English edition

ZEW news

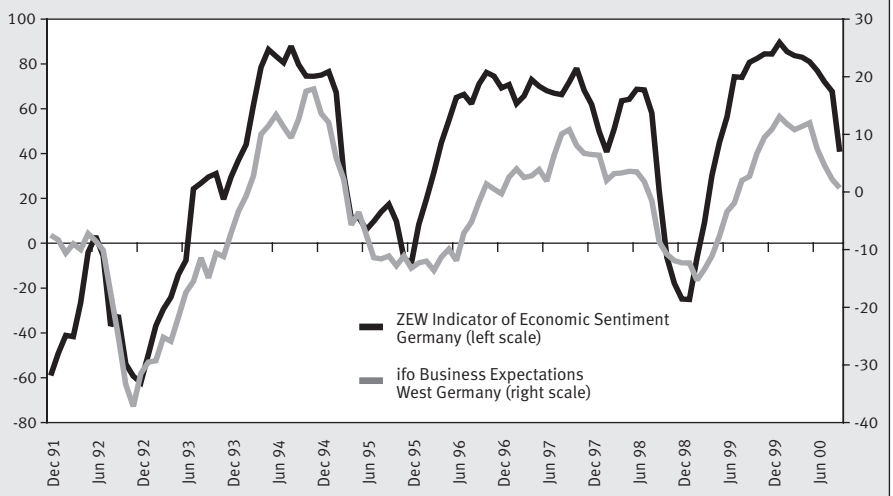
Zentrum für Europäische
Wirtschaftsforschung, Mannheim

Selected Contributions from the Centre for European Economic Research No. 2 · 2001

A Useful Leading Indicator: ZEW Indicator of Economic Sentiment

The excellent characteristics of the ZEW Indicator of Economic Sentiment (ZEW-Konjunkturerwartungen), which financial markets have been speculating about for some time, have been confirmed. A study conducted by ZEW examined the forecasting quality of the two leading indicators ifo Business Expectations (ifo-Geschäftsklimaindex) and ZEW Indicator of Economic Sentiment, and discovered a significant one-month lead of the ZEW Indicator for Western Germany.

ZEW Indicator of Economic Sentiment and ifo Business Expectations



The balance of each indicator is calculated from the positive and negative assessments of business expectations and economic expectations, respectively. Source: ZEW, ifo

■ Both ifo Business Expectations and ZEW Indicator of Economic Sentiment show a significant lead regarding the annual rate of change in industrial output in Germany. For the ZEW Indicator this lead amounts to up to six months, whereas ifo Business Expectations for Western Germany is able to claim a lead of a maximum of four months. Thus, the economic expectations calculated from a survey of financial analysts in ZEW-Finanzmarkttest (ZEW Financial Market Survey) are well suited to a medium- to long-term forecast.

The ZEW study (ZEW Discussion Paper No. 01-04) aims at comparing the information contained in ifo Business Expectations and ZEW Indicator of Economic Sentiment, and at analysing their usefulness as leading indicators for the economic development in Germany. Both indicators are produced from monthly survey data. Whereas ifo-Konjunkturtest polls companies, ZEW-Finanzmarkttest surveys analysts from banks, insurance companies and major industrial companies.

The study reveals that both indicators make for a considerably better forecast of the way in which industrial output is going to develop than a naive forecast solely based on the historical development of industrial output. A forecast based on the ZEW Indicator yields significantly better results for a period of three to twelve months than the naive forecast. With ifo Business Expectations, this significance can be proved only for six-month forecasts. The analyses also demonstrate that for short- and medium-term time horizons a combination of ZEW Indicator of Economic Sentiment and ifo Business Expectations improves the forecasting quality compared with the individual indicators. Apparently the surveys contain complementary information. ◄

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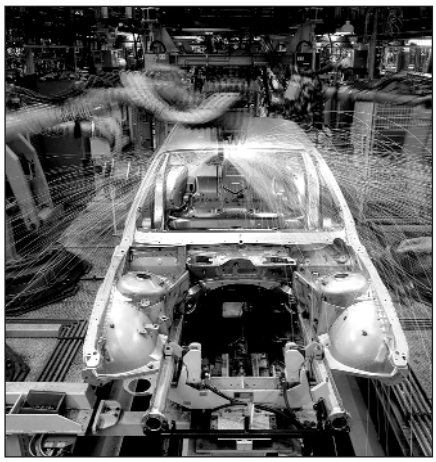
Content

Research Findings

Germany's Innovation System Needs to Be Put on a Broader Basis

Germany's companies have increased their expenditures for research and development by 21 percent in the past three years. Innovation endeavours of the industry have grown substantially: Two out of three industrial enterprises have implemented innovations. Germany thus ranks first in Europe. This, however, should not induce entrepreneurial decision-makers to take less risks. This was found in the report „Germany's Technological Capacity" that the ZEW conducted by order of the Federal Ministry for Education and Research.

