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counts for as much as ½ percentage point per year, mainly owing to the sharp rise in jobs below a defined earnings threshold exempt from social security contributions. This development was partly offset by a fall in the sickness ratio in western Germany during the nineties and the declining significance of short-time working.

Seen from a somewhat longer-term perspective, however, wage drift (measured on an hourly basis) was a more crucial factor behind the divergence of agreed pay rates and actual earnings. On an hourly basis, the aggregate increase in actual gross earnings recorded between 1991 and 1999 was 7½% (or 1 percentage point per year) lower than the rise in

Wage drift on an hourly basis

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2 Calendar effects, i.e. differences in the number of working days, may also play a role in individual years.

agreed pay rates. This gap may be seen primarily as an indication of an excessive rise in agreed pay rates (from the employer's point of view), which firms attempted to counteract by abolishing or reducing additional benefits not covered by the pay agreement, by introducing some flexibility into the formal pay agreement or by opting out of membership of the employers' federation altogether. The latter seems to have played a major role above all in eastern Germany in the early nineties, as employers sought to alleviate the sharp cost pressures generated by pay settlements. Moreover, in the recent past enterprises in both parts of Germany appear to have made increasing use of the extended flexibility that has been incorporated into wage agreements in the past few years, for example by bringing working hours more closely into line with operational requirements by defining an annual quota for working time. This lessened the need to pay traditional overtime premiums.

Product wage, consumption wage and tax wedge

Product wage Wages and salaries have a key bearing both on the demand for labour and the domestic supply of goods, on the one hand, and on firms' profitability and price formation, on the other. At a given level of labour productivity and an existing price level, total labour input costs are the relevant decision criterion for employers with respect to the demand for labour and the appropriate combination of inputs. In microeconomic terms, labour costs comprise both direct remuneration and all non-wage labour costs, which are not necessarily related closely and directly to labour output.[3] Ultimately, it is the cost structure which determines how a given volume of work is divided up into working hours and among employees. In general it may be said that the demand for employees decreases (particularly at times of economic uncertainty) as the proportion of fixed labour costs rises and that of variable or profit-related elements falls, and vice versa.

There are various statistical definitions for what expenditure items should be included in labour costs. Whereas the labour cost survey of the manufacturing industry and selected service sectors, which is carried out every four years and was last conducted in 1996, is based on a more comprehensive and more deeply disaggregated concept, the labour cost concept used in the national accounts ("compensation of employees") is more suitable for macroeconomic analyses, not least because of the timeliness of the data. Compensation of employees comprises not only actual employee earnings but also employers' social contributions.

Statistical framework for calculating labour costs

Non-wage labour costs, which in addition to statutory social security contributions include employers' contributions to company pension plans as well as imputed social security contributions for civil servants, rose by 4.7 % per year in the last decade, clearly outpacing gross earnings. This mainly reflects the in-

Non-wage labour costs

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3 From a macroeconomic point of view, labour costs comprise not only labour costs for employees but also the (imputed) entrepreneur's remuneration, which should not be attributed to the corporate profit.

crease in contribution rates to the statutory social security funds which, totalling 41¼ % at the end of 1999, were 6 percentage points higher than they had been at the start of 1991. The cost to employers of the factor labour per employee rose on balance between 1991 and 1999 by 32.3 %, or 3.6 % per year. On an annual average, approximately ⅓ percentage point of this increase in labour costs was due to the rise in employers' social contributions. Consequently, their share in total labour costs increased during the nineties from just over 18 % to nearly 20 %. The share of gross earnings in total labour costs decreased accordingly from nearly 82 % to 80 %.

