

Debate on Effective Tax Burden of Corporations in Europe

Knowledge about the levels of tax burden is important for political debate in many ways, since the tax burden decides whether enterprises have competitive advantages or disadvantages in relation to their foreign competitors. Furthermore, tax categories and levels of taxation play an important role in the realisation of the European common market, as discussions about the code of conduct of the European commission and similar steps of the OECD against harmful tax competition show.



■ The key aim of carrying out international tax comparisons is to calculate and then compare the tax burden of enterprises. However, the accuracy of the results of tax burden comparisons differs depending on how detailed an analysis is and which taxes are included. Accordingly, the figures resulting from these calculations also differ.

At the beginning of 1999, the OECD submitted figures to German politicians for an effective average tax burden, which caused confusion both in government and in the economy, as the figures were contradicting traditional tax burden comparisons. According to these figures, with about eight percent taxation German corporations would have by far the lowest effective tax burden

in international comparisons. Germany would be a tax haven, while Italy with 75 percent would rank the highest (see Table 1).

These results contradict not only calculations made by the ZEW using the European Tax Analyzer, but also other OECD reports on the effective tax burden

of corporations in international comparisons. The methodological foundations of the OECD figures are presented and compared to the ZEW approach below. The results of the OECD are based on the methodology of so-called 'aggregate economic' tax rates. They are calculated by taking the tax burden of enterprises as quotient of the total economic revenues from corporate taxation and the total economic revenues from corporate activities and assets (see Figure 1).

Although this formula is theoretically correct, this approach is problematic above all from a German point of view. The relevant tax revenues used are only the tax payments made by corporations (corporate income tax, solidarity levy and trade tax). Thus the entire income tax and trade tax on profits for sole traders and partnerships are not included in the calculation. However, in Germany these legal forms account for about 90 percent of all German enterprises.

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Problematic reference basis

In addition, the profits from all economic activities are taken as the relevant revenues as they are allocated by the national accounts. These activities include revenues from sole traders and partnerships, agriculture and forestry, and presumably also revenues from tax exempt institutions such as the German Bundesbank, revenues from rentals or

considered in its calculation and the profits from corporate activities according to the national accounts do not stem from the same years. Instead, they are the cash tax receipts which have been adjusted for tax loss carryforwards and tax loss carrybacks, whereas these loss treatments do not affect corporate profits.

As a result, comparably low tax revenues oppose a very substantial profit figure, which explains the effective low

ing tax ratios using the national accounts and data from the German Federal Statistical Office. Both research methods were found to be entirely unsuitable for the purpose and lead to considerable underestimates of the tax burden.

All in all, OECD calculations are not suitable measures of the level of the corporate tax burden, which is above all attributable to the fact that it is statistically not possible to assign tax revenues sufficiently to individual categories of income. Even if these assignment problems were lower in other countries, an international comparison of tax ratios thus determined would be problematic, as the methods and definitions of the national accounting systems of other countries are different.

Figure 1: Calculation of aggregate economic tax rates

$$\text{Average effective tax burden} = \frac{\text{Tax revenues}}{\text{Profits from entrepreneurial activities according to national accounts}}$$

royalties and revenues from capital assets. Whether the latter also include the incomes of private households cannot be identified. It is however likely, as the national accounts do not differentiate between enterprises and private households.

The use of aggregate economic tax ratios according to national accounts figures for the calculation of the corporate tax burden is also questionable for other reasons: the aggregate tax ratio is a static concept, and the tax revenues

that the tax burden figures for Germany were too low, which was likely to lead to an underestimate of the effective German tax burden. Calculations for Germany that have been adjusted for extraordinary influences result in a value of about 20 percent; however, this figure still remains at the lower end of the range.

In its study "The tax burden of German enterprises in national and international comparison" (Bonn, March 1999), the German Federal Ministry of Finance also dealt with the methodology of determin-

Tax rates irrelevant for corporate decisions

With regard to the decision making of companies, aggregate economic tax ratios are of no relevance at all. Conversely, these require methods which put tax burdens into relation to the relevant economic factors (e.g. return on capital or cash flow) and include all relevant differ-

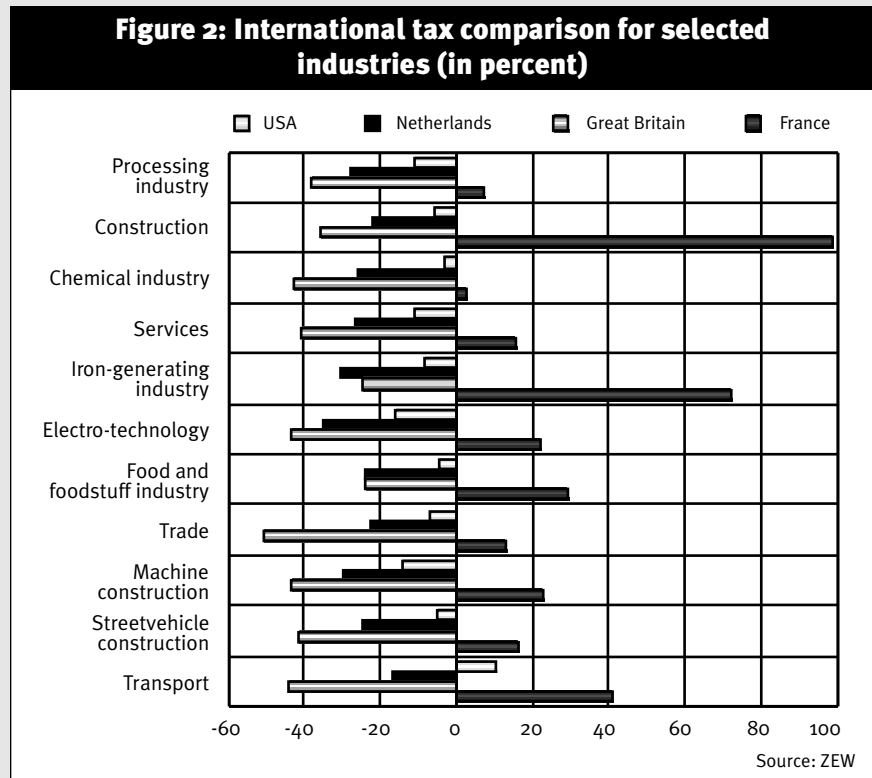
Table 1: International tax burden comparison (in percent)