According to the report „Germany's Technological Capacity" (TC-report) the positive overall picture of German research and innovation activities in the past years continues to conceal structural deficiencies and weaknesses in provisions for the future. As the German economy is currently experiencing a favourable global economic environment, these deficiencies are less prominent than was the case in the mid-nineties. Nevertheless, this might change in the event of an economic recession.



In the TC-report the German automotive industry stands out as being particularly innovative. Automotive companies account for one out of four German marks that the German industry invests in research and development. At the same time the automobile industry provides strong stimuli to research in other industries. Research endeavours of the German automotive industry also create international strength. Germany accounts for nearly half of the European patent registrations in motor manufacturing.

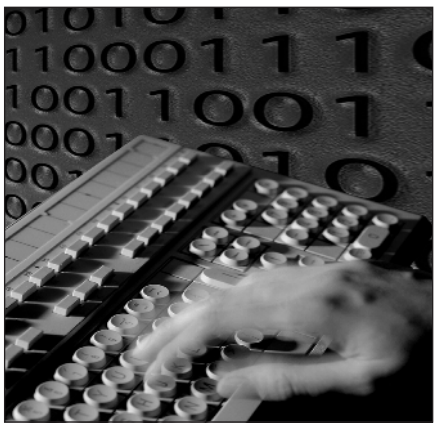
As positive as the international strength of German automotive manufacturing may be, the increasing concentration of R & D on this industry is risky when considering the cyclical business activity of the automotive industry. A slump in demand for automobiles would have negative impacts for all innovation activities in Germany. The authors of the TC-report thus find that more efforts need to be made in future so as to put the innovation system on a broader basis. Above all, structural change towards sophisticated state-of-the-art technologies should be promoted further.

Unlike the automotive industry, Germany's pharmaceutical sector was no longer able to keep up with the global dynamism by the mid-nineties. This is reflected in patents and in newly approved medication. According to the TC-report it is vital for pharmaceutical companies to successfully master the change of paradigms from chemistry to biology.

Lack of qualified personnel

According to a recent ZEW study, up to 350.000 information and communication (IT) specialists will be needed by the end of the year 2002, and about 50 percent of these experts should have a university degree. In addition to computer scientists, particularly electrical and mechanical engineers, mathematicians and physicians with IT knowledge are employed. This, in turn, leads to an even greater shortage of qualified personnel in other scientific and technical sectors.

Persistent lack of university graduates in technical and scientific subjects reflects the low inclination of Germany's high-school graduates to study. Germany still leads in terms of qualification, nevertheless, a comparatively small share of its young people strives for a university degree. This situation has to change, otherwise the Federal Republic will be only in the middle of the international league in the long term with its most important raw material, its people's knowledge and education. The report states that a country where 28 percent of a year's high-school graduates intend to study, as is the case in Germany, does not do justice to its claim that it is a modern industrial nation. The average OECD value is, after all, 40 percent. ◄



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Research Findings

Part-Time Work in Germany

Many employee's requests for part-time work have been denied in Germany to date. When applying the Dutch labor market flexibility to the German economy, there seems to exist a considerable potential for additional part-time work, especially for German women.