Levies on gross earnings

Employees, too, were affected by the rising level of government levies in the form of higher social security contributions. Moreover, the amount of wage tax (including the solidarity surcharge)[4] payable on gross earnings expanded faster owing to tax progression effects – despite several tax relief measures such as a marked increase in the basic tax allowance.[5] As a result, the rise in net earnings per employee during the nineties, at an annual average of 2.1 %, was more than 1 percentage point per year less than the improvement in gross earnings.[6] Compared with total labour costs, i.e. the relevant variable for enterprises, the growth deficit of households' net earnings amounted to as much as 1½ percentage points per year on average during the past decade.

Wedge due to direct levies widened further in the nineties ...

The wedge between the demand price and the supply price of the factor labour caused by direct government levies thus increased on balance during the period under review.

Whereas in 1991 households received almost 57 % of the compensation of employees paid by enterprises directly, this figure had dropped to just under 51 % by 1997. This means that the growing burden on the factor labour, which had been observed for quite some time, was amplified further in the nineties. In the early sixties, the average burden of taxes and social security contributions had amounted to less than 30 %, in the early seventies to approximately one-third and in the early eighties to just over 40 %. For employees, wages and salaries thus account for a smaller share of their disposable income, which, in turn, largely determines the scope of private consumption and consequently affects the domestic demand for goods. However, the increase in the average burden does not fully reflect the level of the marginal burden that now applies. This was certainly detrimental to the return on investment in education and is likely to have reduced the willing-

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4 In addition, many employees pay a voluntary church tax.
5 However, the increase in wage tax in the national accounts was also affected by two exceptional statistical effects. Firstly, wage tax receipts were artificially boosted from 1996 owing to the revision of the family allowance system within the framework of the 1996 Annual Tax Act. This revision resulted in the abolition of children's allowance, which had taken the form of a tax allowance deductible from gross earnings (child benefit, which is paid as a government transfer, was concurrently increased). Secondly, recorded wage tax receipts were likewise boosted by the change in the method of granting government financial assistance to home buyers, which likewise came into effect in 1996. Whereas it previously took the form of a special tax allowance, which largely reduced wage tax, the grant payable to home buyers as from 1996 is recorded in the national accounts as a capital transfer. During the transitional period until 2004, in which the two systems will coexist, shifts will thus occur between wage tax and capital transfers.
6 For simplicity it is assumed that the amount of wage tax deducted at source is identical to the final tax assessment on the corresponding labour income. In reality, however, these two variables may differ owing to supplementary tax payments or tax refunds.

Compensation of employees, taxes and levies, and net earnings *
– per employee in Germany –

Year/Period	Compensation of employees	Employers' social contributions	Average gross earnings	Deduction (wage tax and employees' social contributions)	Average net earnings
DM thousand					
1991	48.2	8.7	39.4	12.1	27.4
1992	53.3	9.7	43.6	13.8	29.8
1993	55.6	10.0	45.6	14.4	31.2
1994	57.4	10.8	46.6	15.3	31.3
1995	59.6	11.4	48.2	16.6	31.6
1996	60.9	11.8	49.1	17.4	31.7
1997 p	61.8	12.3	49.5	18.0	31.5
1998 p	62.6	12.4	50.2	18.3	31.9
1999 p	63.8	12.6	51.1	18.7	32.4
As % of compensation					
1991	100.0	18.1	81.9	25.1	56.8
1992	100.0	18.2	81.8	26.0	55.9
1993	100.0	18.0	82.0	25.9	56.2
1994	100.0	18.8	81.2	26.6	54.6
1995	100.0	19.1	80.9	27.8	53.1
1996	100.0	19.3	80.7	28.6	52.1
1997 p	100.0	19.9	80.1	29.2	50.9
1998 p	100.0	19.8	80.2	29.2	51.0
1999 p	100.0	19.8	80.2	29.3	50.9
Change from previous year in %					
1992	10.6	10.8	10.5	14.5	8.8
1993	4.3	3.1	4.6	3.9	4.9
1994	3.2	7.9	2.2	6.2	0.3
1995	3.9	5.9	3.5	8.5	1.0
1996	2.1	3.2	1.9	5.0	0.2
1997 p	1.5	4.2	0.8	3.7	– 0.8
1998 p	1.4	1.0	1.5	1.4	1.5
1999 p	1.8	1.9	1.8	2.3	1.5
1991–1999 1	3.6	4.7	3.3	5.6	2.1

* Bundesbank calculations on the basis of data from the Federal Statistical Office; discrepancies in the totals are due to rounding. — 1 Annual average change in %.