Country	Average tax burden by OECD	Tax scale-based rates	Effective marginal tax rates	European Tax Analyzer
Belgium	26	40.17	23.48	–
Denmark	–	34.0	22.83	–
Germany	8 (20)	56.66	37.02	36.7
Finland	–	28.0	18.14	–
France	26	41.67	40.71	40.6
Greece	–	35.0	13.74	–
Great Britain	49	31.0	22.34	20.1
Ireland	–	32.0	22.29	–
Italy	75	41.25	17.73	–
Luxembourg	–	37.45	23.48	–
Netherlands	22	35.0	23.16	23.0
Austria	–	34.0	27.04	–
Portugal	–	37.4	22.52	–
Sweden	–	28.0	17.19	–
Spain	–	44.75	32.76	–
USA	24	40.75	–	31.0

Source: OECD, ZEW and University of Mannheim

Research Results

The amount of the tax burden always depends on concrete individual cases, which provide the basis for the calculation. For example, it depends on the structure of assets, the financing or the profit distribution behaviour of the enterprise examined. According to the character of these factors influencing the tax burden, the result will be different in international comparison. In Germany, a comparably high level of income-dependent taxes can be found. From the point of view of German enterprises, this means that the lower the profits, the lower the burden. A similar rule applies to a high intensity of tangible assets, as Germany has comparably favourable depreciation regulations. Figure 2 shows the tax burdens as they were computed by the European Tax Analyzer for enterprises from different industries. The comparison of the tax burdens was based on industry-typical company data regarding corporate assets, financial means and profits. The comparison reveals that different economic corporate data of German enterprises can effect variations in the tax burden differences between these German enterprises (zero line) and for-



eign companies. However, the industry comparison also arrives at the result that the burden ranking of the individual countries remains (almost) the same. According to this ranking, the

German tax burden lies below the French one, but conversely, the low burden level of Great Britain and the Netherlands is not achieved by any of the cases examined.

ences between national tax systems, taxes (e.g. on profits and on capital), tax bases and tax rates using a multi-period approach. And such scientifically acknowledged methods exist. For example, the methodology of effective marginal tax rates, which is also used by the OECD in other examinations, or the European Tax Analyzer, which was developed by the ZEW in cooperation with the University of Mannheim and which calculates the effective average tax burden of companies over a period of ten years.

Table 1 shows the tax scale-based tax burden according to the tax rates, the effective marginal tax burden and the effective average tax burden of corporations in various countries, which was calculated with the European Tax Analyzer.

The methodology of effective marginal tax rates is derived from an investment-theoretical approach stemming from the field of micro-economics. This approach departs from an additional (marginal)

investment which an entrepreneur plans to make, and calculates the accruing tax payments. Taking into account interest and inflation over an infinite period of time, the effective marginal tax burden (marginal tax rate) of the investment project is calculated. The effective marginal tax burden changes the after tax return of the investor and thus influences the decision on whether the investment is carried out or not. Various financing alternatives, such as retained earnings as well as new equity and debt financing, are also considered.

Corporate tax burden

Only recently a study on effective corporate tax burden was completed for all EU member states. This research work was commissioned by the Dutch Ministry of Finance and carried out by the University of Mannheim, Germany in cooperation with the Amsterdam office

of the international law firm Baker & McKenzie at the beginning of 1999. Under the title "Survey of the Effective Tax Burden in the European Union" it has subsequently been submitted to the Finance Ministries of all EU member states, as well as the European Commission and the OECD (see Table 1).

Conversely, the method of the simulation of the tax assessment calculated with the help of corporate models (for example by using the European Tax Analyzer) follows a rather business-based approach to the calculation of effective tax burdens. For this purpose, tax-relevant data of representative enterprises are considered as authentically as possible. Such a model company shows detailed characteristics such as income, capital and revenue structures, investment and financing plans, as well as a body of employees. As with the tax assessment simulation method, the corporate data are transformed into tax

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bases, which serve for calculation of tax payments. The drain of tax payments leads to a reduction of the financial assets, and the development of these assets over an observation period of several years is the basis for determining the effective tax burden, including interest and inflation effects.

Taking into account special tax regulations

In contrast to effective marginal tax rates, the detailed consideration of companies instead of marginal investment allows the calculation of average tax burdens. This in turn allows the consideration of special tax regulations such as tax-free amounts, minimum taxes, progressive tax rates, loss allocation regulations, and more. Also the regulations on fiscal profit determination, which is especially important for international tax burden comparisons, are taken into account to a far greater extent. In comparison to marginal tax rates, tax burden comparisons based on corporate models can therefore be expected to have more thorough results. Furthermore, tax burdens for enterprises of differently structured industries can also be determined in this way (see box).

As both aforementioned methods can be realised only with considerable effort, companies and industrial associations usually make do with an approximation solution: tax scale-based rates. Tax scale-

based rates are comparably easy to calculate, as they only take into account the cumulative marginal tax rates of the taxes levied and their interdependencies. The results however neglect all tax bases. Also tax rate reductions, losses and other tax benefits are not considered. As a result, the tax burden thus determined is very inexact and considerably exaggerates the amount of the actual tax burden. For example, for German corporations it calculates a tax scale-based burden of approximately 57 percent, which is composed of corporate income tax, the solidarity levy and trade tax.