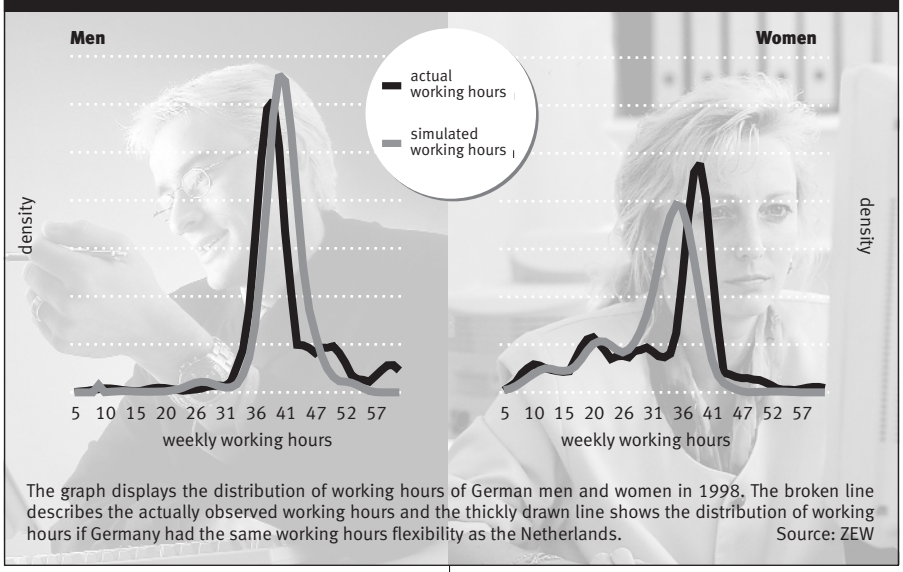
■ Since January 2001, German employees are entitled to reduce their working hours and work part time, provided that they have been working for at least six months in their current firm. It is not clear, however, to which extent this new legislation will help to increase the part-time rate and share work among more employees, as employers can still reject requests for reductions of worktime for important economic reasons.

According to the German Institute for Economic Research (DIW) in Berlin there are close to 6.4 Million employees in Germany who potentially take advantage of the new part-time law and reduce their working hours. It is, however, extremely unlikely that all these employees can indeed fulfill their part-time preferences. In practice, highly qualified managers and executives in the field of IT and communications technology, for instance, would encounter many problems when attempting to reduce their working hours.

Dutch working hours flexibility assumed for Germany

In order to assess the potential consequences of the new part-time law, the ZEW conducted an empirical study with the financial support of the Thyssen Foundation. In this study it is assumed that Germany had the same working hours flexibility as the Netherlands, i.e. that German employees had the same chance to work part-time as their Dutch colleagues in comparable occupations. As the educational level or the household context may also influence employees' chances to attain their preferred worktime, international differences with regard to these individual characteristics were included in the analysis. The resulting distribution of German working hours was then compared with the actually observed distribution of working hours.

Part-time work in Germany with the simulation of Dutch conditions



The graph displays the distribution of working hours of German men and women in 1998. The broken line describes the actually observed working hours and the thickly drawn line shows the distribution of working hours if Germany had the same working hours flexibility as the Netherlands. Source: ZEW

The Netherlands are a very interesting point of reference for this analysis. On the one hand, they rank first in part-time employment in Europe with a part-time share of 45 percent. On the other hand, the institutional framework of the labor market, such as unions, the tax and the transfer systems of both Germany and the Netherlands bear many similarities.

The simulation of German working hours under the assumption of Dutch working hours flexibility leads to rather unexpected results for male employees. While most of the German men worked 37 to 40 hours in 1998, they would have to work about three hours more per week under Dutch conditions. In addition, there would be only a slight increase in part-time work among German men. The analysis, however, also reveals that a substantial reduction of overtime hours would be possible under the scenario of more hours flexibility. Despite the slight increase of regular working hours per week the number of weekly working hours actually worked by men would not increase on average.

In contrast to men, the results attained for women are much more unambiguous. While the share of part-time jobs with less than 20 hours per week would hardly change, extended part-time positions ranging from 21 to 36 hours would experience a distinct increase. The peak of the simulated hours distribution is at 35 hours per week, three hours less than the peak of the actual distribution. On average, weekly working hours of women would drop at least 2.2 hours per week, which is mainly driven by women seeking a small part-time job.