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ness of individuals to supply labour and to take on employment. Moreover, it is noteworthy that social security contributions have increasingly been used like a form of taxation over the past few years and that it is becoming ever harder to identify offsetting effects of the increase in the total levy burden in the form of equivalence.

Furthermore, the growing burden of government levies has increasingly narrowed the leeway for real income distribution available to labour and management. The fact that the government used the macroeconomic scope for income distribution in order to fund social security benefits by levering up statutory nonwage costs has probably placed a handicap on the pay bargaining process and made it harder to reduce unemployment. This may be particularly true of those sub-sectors of the labour market which are relatively sensitive to pay rates and which are widely exposed to international competition or where switching to the shadow economy is an option. In addition, this development has doubtless hampered the process of structural change towards labour-intensive service industries.

... and has stabilised at a high level of late

The last two years saw at least some stabilisation in the relationship between labour costs and net earnings, and a slight improvement is to be expected in the coming years. This is partly attributable to the reduction in income tax from the beginning of 2001 and partly to the progressive reduction in pension contribution rates which was introduced in April 1999 as part of the "ecological tax reform". Nevertheless, at the present time it seems unlikely that the gap between product wage and con-

sumption wage, which continued to broaden throughout the nineties, will narrow significantly in the near future. With respect to the production factor labour, therefore, Germany is likely to remain among the "high levy countries" by international standards.[7]

However, the "wedge" between product wage and consumption wage is determined not only by the direct burden that taxes and social security contributions impose on the factor labour but also, at the macroeconomic level, by relative prices at the consumer and producer level (see also the explanations given on page 23). In terms of incentives for work and employment, the real marginal tax wedge, which measures the effective marginal burden on labour input, is of major importance. Ultimately, enterprises and employees alike are interested not so much in the growth of *nominal* labour costs and net earnings as in the trend in *real* wages and salaries. In this context consideration must also always be given to the question of whether price trends are consistent with the requirement of price stability. Lowering excessive real labour costs by means of inflation is incompatible with this requirement. For firms' profitability it is the net selling price (excluding indirect taxes) of their products that is the yardstick, whereas the key criterion for employees is the scope for consumption offered by their labour income. Therefore consumer prices are the appropriate reference variable for calculating employees' real wages.

Price wedge

7 See European Commission, Tax-benefit systems and incentives for work and job creation, European Economy, no. 69, 1999, pages 157–180.

Product and consumption wage *

Change from previous year in %

Year/Period	Product wage [1]	Consumption wage [2]	Tax and price wedge [3]	of which	
				Tax component [4]	Price component
1992	5.6	4.2	0.7	0.9	− 0.2
1993	1.1	1.1	0.0	− 0.3	0.3
1994	0.8	− 2.2	1.7	1.6	0.1
1995	1.3	− 0.8	1.1	1.5	− 0.4
1996	1.2	− 1.6	1.5	1.0	0.5
1997 p	0.9	− 2.5	1.7	1.2	0.6
1998 p	0.5	0.6	0.0	− 0.1	0.0
1999 p	1.5	0.8	0.4	0.2	0.2
1991 – 1999 [5]	1.6	− 0.1	0.9	0.7	0.2

* Per employee in Germany. Bundesbank calculations on the basis of data from the Federal Statistical Office. — 1 Real labour costs; compensation per employee, divided by the GDP deflator which has been adjusted for the effects of indirect taxation. — 2 Real net earnings; net wages and salaries per employee, divided by the deflator of household consumption expenditure. — 3 Change in percentage points. — 4 Total of direct levies. — 5 Annual average change in % or percentage points.