Comparison of concepts

A joint comparison of concepts and results of common tax burden comparisons produces the following result:

- ▷ The effective tax burden (marginal or average burden) always ranges below the scale-based tax burden in which the effects of tax bases are not included. The consideration of profit determination principles thus generally causes the actual tax burden to lie below the scale-based tax rate.
- ▷ The amount of the effective tax burden is however determined fundamentally by the scale-based burden. Thus, the majority of countries with high tax scale-based burdens (such as Germany, France, and Spain) also show high effective burdens, while countries with low tax scale-based

burdens often go along with low effective burdens (for example Finland and Sweden). Accordingly, the influence of profit determination on the rank a country takes on the ladder of different interstate tax burdens is comparably low.

- ▷ The effective average tax burden calculated with the European Tax Analyzer (corporate model approach) is below the effective marginal tax burden in all countries. This is due to the fact that the calculation of the average tax burden takes into account both the actual tax scales and also tax-free amounts and other tax deductions.

An important finding is that the method of effective marginal tax rates results in the same burden ranking among the individual countries as with the calculations using the European Tax Analyzer. According to the method of effective marginal tax rates and in contradiction to the OECD study, German and French corporations have the highest tax burden, while the tax burden in all other countries is lower, sometimes considerably.

Especially for that reason, the earlier mentioned OECD (Economic Department) figures should not be taken too seriously. The method for their computation is questionable, and they hardly contribute to a fact-based argument on the amount of corporate tax burdens. ◀

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EUROPEAN TAX ANALYZER

The European Tax Analyzer is a computer programme that has been developed since 1991 at the Centre for European Economic Research (ZEW) in cooperation with the University of Mannheim. It is designed for calculating and comparing the tax burden including social security contributions of companies located in different countries. The current version covers the tax systems of Germany, France, the United Kingdom, the Netherlands, and the United States. For the sake of comparability it is assumed that the model

firm in each country shows identical data before any taxation. The effective overall burden is derived from the assessment over a ten year period under the rules of each country. This takes into account all relevant taxes and contributions that may be influenced by the taxpayers' decisions as well as the more important accounting options enabling a company to influence its taxable profit. The considered options are depreciation, inventory (stock) valuation, employee pension schemes, taxation of capital gains, elim-

ination of international double taxation, and loss relief. The individual nature of tax burden is catered for by drawing up the model in a way that allows the economic assumptions to be altered to suit individual circumstances. As the model firm is designed as a corporation, the tax burden can be calculated for the level of the corporation as well as for the level of the shareholder. Therefore all relevant corporation tax systems (classical system, full or partly imputation system) can be considered within the international comparison.

Research Results

Labour Mobility as Adjustment Mechanism for Euroland?

Being comparably low, labour mobility in Euroland is no short-term adjustment mechanism which could replace the abandoned exchange rates. Therefore regional differences in, for example, unemployment rates can be expected to be larger and more persistent in Europe than in the USA, where labour mobility is comparably high. This could lead to tax rises in order to finance an extended European structural policy.

■ Before 1st January 1999, Italy for example could supply its products to the world more cheaply by depreciating the Lira. Today, Italy has a common currency with all other EMU-countries. If Italian products are now expensive in comparison with German products, a simple and

and Italy the 'regions'. The results show that a deviation of the unemployment level of one region from the country average indeed causes a migratory adjustment. This applies to all countries examined. However, the absorption of an unemployment shock by labour mo-

to Germany has increased substantially in contrast to other countries. Immigration from abroad is contained in the data for Western Germany, France and Italy (1). It can be assumed that immigrants settle in those regions offering them the best income and job opportunities. Therefore immigrants from abroad account for a regional balance of unemployment levels. Data for the internal migration of a country are only available for Italy (2).

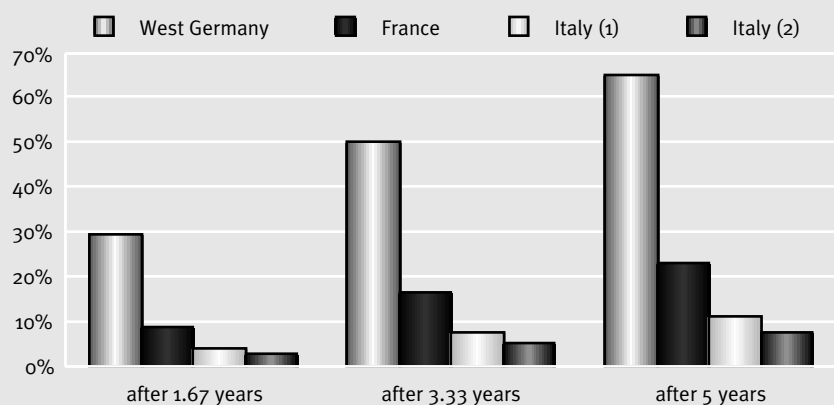
A comparison of the results for Italy (1) (data including immigration from abroad) and (2) (internal migration only) shows that immigrants from abroad increase regional adjustment. It can therefore be assumed that the internal migration in Western Germany is far less effective than the figures in the diagram suggest.

Tax rises through an expanded structural policy?

Which conclusions for the euro can be drawn from this? The ZEW study shows that in European countries labour mobility is not suitable as an effective short-term adjustment mechanism. Therefore, the mobility between the individual EMU member states will also tend to be rather low. Accordingly, Euroland seems to face larger and more persistent structural problems than the United States, where labour mobility is comparably high. Theoretically, this does not constitute a problem for a single currency. However, if Europeans aim to achieve regional and social balance, the euro can effect a higher burden on public budgets, which is likely to result in tax increases. ◀

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Share of unemployment shocks which were offset by migration



For West Germany, France and Italy (1), the migration also includes foreign immigrants; for Italy (2) only the migration within Italy was considered.
Source: EUROSTAT; ZEW-calculations

quick adjustment of the exchange rate between the two countries is no longer possible. Will it result in higher unemployment if prices do not react and Italian products remain too expensive? According to economic theory, not necessarily: as long as the production factors are mobile, there will be no problem with a single currency.

