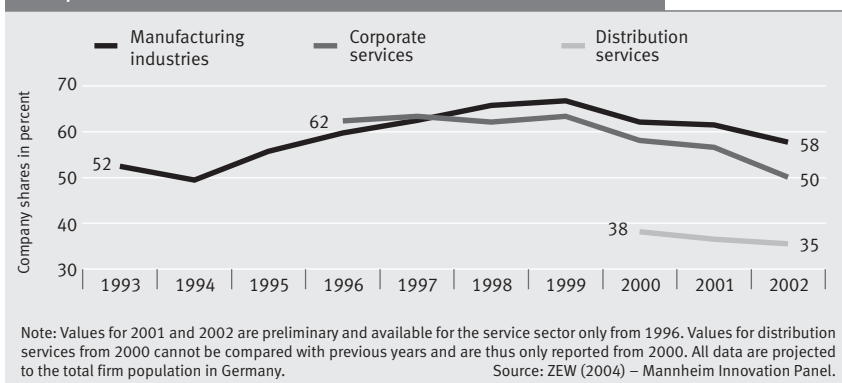


with Special Stock Option Watch

Slowdown in the Pace of Innovation

Companies with successful innovation activities 1993 to 2002



In 2001 and 2002, more and more small enterprises in Germany cut back on innovation activities. Large enterprises, in contrast, have proved to be as innovative as ever and increased their investments in this area right up until 2003. Investment spending in innovation projects in the German economy is also set to increase in 2004. These are the findings of the recent innovation survey, which the ZEW has conducted every year since 1993 on behalf of the Federal Ministry for Education and Research.

In 2002, the percentage of companies reporting successful product and process innovations decreased markedly compared to the previous year. The economic situation, unfavourable since the end of 2000, has also had an impact on innovation investments – albeit with some delay. In 2002, the innovator rate in the manufacturing sector was a mere 58 percent. Among providers of corporate services (such as IT/telecommunications, technical services, consulting, banking/insurance, and other business-related services) it even fell to 50 percent.

The particularly marked decrease as compared to 2001 was primarily due to low-technology business-related services such as cleaning, surveillance and supply of temporary workers. In 2002, only one in three companies among distribution service providers (wholesale and retail sectors, transport, rental services) experienced successful innovations.

Decreasing innovator rates and increasing spending

The drop in innovator rates above all reflects the behaviour of small and medium-sized enterprises (SMEs). On the whole, large enterprises continued to follow the route of innovations in 2002. They continued to markedly increase their investments in new products or new processes. As overall innovation spending is mainly dependent on the behaviour of large enterprises, total innovation investments in the manufacturing industry peaked at almost 68 billion euros. In 2000, this amounted to a mere 60 billion euros. Industrial enterprises thus significantly increased the

investments originally planned for 2002. They also forecast increasing overall resources for innovation for the years to come, although at significantly decreased amounts. While innovation expenditure increased by a nominal eight percent in 2002 compared to the previous year, growth of just two percent is expected in 2003 and 2004.

In 2002, an unprecedented 17 billion euros was available for innovation in corporate services. After a decrease in 2001, it was above all technology-oriented service providers (IT, technical offices, R&D service providers) as well as banking and insurance institutions which markedly increased their innovation budgets. Corporate service businesses expect a slight decrease (-2 percent) in 2003 and a slight increase (+2 percent) in 2004.

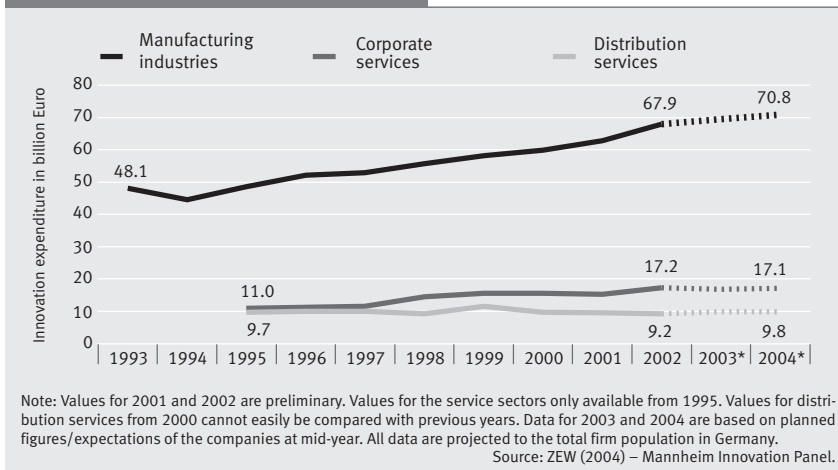
The distribution service providers maintained the level of innovation expenditure at approximately 9 billion euros in 2002. They are planning a significant increase (+8 percent) to around 10 billion euros for 2003. It is above all the transport sector which intends to increase its innovation expenditure. In 2004, inno-

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RESEARCH FINDINGS

Innovation expenditures 1993 to 2004



vation expenditure is to be maintained at the level of 2003.