All in all, the simulation of Dutch part-time conditions for Germany suggests that there exists a potential for additional part-time work which has not been exploited yet, i.e. the part-time law is likely to have positives effects on the part-time share. Whether it will be possible to realise this potential depends mainly on the extent to which German employers reach the conviction that the creation of part-time jobs not only generate costs, but also facilitates a competitive edge due to the impact on productivity. ◄

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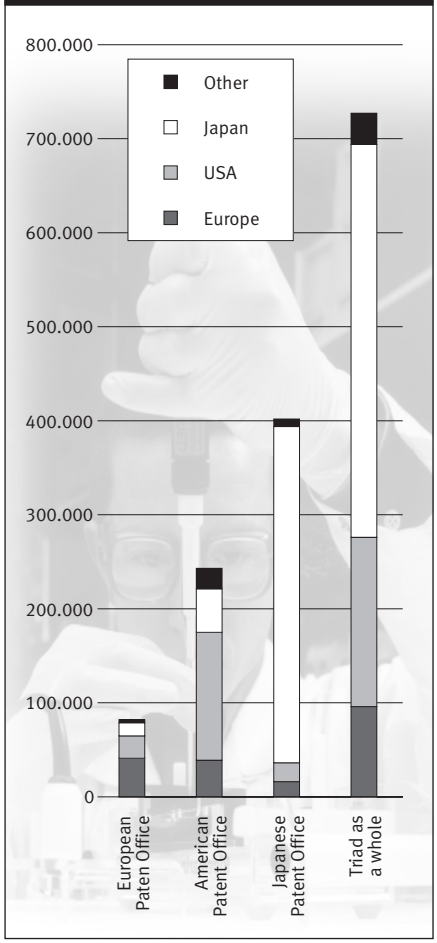
Research Findings

Patents: Europe Keeps Pace

In the second half of the 20th century the whole world perceived the USA as the technologically leading economic power. The USA's and later also Japan's innovative strength was attributed, inter alia, to their annual patent registrations. If the number of registrations served as the only yardstick, things would look bleak for Europe.

■ In 1998 about 730.000 patents were registered at the American, Japanese, and European patent offices, the three most important ones of the world and thus also referred to as the triad. On closer examination these figures reveal that with nearly 60 percent the number of patent registrations of Japanese firms exceeds by far those of the USA and the European states who signed the European Patent Treaty (EU: Austria, Belgium, Germany, Denmark, Spain, Finland, France, Great Britain, Ireland, Italy, Luxemburg, the Netherlands, Portugal, Sweden. Non-EU: Switzerland, Cyprus, Monaco, Liechtenstein).

Patent registrations 1998



Referring to Japan as the most innovative industrial nation, however, would go too far. Rather, the large number of patent registrations is due to a peculiarity of the Japanese patent system. It allows only for a very limited range of patents. As a result an innovation is usually protected with several independent patents with relatively few claims in Japan, whereas for the same invention would be only one patent application filed, but with several claims in the USA or in Europe. When considering exclusively patent registrations, Japan ranks first; this, however, does not necessarily lead to more innovations of Japanese firms on the market. One needs to be aware of this situation when comparing absolute figures of patents.

European firms register patents overseas

Companies in the USA own about one fourth of all patents at the three most important patent offices, while Europe accounts for only about half as many registrations. One needs to consider, however, that some European companies apply for a patent only at their national and not at the European Patent Office. The European market is very interesting for the USA and Japan. For this reason, both countries increasingly use the opportunity to seek patent protection in Europe, particularly because applications at the European Patent Office enable them to be granted patent rights simultaneously for several European states. The Europeans, in turn, attempt to register approximately four percent of their innovations in Japan for patent protection and even more than 40 percent in the USA. In this context sectors where European companies have been traditionally strong play a vital role. For instance, the chemicals group Bayer ranks first, BASF third, and Hoechst seventh among the ten chemicals corporations with the highest number of patents at the American Patent Office. European mechanical engineering companies also register many patents in the USA. Nevertheless, only one European company, Robert-Bosch GmbH, is among the ten most active patenting companies consisting mainly of American and Japanese corporations.

Economic success

When analysing the innovative strength of Europe, the USA, and Japan, the number of patents reveals only an incomplete picture. Even if a patent is granted for an innovation this does not mean necessarily that it can be marketed to generate profit. Studies prove that only a very small share of patented innovations actually yields economic success. In addition, surveys conducted among German and American companies suggest that patents are still important, but that they fulfil their original protective function against imitation only to a limited extent. Particularly due to the rapid development of information technologies, patents, utility models, and trademarks represent, especially in the service sector, only a secondary means to ensure a competitive edge via innovations. In the meantime, secrecy and a rapid market launch have become much more important. In these industrial sectors patents are held mainly for strategic reasons. The immaterial value of patent portfolios is, for instance, eminently important in merger negotiations. Patens have served and continue to serve as a yardstick to measure the innovative power of a national economy. However, the strength of the thus guaranteed right and its implementation on the market are ultimately the basis for a technologically leading position. ◄

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Research Findings

Shortage of Skilled Labour Hampers the Diffusion of ICTs

The use of information and communication technologies (ICTs) has increased considerably in Germany over the last few years. Complementary investments in hard- and software have made PCs common at the workplace. A recent survey conducted by ZEW and infas Institute of Applied Social Sciences provides a representative picture of the degree to which ICTs have diffused in the manufacturing and service sectors. The shortage of ICT specialists proves to be the biggest impediment to an increased use of ICTs.