Regional unemployment differentials cause some migration

In a study commissioned by the Deutsche Poststiftung, the ZEW has therefore examined the labour mobility within individual EMU member states. For Western Germany, the regions examined were the so-called districts, for France

bility is considerably greater in Germany than in France, where it is, in turn, still higher than in Italy. Nevertheless, in Germany only about half of the increase in levels of unemployment is offset by migration. As the diagram shows, it lasts about three years until approximately 50 percent of the unemployment differential of a West German region is balanced by migration. In the same time period, in France and Italy less than 20 percent and less than ten percent respectively are offset.

The findings explained

Presumably the cause of the relatively high West German values lies in the fact that since the late 1980s, the migration

Research Results

Exports in the Service Sector

Against the background of the economy's internationalisation, the German service firms' position on international markets is moving into the limelight. In contrast to industry firms, German service providers have only been present on foreign markets in small numbers up until now. So far, services were regarded as a typical example for non-tradable goods. Through deregulation and considerable progress made in the realms of Information and Communication Technology, even services have, however, become tradable to a large extent.

■ At an average of 20 per cent, the proportion of exporting firms in the service sector still lies far below the corresponding share amongst industry firms, which has a figure of over 65 per cent. Therefore, the national importance of the service sector is not yet reflected in an appropriate success on the world markets. This follows from a survey of almost 2500 service sector firms which was carried out by the Centre for European Economic Research (ZEW) on behalf of the Federal Ministry for Education and Research (bmb+f).

In view of the decrease in relative significance of the manufacturing industry and in face of the export dependency of the German economy, these figures give cause for concern. Even on a medium-term basis, none of that will change: when asked about export plans until 1999, on average hardly a larger share of export oriented firms can be made out. A closer examination shows, however, that this can be led back to, above all, whole-

sale, retail and sale of motor vehicles. In all other areas the share of exporting firms will, in parts, grow noticeably over the next few years.

Competition through deregulation

Distinct differences are becoming apparent between the export behaviour of German service firms and import competition on the German market. The share of firms which report international competition on the home market lies far above the share of firms who are active on the export market themselves. The discrepancy between the export behaviour of German service providers and the development of foreign competition will increase further in the coming years: Even in those branches which have seen a rise in the proportion of firms exporting, the pressure of competition from foreign firms will increase to the same or even a greater extent.

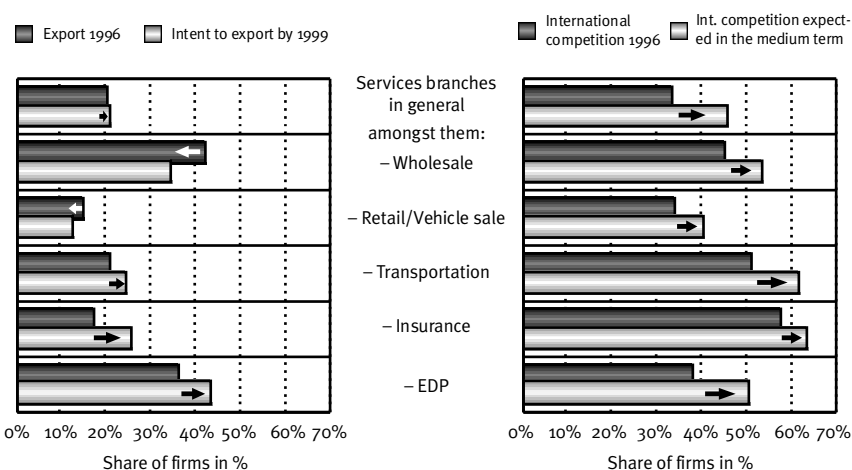
The size of the market makes Germany thereby far more attractive for foreign firms than the other way around. The contrast between the development of export activities and import competition is thus particularly large in those branches in which deregulation measures have contributed to an opening-up of the market – the insurance sector, for example. Since this development was partially carried out earlier in other countries, foreign competition therefore already has a lead and undergone necessary restructuring by now. The introduction of the Euro is strengthening integration between national economies. As a result, problems arising due to low export activities will thereby only intensify.

Innovation activity and qualification of employees important

But, what are the success factors for export activity? In a ZEW study, two fundamental factors could be identified, by use of which service firms are able to effectively counter the growing international competition: innovation activity and qualification of employees. Once more, both work hand in hand as an answer to globalisation. Innovative service firms clearly export more frequently than the average.

These differences will intensify further in the future: In all branches the share of exporting firms among innovative service providers will increase, whereas it will diminish markedly among non-innovators. Even in the service sector, however, high personnel costs stand in the way of success on the world markets as long as they fail to be accompanied by a better qualification of the employee. ◀

Export behaviour/International competition in the service sector



The arrows show the development of the share of exporting firms or of foreign competition, respectively, in the medium term.
Source: ZEW/FhG-ISI (1998): Mannheimer Innovation Panel - Services

Research Results

Wage Subsidies Have Little Effect on Employment of Low-skilled Workers

In Germany the participants of the political initiative "Bündnis für Arbeit" (Cooperation for Employment) are currently discussing the subsidization of low-skilled labour, above all by reducing social security contributions on these jobs. It is hoped that subsidies will increase employment of low-skilled labour substantially. However, substantial employment effects can be expected neither from wage subsidies to employers nor from wage-related transfers to employees. This is the main result of a recent research report conducted by the ZEW for the Hans-Böckler-Foundation.

■ The kind of employer-side wage subsidy examined by the ZEW refers to a permanent hourly wage subsidy for all low-wage employees. The level of the subsidy is decreased with increasing hourly gross wages (see table below). In principle, it corresponds to a regressive subsidization of social security contributions. According to the simulation results of the ZEW, this policy would raise employment levels by 60,000 to 100,000 people. The exact figure depends on various factors, however, for example how wages respond to the subsidy.