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Trends in producer and consumer prices can diverge significantly, either because of the burdens on consumption that stem from special or general excise taxes or because of price shifts in external trade (terms of trade effect). Thus consumer price increases outpaced the upward movement in domestic producer prices (measured by the GDP deflator adjusted for indirect taxes) by approximately 1 percentage point in both 1996 and 1997. In the year 2000, too, the rate of consumer price inflation is expected to be significantly higher than the rate of increase in domestic producer prices, owing to the sharp rise in oil prices, the depreciation of the euro in the foreign exchange markets and higher energy taxation.

Real tax wedge

Throughout the nineties the contribution of the price component to the widening of the tax and price wedge averaged 0.2 percentage point per year; approximately two-thirds of this was accounted for by the rise in indirect taxation. Consequently, the differential between the rates of change of labour costs and net compensation totalled 1¾ percentage points per year in real terms. On the one hand, price-adjusted labour costs – which in this case have been approximated using the tax-adjusted GDP deflator – rose by an average of 1.6 % in the last decade. On the other hand, real net earnings per employee declined slightly on aggregate; this decline has to be seen in the context of an excessively high starting base (especially in the early nineties), the narrow scope for real income distribution throughout the last decade and a per-

The concept of the "tax wedge" on the labour market

Government taxes and social security contributions, which impose a burden on the production factor labour, drive a wedge between the demand price of labour (product wage) and the supply price of labour (consumption wage). [1] This usually results in evasive reactions on part of the parties concerned. Such substitution effects are mainly determined by the level of the (effective) marginal tax rate and the duration of the time horizon. Rising burdens generally result in disproportionately large increases in efficiency losses on the labour market. In the long term, for a given tax wedge (irrespective of the payment burden) it is the respective elasticities of labour supply and labour demand that determine the actual distribution of burdens and thus the relationship between the cost and income effects of the tax wedge.

The tax wedge (θ) itself is a measure of the difference between product wage (w_p) and consumption wage (w_c). Expressed as a fraction of the product wage, this gives us

$$(1) \quad \theta = (w_p - w_c) / w_p$$

From the employers' point of view, nominal labour costs comprise direct remuneration and all additional non-wage labour costs. In the terminology of national accounts this is synonymous with compensation of employees, which consists of gross wages and salaries plus employers' social contributions. If w_{br} stands for the gross earnings per employee and τ_{Ag} for the relationship between employers' social contributions and those gross earnings, the (real) product wage per employee at a given selling price of P_Y is given by

$$(2) \quad w_p = w_{br} \cdot (1 + \tau_{Ag}) / P_Y$$

From the employees' point of view, by contrast, net earnings are the relevant variable; they are calculated as gross earnings less employees' social contributions and wage tax (including solidarity surcharge) payable by employees. If τ_{An} and τ_T denote the shares in gross wages and salaries accounted for by employees' social contributions and wage tax, respectively, and taking into account the impact of indirect tax (τ_C) on the prices of consumer goods, the real consumption wage per employee is calculated by

$$(3) \quad w_c = w_{br} \cdot (1 - \tau_{An} - \tau_T) / [P_C \cdot (1 + \tau_C)]$$

Equations (1) to (3) then result in the following approximation for the tax wedge:

$$(4) \quad \theta = \frac{\tau_T + \tau_{SV} + \tau_C + \tau_P}{1 + \tau_C + \tau_P},$$

where τ_{SV} stands for the combined share of social contributions of employees and employers and $\tau_P = (P_C - P_Y) / P_Y$ denotes the divergent development of selling prices and (pre-tax) consumer prices (which, in addition to τ_C, can be interpreted as a component of the "price wedge"). From a macroeconomic perspective, the price wedge is also determined by shifts in the terms of trade. A deterioration in the terms of trade resulting from dearer import prices, for example, reduces the real domestic leeway for income distribution. The price wedge has the effect of a tax on domestic incomes in favour of foreign countries.