■ One indicator for gauging the diffusion of ICTs is the share of the workforce that do most of their work using a PC, a workstation or at a terminal, which is frequently found at banks and insurance companies. In Germany this figure now stands at 43 per cent of all employees. Banks and insurance companies top the list with about 75 per cent of their workforces working predominantly at PCs, workstations or terminals. Next are technical service providers (such as architects and engineering firms, research and development) with 68 per cent. The ICT industry (manufacturers of hardware and providers of ICT services) only ranks third with 62 per cent of its employees mainly working at PCs. At the bottom you find the manufacturing sector excluding ICTs (around 35 per cent) and the retail and wholesale industry excluding ICT traders (30 per cent).

The reason why banks and insurance companies have a higher ICT intensity than the ICT industry is that the quantitative data of the ICT industry are dominated by companies with large workforces from the manufacturing sector and the telecommunication industry. In the manufacturing sector employees working in the production department in particular do not do most of their work at the PC. However, if you look at the sector of data processing and databases separately, you will find that slightly more than 86 per cent of the employees predominantly work at the PC, significantly more than in the banking and insurance industries.

Internet gaining ground

In the year 2000 just over 85 per cent of all companies had Internet access. But only technical service providers and ICT service providers have equipped most of their workplaces with access to the Internet. 90 per cent of the companies use the Internet for gathering information and for communication. On-line banking, i.e. electronic processing of banking transactions via the Internet, is also widely used: 44 per cent of the companies with Internet access extensively make use of this possibility. Around one out of four companies with Internet access regard using the Internet for advertising and marketing as well as for customer service and support as applications they use widely. Only nine per cent of the companies, however, use the Internet extensively for selling products and services to private end users (business-to-consumer, B2C), a mere twelve per cent for sales to other companies (business-to-business, B2B).

In the year 2000 one out of four companies failed to fully carry out their plans for the use of information and communication technologies. First and foremost it is the shortage of sufficiently qualified employees that stands in the way of an intensified application of ICTs. At just under 60 per cent of the companies facing impediments to an increased use of ICTs, companies from the non-ICT industry are affected by the shortage of ICT specialists more frequently than companies in the ICT industry (47 per cent). Other obstacles include technical problems as well as a lack of a legal framework, the latter probably being of particular significance in connection with e-commerce applications. Few companies consider resistance in their company a genuine barrier to further stepping up the use of ICTs. Just over a quarter of companies facing impediments to the use and introduction of ICTs state that they mostly do not have any need for ICT applications. ◄

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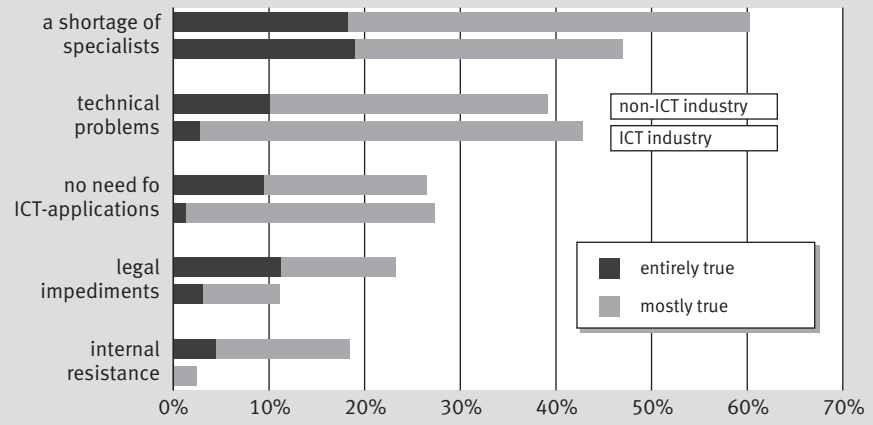
Use and diffusion of ICTs are hampered by...