SMEs – cause for concern

Despite the increase in innovation expenditure, even during a period of general economic weakness, it is important not to lose sight of a growing weakness in the innovation performance of the German economy: the marked decrease in the innovation investments of SMEs. Since 1998/99 the share of successfully innovating companies among SMEs has steadily declined.

This share fell to 50 percent in 2000 among small enterprises with less than 50 employees. This is the lowest share since 1996, although significantly higher than the 40-45 percent of small enterprises investing in innovation in the manufacturing sector during the recession phase of 1993/94. Enterprises with a medium number of employees show a higher level of innovation investment than small enterprises; however, these are also on the decline. In comparison, the innovator percentage of large enterprises in the manufacturing sector remained unchanged at a high level of more than 90 percent.

Large enterprises are continuously expanding their innovation expenditure while the expenditure dynamism of SMEs is rather restrained. In manufacturing, innovation expenditure of SMEs continuously decreased after strong

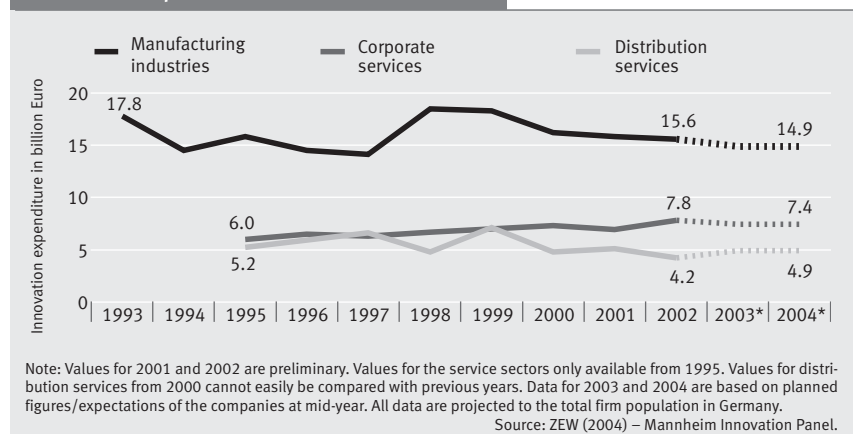
growth in 1998 and will again drop to the level of 1997 in 2003.

The situation is rosier for corporate services. During the “New Economy” boom at the end of the 1990s, SMEs, too, significantly increased their innovation expenditure in the software, consulting, and R&D services segments until 2000. After a slight decline in 2001, innovation expenditure even increased again in 2002. In contrast, with regard to distribu-

planned increase in large enterprises, however, amounts to 3.5 percent. Corporate services present a similar picture – an average annual decline of three percent for SMEs contrasts with a planned increase of two percent for large enterprises.

One reason for the different developments of innovation expenditure of SMEs and large enterprises may be the financing situation. Expenditure for innovation projects represent investments involving great uncertainties regarding future revenues. Such investments are usually financed by the enterprises from the cash flow because outside capital is normally not available for uncertain projects such as developing new products or processes. The profitability situation is fundamentally different for SMEs and large enterprises, however. In the manufacturing industry, almost 50 percent of all enterprises with 5 to 49 employees earned a net operating margin of less than 2 percent in 2002 (as was the case in 2001). Of enterprises with 500 and more employees, one third experienced only low or even no profits. In 2001, this

Innovation expenditure of SMEs 1993 to 2004



tion services, SMEs recorded the lowest levels of innovation expenditure in 2002 since the start of the survey (1995).

The forecast for SMEs in mid-2003 is not very favourable either. Compared to the already rather low level in 2002, SMEs in the manufacturing industry are expecting overall declining innovation budgets for 2003 and 2004 – on average a decline of 2.5 percent per annum. The

share was even as low as 30 percent. Large corporate service enterprises are also less likely to report lower profitability. In distribution services, however, the smallest enterprises are least likely to be characterised by low net operating margins. This corresponds to the plans to significantly increase innovation expenditure in 2003 and 2004.