The relationship between product and consumption wage can also be expressed as follows:

$$(5) \quad w_p = (1 + \frac{\theta}{1 - \theta}) \cdot w_c = \frac{1 + \tau_C + \tau_P}{1 - \tau_T - \tau_{SV}} \cdot w_c$$
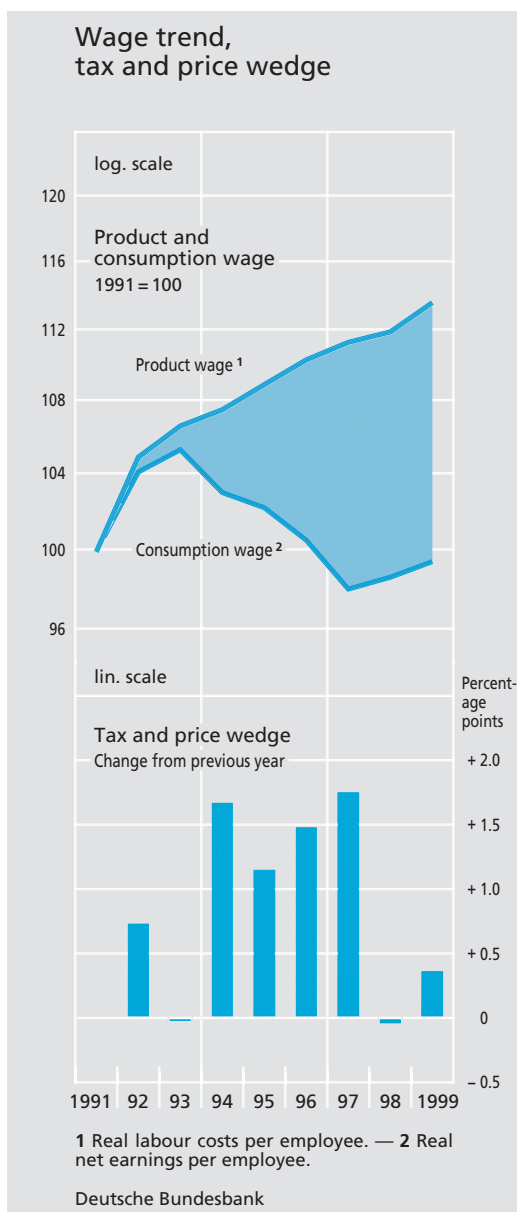
The term in the numerator of the quotient is of particular interest in terms of its monetary policy implications as it denotes the factors that have a direct impact on consumer prices.

The marginal levy burden, which is relevant for incentive and employment effects, differs from the average levy ratio in that the wage tax volume increases, even without any changes in tax legislation, because of tax progression whereas social security contributions are only payable within a defined band above a certain minimum earnings level up to a maximum assessable income limit. These two effects can be expressed by what is called residual income elasticity. This indicator measures the extent to which a relative change in product wage results in a relative change in consumption wage. If θ denotes the average effective burden and θ' the effective marginal burden, the residual elasticity (η) is given by

$$(6) \quad \eta = \frac{1 - \theta'}{1 - \theta}$$

In this context, it must also be taken into account that, particularly in the case of low incomes, the loss of social benefits when taking on employment liable to taxes and social security contributions can result *de facto* in a very high (implied) marginal burden (the residual elasticity is correspondingly low owing to the transfer payment forfeit ratio). This, in turn, adversely affects the willingness to look for and take on a job (the so-called poverty trap problem).

[1] See also Lindbeck, Assar, Unemployment and Macroeconomics, Cambridge 1993.