Example: The statement that technical problems have impeded the use and introduction of ICTs is mostly true for 39 per cent of all companies from the non-ICT industry whose introduction of ICTs has been hampered. 10 per cent of the companies even say it is entirely true. Source: ZEW

Research Findings

Germany as a Financial Centre – Gateway to the East?

Due to its geographical proximity to Eastern Europe and its importance as a trading partner and investor for many Eastern European countries, Germany could be expected to attract a significant share in trading Eastern European stocks. A new study by the ZEW reveals that Germany as a trading centre for Eastern European stocks is attractive to private investors, but not to institutional investors.

■ Private investors benefit from a broad range of Eastern European securities that are traded at German stock exchanges. For example, in August 2000 investors were able to invest into more than 100 different Eastern European stocks from the ten EU candidate countries. The bulk of equity securities come from the Czech Republic (36 per cent) and from Hungary (33 per cent).

The wide range of Eastern European stocks suggests that Germany as a financial centre is appealing. For private investors this holds true. But as a ZEW poll conducted among portfolio managers of Eastern European investment funds and conversations with representatives of two major German securities firms showed, the German market has a drawback for institutional investors. According to those polled, the transaction volume of Eastern European stocks is simply too low. Since liquidity, the volume of securities traded on a stock exchange, is the key criterion for portfolio managers when to decide for a particular stock or stock exchange, Germany as a financial centre plays a rather insignificant role for institutional investors.

Liquidity is limited

This gives rise to the question why liquidity of Eastern European stocks is so limited in Germany. One reason is the structure of the German stock exchange landscape. In Germany, several regional stock exchanges coexist. In terms of turnover, Frankfurt is the leading exchange for Eastern European stocks in Germany. However, with more than 80 Eastern European securities each, the bourses in Berlin and Munich also play a significant role. In terms of turnover, each of them accounts for more than a quarter of total trading volume in Eastern European stocks in Germany.

In the eyes of institutional investors another factor restricting the appeal of Germany as a financial centre, and consequently also its liquidity, is the availability of information or the lack thereof. The portfolio managers surveyed stated that in Germany just like in Eastern Europe access to information relevant to decision-making processes was much more limited, and that elsewhere information was available more rapidly and more widely. They argue that for example, most brokerage firms were based in London and that institutional investors depended on quick and often private information from these firms. Moreover, every year the brokerage firms organize conferences for analysts where companies from Eastern Europe answer questions put to them by investors; something those polled believe helps to keep London better informed.

The New Europe Exchange (Newex) represents a first attempt to make Germany more attractive to institutional investors trading in Eastern European securities. This joint trading platform for Eastern European stocks of Deutsche Börse AG and Wiener Börse AG has taken up some of the problems discussed above. In committing themselves to so-called ad-hoc disclosure, the companies listed on it are obliged to report facts influencing their share price immediately. Besides, annual conferences of analysts are planned. Stringent listing requirements are meant to ensure that the traded companies are of high quality.

Yet, Newex cannot improve liquidity by itself. Although an innovative market model is to guarantee liquidity even for securities that may be fairly illiquid, trading in Eastern European securities remains fragmented and scattered across the different regional bourses in Germany. Typically admission to the Newex only means that the Eastern European stocks traded in Frankfurt and Vienna are listed additionally on the Newex. ◄

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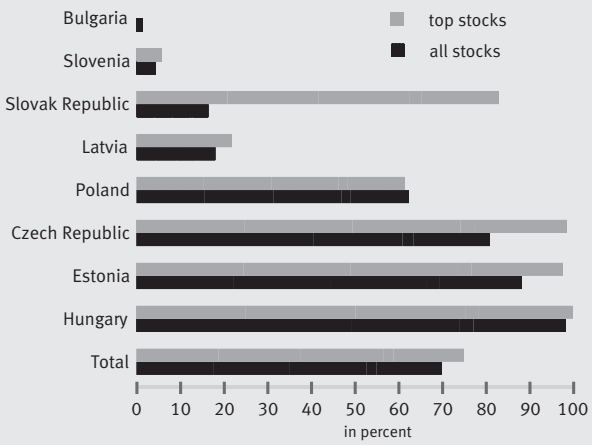
Extent to which Germany as a financial centre covers Eastern European stock markets



Note: What is shown is the share in domestic market capitalisation of the Central and Eastern European stocks traded in Germany. In Germany stocks from the top tier of the Bulgarian exchange are not available. There was no reliable data on market capitalisation for Lithuanian and Romanian companies.
Source: Deutsche Börse, local bourses in Central and Eastern Europe, own calculations.