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RESEARCH FINDINGS

Economic Crises Pave the Way for Reforms

Although there is broad-based consensus about the direction of the reforms required in Germany, actual reforms are only being implemented at a snail's pace, if at all. Empirical research on the determinants of countries' ability to reform is still at an early stage. This article presents the Economic Freedom of the World Indicator as a basis for an international comparative analysis of reform processes.

Why does a country like Germany find it so difficult to implement the necessary reforms to the labour market, social insurance and tax systems? Why among the European countries do the smaller states in particular seem to be better able to rapidly adapt their structures to new conditions? Although questions such as these are of key economic importance, few answers based on sound empirical evidence have been proffered to date. One reason for this gap in our knowledge lies in the very nature of structural reform. Structural changes, such as the degree of regulation on labour markets or the principles according to which social insurance should be organised, are extremely difficult to quantify and to this extent are highly resistant to empirical analysis. This in turn makes it more difficult to arrive at empirically substantiated evaluations of the factors which may be of relevance to the willingness or ability of a country to contemplate and implement reforms.

Against this backdrop, this article aims to present one approach to an international comparative quantification of reforms and an examination of the determinants of a country's ability to reform. The starting point for a quantified presentation of structural reforms is the Economic Freedom of the World Index (EFW, at www.fraserinstitute.ca/economicfreedom) published by the Canadian Fraser Institute. The EFW Index claims to measure the economic freedom

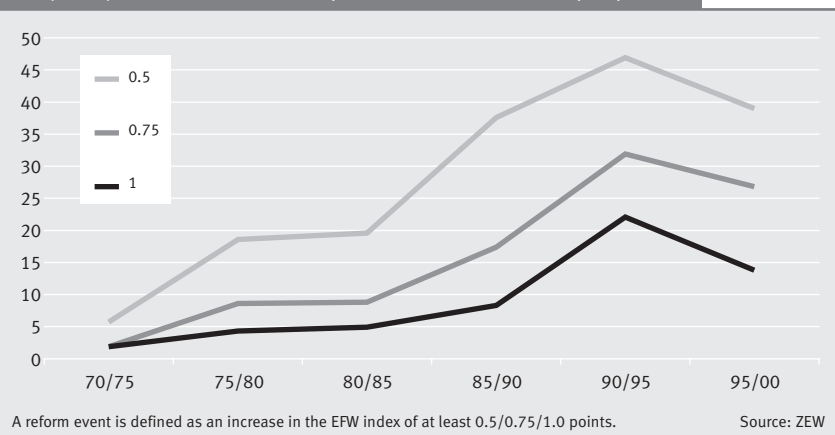
of a country. The overall index measures economic freedom in the following five areas: size of government, legal structure and protection of property rights, access to sound money, international exchange and regulation. Each of these subindicators is placed on a scale from 0 (completely unfree) to 10 (completely free).

The individual indicators are aggregated to form the overall indicator in a simple and transparent way based on a unweighted average. The current version of the index consists of a subset of 38 different variables, a third of which are

improvement in the EFW index during a five-year period of at least 0.5, 0.75 or 1 index point. Drawing on this definition it is apparent that worldwide reform activities accelerated in pace after 1970 and peaked in the period 1990/1995. An especially large number of ambitious reform projects were implemented during this five-year period resulting in a very marked increase in the EFW indices.

The analysis of the IFW subindicators also provides a revealing glance at the key focus of reforms. Liberalisation of international transactions, improve-

Frequency of reform events (as percent of observations per period)



based on survey data. At the present time the index is available for 123 countries around the world. The index is calculated back at five year intervals to 1970 and also since the year 2000 provides annual data. Thanks to the breadth of its content and its availability for many countries over a number of years, the EFW index also provides a suitable tool for the empirical analysis of reforms. The basic idea is that a substantial increase in economic freedom in a particular country over a specific period of time should be interpreted as a reform event.

Some descriptive analyses show how it can be used in a reform context. In the following, a reform event is defined as an

improvement in legal systems and monetary constitutions were key elements of international reform activities in the 1970s and 1980s. Only in the post-1995 period did reform processes begin to concentrate on the state sector (e.g. the reduction of government spending ratios).