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Wage trend, tax and price wedge

log. scale

Product and consumption wage
1991 = 100

Product wage [1]

Consumption wage [2]

lin. scale

Tax and price wedge
Change from previous year

Percentage points

1 Real labour costs per employee. — 2 Real net earnings per employee.

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enterprises' demand for labour and thus of the level of employment. *Ceteris paribus,* the higher the real compensation payable by enterprises, the lower is the demand for labour. In terms of employment policy, therefore, wage negotiators should take account of the anticipated trend in employers' social contributions. This is all the more true as econometric studies have shown that the tax wedge due to social security contributions and wage tax adversely affects the level of unemployment in macroeconomic terms.[8] Moreover, wage negotiations must take account of both terms of trade effects and the impact of changes in indirect taxation on prices when assessing the price component. The *"ex ante* income distribution" in favour of foreign countries or the government sector resulting from a deterioration in the terms of trade or increases in indirect taxes must not give rise to pay rate conflicts to the detriment of employment opportunities.[9]

Negative effects on the labour market in the nineties

The sharp increase in the price of the factor labour in the early nineties, which was caused both by the relatively high pay settlements in western Germany and the rapid convergence of agreed east German pay rates towards west German standards, had a marked impact on the labour market. In the three-year period up to the end of 1993 the number of employed persons in Germany decreased by nearly 2 million. It is true that this owed much to the adjustment requirements of east Ger-

sistently rising trend in structural unemployment.

Tax wedge, wage trends and employment

Product wage and demand for labour

The real product wage, i.e. compensation per employee in relation to the price of domestic value added, is an important determinant of

8 See, for example, Hansen, Gerd, Unemployment and the Wage Wedge in Germany, Simulations of a Small Cointegrated System, Zeitschrift für Wirtschafts- und Sozialwissenschaften, vol. 116, pages 167–183.
9 See Deutsche Bundesbank, Macroeconomic requirements for a pay-rate policy fostering employment, Monthly Report, February 2000, page 38.

man firms to the conditions of a free market economy. Nevertheless, wage policies geared more to productivity trends (adjusted for re-dundancy-induced distortions) and regional conditions could have significantly alleviated the adjustment process, which alone in the east German manufacturing sector (including mining) resulted in 1.3 million redundancies during this period. However, in the west Ger-man manufacturing sector, too, approximate-ly 1 million jobs were lost on balance in the first third of the last decade, which was only partly due to increasing outsourcing by firms. The high pay settlements of 1995, reinforced by the disproportionate rise in employers' social contributions, in conjunction with the appreciation of the Deutsche Mark, led to a noticeable slowdown in economic activity which, with a certain time lag, likewise had an adverse effect on the labour market.

Moderate wage settlements for more employment

The strategy of moderate wage settlements that has basically been pursued by labour and management ever since began to bear fruit at the end of the last decade. In 1998 and 1999 there was a slight growth in employ-ment on an annual average, although it should be pointed out that this was support-ed by the deployment of labour market policy measures on a massive scale, particularly in 1998. In terms of costs, the conditions for a sustainable expansion of employment on the "primary" labour market during the coming years may be gauged as rather favourable. This owes something to both the latest round of pay agreements – which also give firms greater planning certainty because of their longer duration – and the further reduction in

non-wage labour costs envisaged by the Fed-eral Government.

Although moderate pay increases throughout the economy can contribute significantly *per se* to ensuring that the current economic up-turn in Germany is accompanied by a distinct growth in employment, a sufficient degree of wage flexibility and wage differentiation is of equal importance, particularly in the lower skill segments. However, no significant pro-gress has been made in this respect in the past few years. In order to maintain or create employment opportunities for poorly quali-fied persons with a low productivity, it is es-sential to make the product wage range more congruent with the productivity profile.