Considering the large number of (long-term) unemployed people, existing wage subsidies for employers in West Germany were rarely used in the past. The restricted availability of financial means, a narrow definition of the target group and the requirement of a permanent employment relationship are probably the most important reasons for this finding. Due to the strict target group orientation, deadweight losses and displacement effects are likely to have been rather limited. It can be assumed that the employment effects have been positive, but, as in the case of

assistance are characterized by a moderate decrease of the withdrawal rate for earned income which is very low under current rules. The reform option of the system of unemployment assistance proposes a minimum of admissibility and abandons the restriction for low-income people receiving unemployment assistance. These reform options can be implemented without major changes of the current institutional setting of the social assistance and unemployment assistance systems. In addition, due to the fact that the target group is more narrowly defined as in the case of the employer-side wage subsidy described above, the fiscal costs can be expected to be comparatively small.

However, judging from our simulation results, the analyzed reform alternatives are not likely to increase employment levels noticeably. This can be partially attributed to the weak labour supply response to changes in net household income. Moreover, the possibility to keep a larger part of earnings from work in addition to social assistance implies that an increase in labour supply of one partner is offset by a reduced labour supply of the other among couples households. Furthermore, part of the additional labour supply leads to an increase in working hours instead of increasing employment. ◀

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Wage subsidies to employers – Assumptions by the ZEW research report

Hourly wage in DM	<10	11	12	13	14	15	16	17
Subsidies of hourly wage in %	40	31.8	25	19.2	14.3	10	6.3	2.9
Reimbursement in DM (upper limit of category)	4	3.5	3	2.5	2	1.5	1	0.5

The values refer to the gross hourly wage.

Source: ZEW

Apart from the increase in the number of employees, the subsidy would also raise the number of working hours of existing staff. However, the proposal would generate substantial costs, which are far from being offset by additional revenues generated by the increase in employment and earned income. Net costs roughly add up to about DM seven billion. Larger employment effects could be achieved if the empirically calculated wage responses could be avoided, for example in the context of the "Bündnis für Arbeit". However, as union coverage is low in the low-wage sector, this seems rather unlikely.

similar subsidies in other countries, quantitatively small. Subsidies not targeted on specific disadvantaged groups would probably have larger employment effects, but, on the other hand, deadweight losses and displacement effects as well as fiscal costs can be expected to grow considerably.

Employee-side earnings supplements

The employment effects of transfers related to earned income of employees are also examined in the ZEW study. The reform options for the system of social

ZEW Financial Market Test

Results of the Survey in June 1999

■ The Financial Market Test conducted by the ZEW is a monthly business survey of German financial market experts which started in December 1991. The survey asks for the predominant expectations about the development in six international financial markets.

As a whole around 350 enterprises participate in the survey, among which are 260 banks, 60 insurance companies and 30 industrial enterprises. Participants in the survey are: Financial ex-

perts of the finance departments, the research departments and the economic departments as well as the investment and securities departments of the firms. In detail, the financial experts are questioned on their medium term expectations about the development of important international financial markets with respect to the business cycle, the inflation rate, short term and long term interest rates, the exchange rate and share prices.

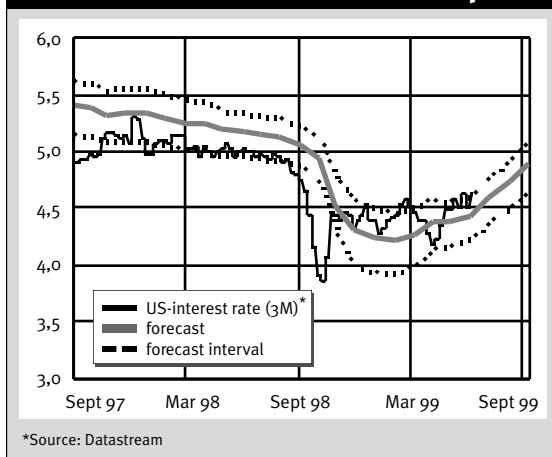
To construct forecasted figures, the qualitative response categories (increasing, unchanged, declining) are transformed into quantitative figures by the Carlson/ Parkin procedure. Additional information to the applied procedure is available as an abridged version published by the ZEW.

The present survey was conducted between June 01 - 21, 1999 and all calculations are termed to June 25. ◀

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USA: Federal Reserve Board expected to raise interest rate

US-interest rate: Forecast and development



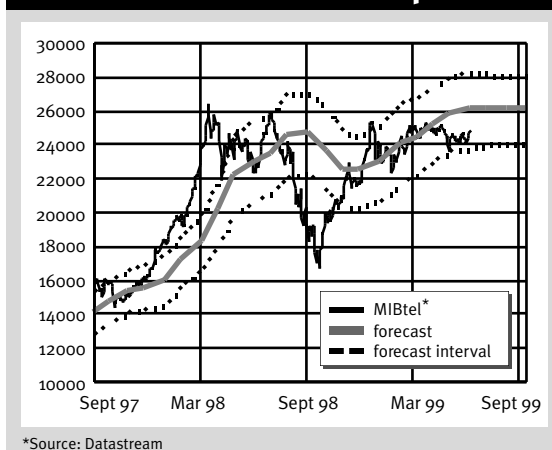
Allen Greenspan, head of the Federal Reserve Board, was in a dilemma. He had to avoid any risk of inflation in the USA and at the same time show consideration for the way global financial markets are developing. By lifting interest rates a quarter point and at the same time announcing a neutral bias he managed to avoid financial turmoil.

Almost two thirds of the experts had already expected short-term interest rates to rise in the USA. On the basis of the survey data in June, the three-month money market

rate calculated for September 1999 averages 4.9 per cent. The upper limit of the projected band is 5.1 per cent. Compared with the interest rate level in mid June this meant an increase of about 25 basis points. It is mainly inflation worries that are fanning concerns about higher interest rates. 64 per cent of the respondents expect an increasing price surge in the US. In April it was just 40 per cent. The inflationary pressure is created by the strong US economy. To about 50 per cent it is clear that the boom will continue. ◀

Italy: Sluggish economy causes problems for stock market

MIBtel: Forecast and development



The polled investment strategists are less optimistic for Italian shares in June. The group of experts expecting the MIBtel to rise in the medium term declined by seven percentage points to currently 58 per cent. A third of the market experts expect a sideways movement of the index.