How do reform states and non-reform states differ? Analysis of the EFW index shows that the first group enjoyed a much lower degree of economic freedom and lower economic growth on the eve of reform. And, although not statistically significant, reform states also tend on the whole to have younger populations than non-reform states.

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RESEARCH FINDINGS

Business Activity Picks up in German IT-Related Services Sector

The value of the ZEW-IDI, sentiment indicator for the German IT-related service providers, is 62.6 points in the second quarter of 2004. This value clearly exceeds the value of 55.4 points of the first quarter. Both the firms' evaluation of the current business situation, as well as their business expectations for the third quarter of 2004 add to this noticeable increase in the indicator value.

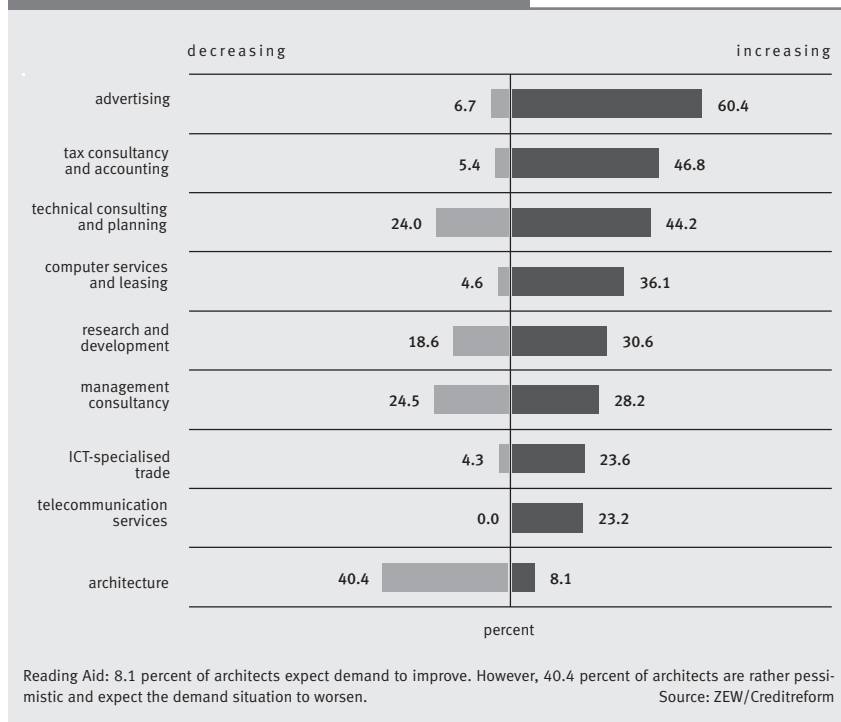
The partial indicator of the ZEW-IDI which reflects how the firms rate the current economic situation is 58.2 points in the second quarter of 2004 (previous quarter 51.8 points). The fact that this value clearly exceeds the 50 point mark indicates a measurable increase in business activity compared to the first quarter

This is the result of a business survey among German IT-related service providers that the ZEW and the credit reference agency Creditreform conducted in June and July 2004. About 1,100 enterprises participated in this survey. The sector of the IT-related service providers consists of the Information and Commu-

technical consultancy and planning, research and development as well as advertising).

In the second quarter of 2004 tax consultants and accountants again have the highest turnover share of firms reporting an increase in sales compared to the first quarter of 2004. Surprising is the high turnover share of firms reporting a sales increase in ICT-specialised trade and architecture. The turnover share of those enterprises which report a sales increase compared to first quarter sales is above 55 percent in these two branches. In the first quarter of 2004 they had experienced a below average sales development. Enterprises in computer servicing and -leasing as well as in telecommunications on average also report significant sales improvement.

Demand expectations of the individual branches



of 2004. The partial indicator which shows the economic expectations for the third quarter of 2004 is 67.3 points. The strong rise in this indicator value compared to the 59.1 points of the first quarter signals the confidence with which the German IT-related service providers look ahead to the second half of 2004.

nication Technology (ICT) service providers (enterprises of the branches computer services and leasing, ICT-specialised trade as well as telecommunication services) and knowledge intensive service providers (enterprises of the branches tax consultancy and accounting, management consultancy, architecture,

Employment situation to improve by the end of the year

Despite the positive developments in demand and sales, the employment situation within the sector of IT-related service providers continues to worsen. The overall balance of positive and negative employment changes is negative again in the second quarter of 2004. However, the branches telecommunications, tax consultancy and accounting as well as ICT-specialized trade show first signs of improvement. The balance of positive and negative employment changes is positive in these branches of the services sector. Overall expectations for the employment situation in the sector in the third quarter of 2004 raise hopes that the negative employment trend can be reversed by the end of the year. On average, the enterprises which plan to increase their staff in the third quarter of 2004 have a higher turnover share than those enterprises which plan to reduce their staff at that time.