ZEW Financial Market Test

Results of the Survey in April 2001

■ 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 400 experts take part in the survey. 270 of them work in banks, 50 in insurance companies, 40 in investment companies and 40 in other industries. Participants in the survey are financial experts 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 April 2, 2001 and April 24, 2001 and all calculations are termed to April 27, 2001. ◄

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Euro zone: Experts expect ECB to cut interest rates

■ In April the stockmarkets of those countries whose central banks have reduced their interest rates are being evaluated positively. These are: Great Britain, Japan, and the US. Europe, however, profits only slightly from this trend: The surprise reduction in interest rates in the US has also triggered an increase in the expectations on European stock markets. By now close to 80 per cent of the experts questioned believe in rising prices for the Euro Stoxx 50 again. It should be able to rise up to 4,700 points again by July. In the opinion of the analysts the Dax could reach the 6,500 mark within the same timeframe.

Negative information on the deficient release of information by some companies in the Neuer Markt are probably to blame for the more critical evaluation of the Nemax 50 relative to the Dax this month. Apparently there is still uncertainty concerning the determination of the fair value of companies in the technology sector. Accordingly the bandwidth of the price forecast is high. Optimists believe that the Nemax 50 will stand at 1,800 points in July. According to pessimists a relapse to 1,500 points is possible. Therefore the analysts prefer to take a stake in the traditional insurance values of the Dax. Currently these are rated highest among all sectors by the experts. In addition to the positive interest environment, the merger of Allianz and Dresdner Bank seems to fuel this analysis.

The expectations on stock prices in Europe are based, however, on the assumption that the European Central Bank will reduce interest rates soon. The pressure on the ECB is up after the repeated reduction of US interest rates. The forecast for the three-month interest rate Euribor is therefore 3.8 per cent until July – this is about 100 basispoints lower than currently. Bonds are increasingly getting into pressure within this environment. The hopes of analysts that the long term interest rate may fall is diminishing. One fifth of the analysts believe in rising long term interests again. In light of the turbulence on the stock market, bond markets have profited in the last few months for they are viewed as a safe haven. Now, however, stock prices seem to have reached a level where they are in competition with bonds again. ◄

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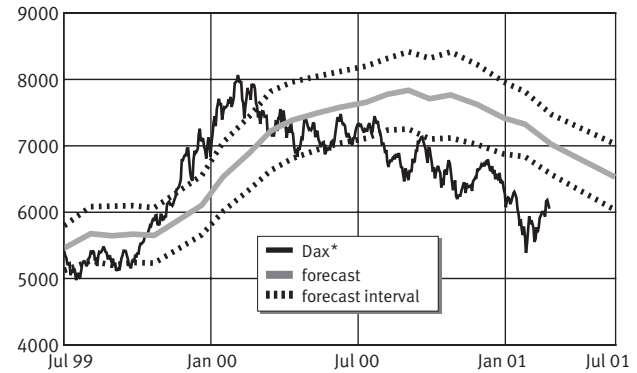
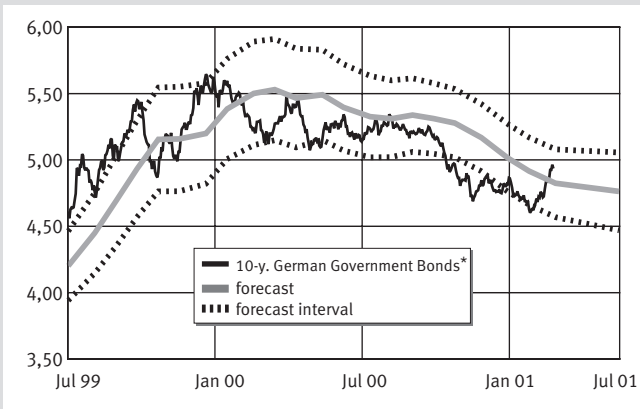
DAX: Actual development and forecast



Source: *Thomson Financial Datastream, ZEW

10-y. German Government Bonds: Actual development and forecast



Source: *Thomson Financial Datastream, ZEW

ZEW Conference

The Economics of Information and Communication Technologies

The ZEW is hosting its first international conference on „The Economics of Information and Communication Technologies (ICT)“ on **June 18-19, 2001**. A total of 29 papers will be presented at the conference. Contributors include prominent researchers such as Thomas Hubbard (University of Chicago), Bruno Jullien (University of Toulouse), Ishaq Nadiri (New York University), Amil Petrin (University of Chicago), Scott Stern (MIT) and Kevin J. Stiroh (Federal Reserve Bank of NY).