Wage flexibility and wage differentiation

At the same time it must be ensured that the consumption wage clearly exceeds the in-come and other benefits (e. g. not having to move home) that can be obtained from non-employment.[10] The willingness to work de-pends on the relationship between the con-sumption wage and alternative sources of in-come which are available if no "official" em-ployment is taken on. The acceptance wage, which is determined by that relationship, marks the minimum wage of the labour sup-ply. This primarily concerns low-skilled work-ers whose jobs are characterised by a relative-ly low level of productivity, so that the market rate of remuneration is unlikely to exceed their demands.

Acceptance wage and labour supply

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10 Another factor is the extent to which social security expenditure fosters the flexibility of the labour market. For example, high social security contributions that are merely used to finance generous wage substitutes would have a doubly adverse effect on the labour market.

In order to better (re-)integrate these individuals into the work process, the statutory share of income available to non-workers would have to be reviewed and the marginal tax wedge reduced. One possible approach to achieving the latter is currently being pursued by pilot schemes which were agreed in the context of the Alliance for Jobs, Training and Competitiveness and which are due to start in the second half of the current year. These model schemes are aimed at making it easier for low-skilled workers and the long-term unemployed to take on employment liable to taxes and social security contributions by subsidising social security contributions, thus reducing non-wage labour costs. As has been indicated by various studies,[11] the efficacy of such forms of wage subsidies depends on their practical implementation (target-group orientation versus promotion of larger segments of the labour market, scope and duration), the functioning of the labour market and the fiscal costs involved. In practice it is hard to avoid the dangers that firms might simply cash in on the subsidy without creating any additional jobs, that new recruits might merely displace existing employees or that staff taken on might be shed again as soon as the subsidies are terminated.

Marginal tax burden

The interplay between labour supply and labour demand hinges more on the marginal burden than on the average levy burden. Generally, the marginal burden is the relevant criterion with respect to the number of working hours individuals are willing to work. Another relevant parameter is the degree to which pension schemes favour early retirement, which in microeconomic terms is tantamount to taxing people who work until the normal retirement age.[12] As most married couples in Germany are jointly assessed for income tax purposes, the marginal burden is also relevant in the family context in deciding how much labour a "second earner" is willing to supply. The same applies whenever the costs of, say, potential vocational training have to be weighed against the benefits. Owing to the scaled progression of the German income tax system, the marginal tax burden is usually greater than the average burden. Taking the average pay of a skilled production worker as a yardstick, an unmarried employee in 1999 only received 35 ½ % of the additional costs of a pay rise incurred by the enterprise.[13] Almost two-thirds of the extra labour costs in this case accrued to the government in the form of social security contributions and wage tax (including the solidarity surcharge).

The reduction in income tax rates planned for the next few years must be measured not least by the degree to which it will help to alleviate the marginal burden in the medium and upper income brackets. A marked and sustained reduction in the degree of progression of the income tax

The challenge to economic policymakers

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11 See, for example, Pearson, Mark and Stefano Scarpetta, An Overview: What Do We Know About Policies to Make Work Pay?, OECD Economic Studies, No. 31, 2000/2, pages 11–24 and Schupp, Jürgen et al., Zuschüsse zu den Sozialversicherungsbeiträgen im Niedriglohnbereich: Wenig zielgerichtet und teuer, DIW-Wochenbericht 27, 1999.
12 See OECD, Economic Outlook, No. 63, June 1998, pages 185 ff.
13 See also Boss, Alfred, Zur Belastung der Arbeits- und Kapitaleinkommen in Deutschland, Institut für Weltwirtschaft, Kieler Arbeitspapiere Nr. 934, 1999.

scale is crucially needed. Any strategy that is to be successful in the long term must further curtail the government's direct and indirect share of the national product, permanently narrow the tax wedge between product wage and consumption wage[14] and lay the basis for a balanced relationship between consumption wage and acceptance wage.

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[14] This must also be seen against the background of the future demographic burdens. For a detailed analysis see Deutsche Bundesbank, Prospects for, and obstacles to, a stronger reliance on funding in the statutory system of old-age provision in Germany, Monthly Report, December 1999, pages 15–31.