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RESEARCH FINDINGS

Older Employees: Facts and Fiction

In comparative international terms, the labour force participation rate of older workers in Germany is very low. In addition to the social security rules relating to early retirement, this is often believed to be the result of the prejudices of human resources departments which tend to regard older workers as less innovative, less able to cope with stress, and – as if that wasn't enough – too expensive. A new ZEW-study reveals, however, that the views of personnel managers only partially explain the age structure of companies' workforces.

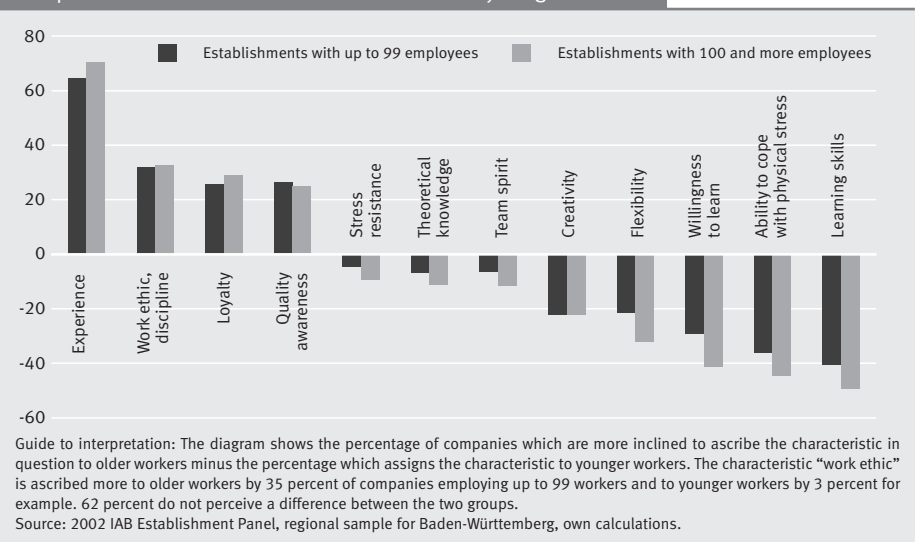
The labour force participation of older workers is determined on the one hand by their decision whether or not to participate in the first place and by companies' human resources policies on the other. A ZEW study based on the 2002 IAB Establishment Panel for Baden-Württemberg investigates if the widely held view that the relatively low activity rates of older people can be largely explained by the fact that many personnel managers are sceptical about the working capacity and commitment of older employees is correct. The personnel managers of the 800 firms with more than 20 employees included in the data records state that their older workers do have certain deficits in terms of the amount of work they are able to cope with, their willingness to learn, and flexibility. In terms of experience, quality awareness and loyalty, however, they are superior to their younger colleagues (see diagram). Across the whole gamut of surveyed characteristics, older employees are not perceived by personnel managers as offering any significant disadvantages compared with younger people. This even applies if responses are weighted according to the importance attached to each characteristic in the firm's requirements profile.

A multivariate analysis of the share of over 50-year-olds in establishments in Baden-Württemberg revealed that personnel managers' assessment of older

workers only provides a statistically significant partial explanation for an establishment's age structure in the case of smaller establishments which employ fewer than 100 people. In comparison with smaller establishments, fewer people tend to quit voluntarily in larger companies and this means that it is not possible, in the context of natural fluctu-

to strengthen the rules providing protection against dismissals. Owing to the survey design it was not possible to examine the influence of the relative incomes received by older and younger workers directly. For this reason it is not possible to verify directly the hypothesis that companies avoid older employees for cost reasons.

Comparison of the characteristics of older and younger workers



ation processes, to replace older workers with younger people to the extent companies would like. Larger companies are also subject to much more restrictive protection against dismissal rules than smaller firms.