On the basis of the survey data, the fluctuation margin calculated for September ranges from 24,100 to 28,200 points. The mean forecast is 26.000 index points.

It is not just the Italian government that is certain that there is a cyclical

weakness in Italy. A third of the experts polled described the overall economic situation in Italy as bad. Only 40 per cent believe the situation will improve over the next six months.

Thus, in the experts' assessment Italy is clearly falling behind the other EU-11 states: The economic situation in the whole Euro area is categorized as "satisfying/normal" by 84 per cent of the respondents. A good 60 per cent of the market analysts expect the economic situation in Euroland to improve in the medium term. ◀

Research Results

Indicator of the ECB's Monetary Policy

Since the start of the monetary union European monetary policy is in the hands of the European Central Bank (ECB). A new indicator for the ECB's monetary policy, the ECB-watch, is computed by the ZEW and published by vwd (Vereinigte Wirtschaftsdienste GmbH) since March 1999.

■ The ECB-watch consists of a three-month forecast of the 3-Month-EURIBOR including a forecast-corridor representing the forecast standard deviation. This interest rate is used as a proxy for the ECB's monetary policy instruments: marginal lending facility, deposit facility and open market operations. The ECB-watch is calculated on a monthly basis by the Centre for European Economic Research (ZEW), Mannheim using survey data of the ZEW-financial market survey. Approximately 300 financial experts of German banks, insurance companies and investment funds monthly respond to the survey. They reveal among other data their medium term expectations for the 3-month-EURIBOR which are used for the ECB-watch calculation.

The respondents to the financial-market-survey (ZEW-Finanzmarkttest) are asked for their qualitative expectation of the 3-month-EURIBOR's medium-term development. With the help of a statistical methodology – the Carlson/Parkin method – the answers in the categories "rise", "remain unchanged" and "fall"

are transformed into a numeric forecast value. The forecast horizon is three months. As past experience has shown, the accuracy of the forecast given by the experts on the trend of the German short-term interest rates (3-month-FIBOR) has been very good. For a period of three months, the

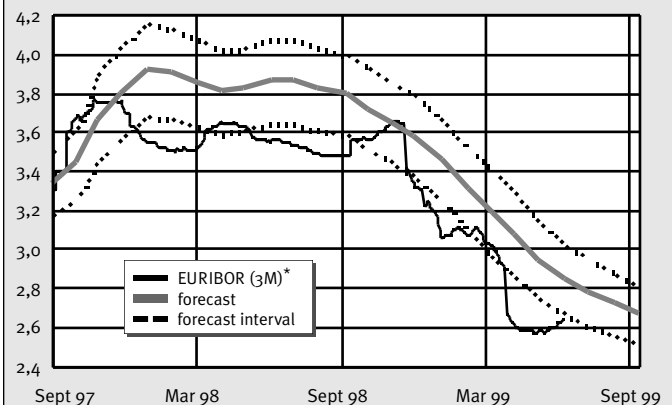
correlation between forecast and actual development is 0.65; for a period of six months, the correlation even amounts to 0.86. It is expected that the experts will be able to forecast the future interest policy of the ECB with similar accuracy.

The ECB-watch predicts a 3-month-EURIBOR level of 2.66 percent in September 1999. The forecast margin ranges

between 2.51 and 2.8 percent. Reason for this upward deviation is a rising fear of increasing inflation. An increasing number of respondents (June: 17 percent, May: 10 percent) is expecting a rise in short term interest rates. However, the great majority (80 percent) of respondents believes in Wim Duisenbergs statement "that's it".

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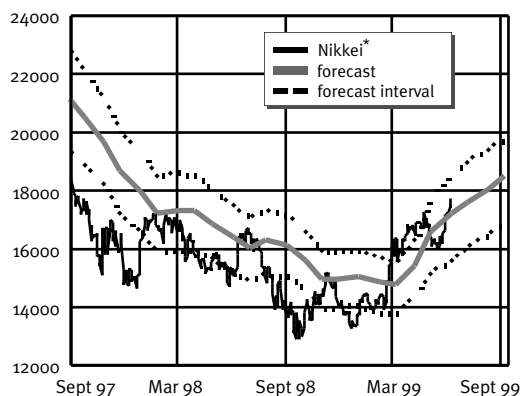
EURIBOR (3M): Forecast and development



*Source: Datastream, until April 1999 FIBOR (3M)

Japan: Experts remain optimistic for the stock market

Nikkei: Forecast and development



*Source: Datastream

The number of financial experts expecting the Japanese stock market to collapse in the medium term is decreasing. In June it was down to seven per cent. However, experts increasingly suspect that the steep jumps in equity prices are over for the time being. A good quarter of the market experts expect the Nikkei index to move sideways by autumn.

On the basis of the survey data, a mean index value of 18,440 points is calculated for September. However, setbacks cannot be ruled out completely. The total forecast inter-

val lies between 17,000 and 20,000 points. Although the government is staying rather passive with regard to new measures to reform the economy, the economic climate for Japan has again slightly improved. Nearly one out of ten financial experts now believes that the overall economy in Japan is getting back to normal. According to 40 per cent of the respondent, long-term interest rates will go up in the medium term. For September they project a rise of 20 basis points to 1.8 per cent. For some even 2.0 percent p.a. is in reach.