Important issues to be discussed at the conference are the impacts of ICT on productivity, growth and employment; the industrial organisation of software and internet industries; digital markets and e-commerce; new information and communication technologies; firm organisation as well as innovation and intellectual property rights in ICT industries.

The scientific committee, consisting of renowned scholars on ICT topics such Erik Brynjolfsson (MIT), Frank Lichtenberg (Columbia University), Georg Licht (ZEW), Franco Malerba (Bocconi University), Konrad Stahl (University of Mannheim) and Jack Triplett (The Brookings Institution), was successful in compiling a coherent conference program out of a total of 63 submission mostly from Europe and the United States.

The conference is jointly organised by the ZEW's research department Industrial Economics and International Management and the recently founded research group Information and Communication Technologies.

The conference is open to the interested public. More detailed information can be found on the ZEW website: www.zew.de/ICT-Conference/index.htm. Registration forms and the preliminary conference program are available at the conference website.

ZEW Publications

■ Discussion Papers

Download the Discussion Papers at our web site: ***www.zew.de/en/publikationen***

Böhringer, Christoph; Welsch, Heinz; Löschel, Andreas: *Environmental Taxation and Structural Change in an Open Economy. A CGE Analysis with Imperfect Competition and Free Entry*, No. 01-07.

Rennings, Klaus; Zwick, Thomas: *The Employment Impact of Cleaner Production on the Firm Level: Empirical Evidence from a Survey in Five European Countries*, No. 01-08.

Kaiser, Ulrich: *Moving In and Out of Financial Distress: Evidence for Newly Founded Service Sector Firms*, No. 01-09.

Almus, Matthias; Czarnitzki, Dirk: *The Effects of Public R&D Subsidies on Firms' Innovation Activities in a Transition Economy: The Case of Eastern Germany*, No. 01-10.

Büttner, Thiess: *Fiscal Externalities in Local Tax Competition: Empirical Evidence from a Panel of German Jurisdictions*, No. 01-11.

Jacobebbinghaus, Peter; Zwick, Thomas: *New Technologies and the Demand for Medium Qualified Labour in Germany*, No. 01-12.

Reize, Frank: *FIML Estimation of a Bivariate Probit Selection Rule – An Application on Firm Growth and Subsidisation*, No. 01-13.

Lange, Andreas; Vogt, Carsten: *Cooperation in International Environmental Negotiations due to a Preference for Equity*, No. 01-14.

Lüders, Erik; Peisl, Bernhard: *How do Investors' Expectations Drive Asset Prices?*, No. 01-15.

Heinemann, Friedrich; Winschel, Viktor: *Public Deficits and Borrowing Costs: The Missing Half of Market Discipline*, No. 01-16:

Wolf, Elke: *Comparing the Part-time Wage Gap in Germany and the Netherlands*, No. 01-18.

Czarnitzki, Dirk; Fier, Andreas: *Do R&D Subsidies Matter? – Evidence for the German Service Sector*, No. 01-19.

Moch, Dietmar: *Price Indices for Information and Communication Technology Industries – An Application to the German PC Market*, No. 01-20.

Böhringer, Christoph; Ruocco, Anna; Wiegard, Wolfgang: *Energy Taxes and Employment: A Do-it-yourself Simulation Model*, No. 01-21.

Kaiser, Ulrich: *A Simple Game-theoretical Framework for Studying R&D Expenditures and R&D Cooperation*, No. 01-22.

Almus, Matthias: *Evaluating the Impact of Public Start-up Assistance – Results from an Econometric Approach*, No. 01-23.

Dherment-Ferere, Isabelle; Köke, Jens; Renneboog, Luc: *Corporate Monitoring by Blockholders in Europe: Empirical Evidence of Managerial Disciplining in Belgium, France, Germany, and the UK*, No. 01-24.

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