Research Results

Business-related Services: Decline in Economic Activity Stopped

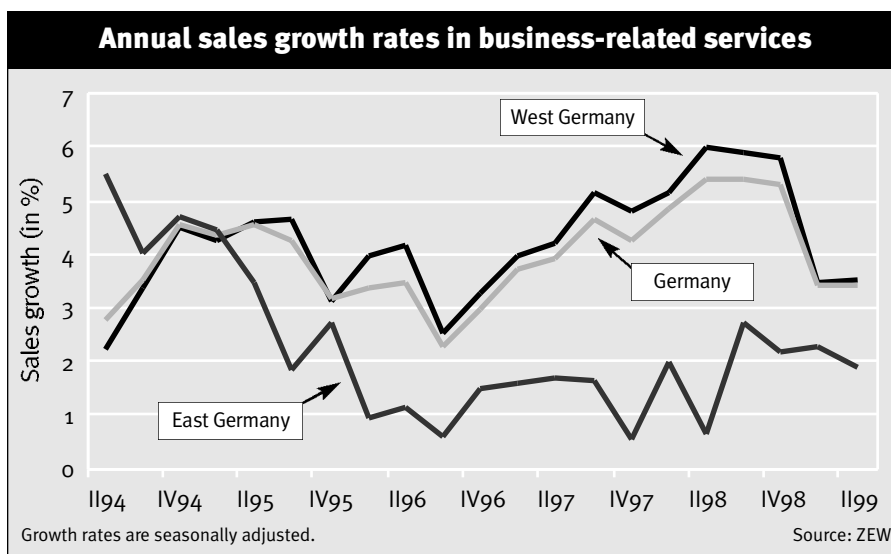
The business cycle of the business-related services sector has stabilized in the second quarter of 1999 after the sharp decline in business conditions at the beginning of this year. The seasonally adjusted annual sales growth rate is 3.4 percent in the second quarter of 1999 and hence has reached the value of the previous quarter. Demand conditions have improved in comparison to the first quarter of 1999.

■ This has been shown by a business survey in the business-related services sector which is conducted by the ZEW in co-operation with the credit rating agency Creditreform. ZEW and Creditreform have been interviewing 1,100 firms of the business-related services sector quarterly since the second quarter of 1994. The following ten branches are defined as business-related services: Software consultancy and accounting, business and management consultancy, architectural and engineering activities, technical testing and analysis, advertising, renting of automobiles, renting of machinery, cargo handling and storing, and sewage and refuse disposal.

Regardless of the recent economic contraction, firms of the business-related services sector still judge their economic conditions as favorable. Sales, demand, profits and workforce are pronounced being positive by the majority of firms in the business-related services sector. The business-related services sector continues to grow, however, growth rates are not as high as in 1998.

The situation of the labor market in the business-related services sector remains to be in a good condition. Even the sharp decline in demand for business-related services of the last quarter did not weaken employment prospects in the business-related services sector. This is valid both in comparison to the last quarter and in comparison to the previous year.

The employment situation is the only business cycle indicator which is judged at least as unchanged in a year-on-year comparison. Due to the decline in the economic climate at the beginning of this year, sales, demand, price, and profit judgement are considerably below last



year's values. It has to be taken into account, however, that – with exception of the employment judgement – all other business cycle indicators had reached their all-time-high at that time.

Declining demand

The main reason for the economic slowdown since the second quarter of 1998 in business-related services is the declining demand. On the one hand, this is due to the weak overall economic climate in Germany. On the other hand, the two most dynamic sectors of the past two years – software consultancy and management consultancy – do not grow at their usual pace. These two branches gained much from the strong demand for standard software solutions in the context of the Y2K problem and the introduction of the Euro.

With regard to the insecure overall economic development in Germany and the skeptical expectations of the business-related services firms for the third

quarter, it is not very likely that the business-related services sector will return to the high growth rates of 1998 in the short run.

East German business-related services firms still judge their economic situation significantly worse than business-related services in West Germany. While the West German competitors realized sales growth rates of 3.5 percent, their East German counterparts can only report a growth rate of 1.9 percent. Meanwhile, the economic situation of the East German business-related services firms has stabilized and an upswing appears to become more likely. In the second quarter of 1999, more East German firms of the business-related services sector have hired additional labor than released employees for the first time since the last quarter of 1995. The positive development will continue in the third quarter of 1999 since not only employment, but also sales, price, profit and demand are expected to improve. ◀

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Research Results

High Economic Growth Needed in Germany to Fight Unemployment

Although Germany experienced a relatively high economic growth during the nineties, this did not lead to a higher level of employment. Therefore, also the level of economic growth which is necessary to achieve constant employment has been relatively high in recent years and is still increasing. The economic growth rate that would keep employment constant is called “employment threshold”.

■ In a topical study by the Centre for European Economic Research (ZEW), the dynamic employment threshold has been derived for each year between 1976 and 1997, in addition to the well-known static average employment thresholds presented in comparable studies. The advantage of the ZEW approach is that from the dynamic employment threshold we can identify the necessary economic growth rate for the stabilisation of employment in any individual year and compare it with the actual economic growth in that year. The static average employment thresholds (see table) conceal for example the fact that during the nineties the employment threshold increased dramatically in Germany in contrast to other countries like the United Kingdom, the USA or the Netherlands.

In West-Germany, the employment threshold declined from almost five percent directly after the first oil price shock in 1976 to about zero in 1980 (see figures below). The second oil price shock prompted a rise in the employment threshold to more than three percent in 1983. The problems on the labour market in the wake of the German reunification brought end to the decline of the threshold in the eighties. Since 1993 the employment threshold has been clearly positive again and rising and has now reached a value above three percent.

In the USA the employment threshold shows a comparable pattern during the economic cycle although it has always been considerably lower than in Germany. In the Netherlands the employment threshold was frequently negative,

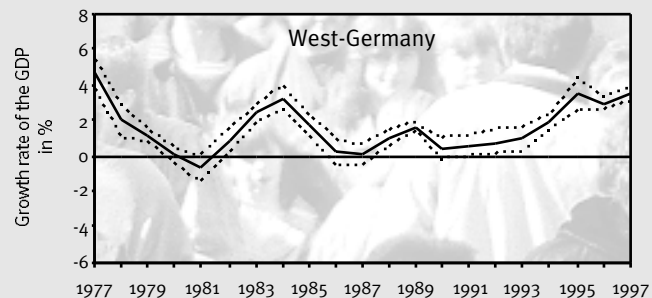
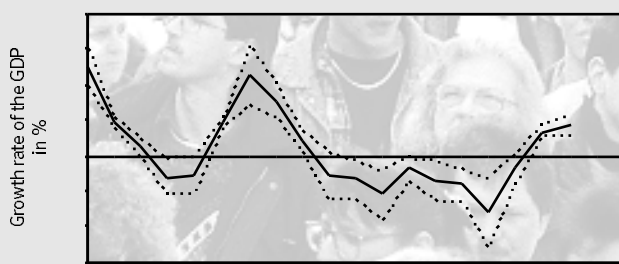
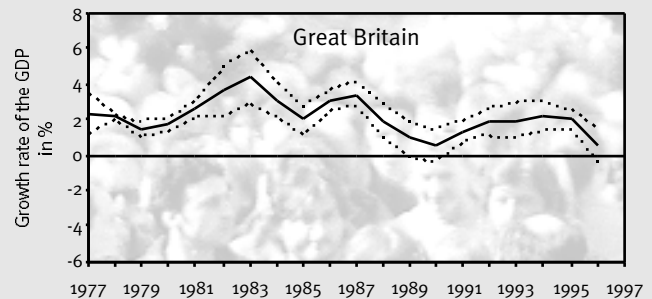
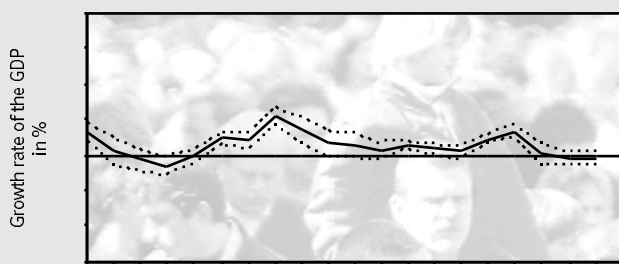
Average employment thresholds in percent				
Period	D (West)	USA	NL	GB
1976-96	1.61	0.57	0.32	2.13
1976-80	2.2	0.45	2.07	2.19
1981-90	1.15	0.67	0.12	2.36
1991-96	1.85	0.5	-1.01	1.68

Source: ZEW Calculation

although it increased again in recent years after a considerable decline after 1983. In the United Kingdom the employment threshold was almost always positive and reached the maximum values during the slumps of 1982 and 1986, and during the recession between 1991 and 1994.

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Dynamic employment thresholds in an international comparison



Source: ZEW calculations

Calendar of Events · Publications

Conference Announcement: Stuttgart, "Haus der Wirtschaft", July 27-28, 1999

Flexible Mechanisms for an Efficient Climate Policy

Organised by ZEW and the Ministry for the Environment and Transport of the German State of Baden-Württemberg

The commitment of industrialised countries and transition economies as agreed upon in the Kyoto Protocol to reduce the emissions of the six main greenhouse gases by 5.2 per cent until 2008-2012 is only a first step. Scientific evidence reveals that further steps are needed.

Furthermore, the Protocol provides for three instruments (emissions trading, the clean development mechanism and joint implementation) which allow for more flexibility within and between countries in meeting the reduction commitments. Thus, these so-called Kyoto Mechanisms offer the opportunity to lower the cost of climate protection. This in turn would not only ease the implementation of the Kyoto Protocol but could also facilitate an international agreement on further emission reductions.

The aim of the conference is twofold. Firstly, the conference should make politicians, business executives and the general public more aware of the need for and the potentials of cost efficient climate policy instruments. Secondly, it offers a forum for economists and lawyers to discuss the economic and legal aspects of flexible instruments in climate policy.

Programme:

On the first day there will be a plenary discussion with, i.a., the following speakers:

Stefan Rahmstorf (Potsdam Institute for Climate Impact Research), **Hans-Jürgen Ewers** (German Council of Environmental Advisors), **Peter Zaborowsky** (Natsource), **Peter Knoedel** (Deutsche BP AG).

The second day will give the forum for two workshops:

- ▷ The Kyoto Mechanisms (with i.a. **Nathalie Eddy** (Climate Action Network), **Axel Michaelowa** (HWWA))
- ▷ Designing European and National Emission Permit Schemes for Greenhouse Gases (with i.a. **Joseph Goffman** (Environmental Defense Fund), **Ray Kopp** (Resources for the Future))

For further information and registration see:

www.zew.de/flex_mech/frameset.html

or contact

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Discussion Papers:

Böhringer, Christoph; Jesper, Jensen; Rutherford, Thomas F.: *Energy Market Projections and Differentiated Carbon Abatement in the European Union*, No. 99-11.

Böhringer, Christoph; Welsch, Heinz: *C&C – Contraction and Convergence of Carbon Emissions: The Economic Implications of Permit Trading*, No. 99-13.

Falk, Martin; Seim, Katrin: *Workers' Skill*

Level and Information Technology – Evidence from German Service Firms, No. 99-14.

Müller, Claudia; Buscher, Herbert S.: *The Impact of Monetary Instruments on Shock Absorption in EU-Countries*, No. 99-15.

Buscher, Herbert S.: *Business Cycles in EU Member States*, No. 99-16.

Stirböck, Claudia; Heinemann, Friedrich: *Capital Mobility within EMU*, No. 99-19.

Büttner, Thiess: *Regional Stabilization*

by Fiscal Equalization? Theoretical Considerations and Empirical Evidence from Germany, No. 99-23.

Zwick, Thomas: *Innovations Induce Asymmetric Employment Movements*, No. 99-24.

Muysken, John; Zwick, Thomas: *Human Capital Creates Insider Power*, No. 99-25.

Konrad, Kai A.; Schjelderup, Guttorm: *Fortress Building in Global Tax Competition*, No. 99-26.

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