Internal characteristics of the company itself provide a much better explanation of the share of employees aged 50 or older than assessments of the characteristics of older workers. Companies formed after 1990, for example, employ significantly fewer older workers than companies that have been around for longer. The share of employees aged 50 or over is also lower in firms with state-of-the-art technical equipment. Companies with a works council tend to employ more older workers than companies in which employee interests are not represented to the same extent. This may be due to the fact that works councils are able to use their codetermination powers

Overall the results suggest that the employment of older workers is strongly determined by institutional restrictions (such as protection against dismissal or the existence of a works council) and less by deliberate efforts by the personnel department to bring about a specific age structure in companies. Bearing in mind demographic trends and the increase in the average age of the labour force which they entail, it will become increasingly important for individual companies – and for the overall economy – to develop human resource policies which make it more worthwhile for companies to employ older workers than is currently the case. In this context, a key role will be played by ensuring that employees' knowledge keeps pace with technological developments.

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INSIDE ZEW

ZEW Awards the Heinz König Young Scholar Award for the First Time

The ZEW's Heinz König Young Scholar Award has been presented in Mannheim for the first time. In addition to the prize of 5,000 Euro, the winner of this award will also have the opportunity to undertake research work at the ZEW for three months. This year's sponsor of the prize is Freudenberg & Co. Kommanditgesellschaft, Weinheim. It is intended that this prize, named in honor of Prof. Heinz König, the founding Director of the ZEW, who died in 2002, will recognize excellent empirical work by young economists. With this, the ZEW has made the decision not to add to the many awards made to successful researchers who are

already established. Instead it is intended that the prize will help the next generation of academics to develop their work. This prize is awarded at the end of the ZEW Summer Workshop, which is held once a year in Mannheim.

Wolfram Schlenker, Ph.D., Assistant Professor at the University of California in San Diego, was the first recipient of the award, which was presented by ZEW President Prof. Wolfgang Franz. The researcher received the Heinz König Award for his work on climate change and its consequences for agriculture that relies on irrigation. In addition to the effects of a rise in temperature on the need for

water, Schlenker has also made a special study of the possible reduction in the value of irrigated agricultural land as a result of climate change.

Franz praised Schlenker's work as a significant empirical analysis on a solid theoretical basis, undertaken in an area in which few studies have been carried out to date. In particular, the use of microdata (in this case including data from the panel on agriculture in California) to analyze macroeconomic and social problems can be said to be an important contribution towards furthering academic knowledge in a way that would have been appreciated by Heinz König.

ZEW to Become "Blue List" Institute as of January 1, 2005

Following the decision of the Bund-Länder-Commission for Educational Planning and Research in November 2003 and its confirmation by the federal chancellor and the heads of government of the Länder in March 2004, the ZEW is set to receive joint federal and state research assistance as a "Blue List" research institute as of January 1, 2005. As a Blue List institute, the ZEW will also be a member of the Leibniz Association research organisation. Following an outstandingly rated evaluation, the German Science Council had in fact recommended the inclusion of the ZEW in the Blue List as early as 1999.

In its evaluation of the research work of the ZEW, the Science Council was unanimous in its verdict that the institute has developed into a competence centre for applied empirical economic research since it was first set up in 1991. Thanks to its research profile, the ZEW is a com-

petent discussion and cooperation partner for university and non-university research institutions as well as a highly sought after provider of economic policy advisory services.

Now that the requisite financial resources are available, the recommendation of the Science Council will be put into effect on January 1, 2005. Gerhard Stratthaus, the finance minister of the State of Baden-Württemberg and chairman of the ZEW's supervisory board commented: "This is fantastic recognition of the scientific work undertaken by ZEW and demonstrates that the research institution founded by the state government and others has managed to catch up with the leading players among German economic research institutes."

The Leibniz Association currently brings together 80 – with the ZEW and three other new members 84 – legally and financially independent research in-

stitutes and service facilities actively engaged in research work in Germany. Apart from the co-financing each of these bodies receive from the federal and state governments, a common feature of all the members is their national significance and the forward-looking work they undertake on behalf of Germany as a whole.

With the inclusion of the ZEW in this funding arrangement, the grant aid previously provided exclusively by the State of Baden-Württemberg – around 5.9 million euros in 2003 (= 50 percent of ZEW's entire budget) – will be superseded as of 2005 by joint state/federal financing. This means that, in the future, the Federal Government will provide 50 percent of the required financing, Baden-Württemberg, the state in which ZEW is based, will pay around 44 percent and the remaining state governments around 6 percent.

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ZEW FINANCIAL MARKET SURVEY

Results of the Survey in July 2004

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 experts take part in the survey. 280 of them work in banks, 50 in insurance companies and

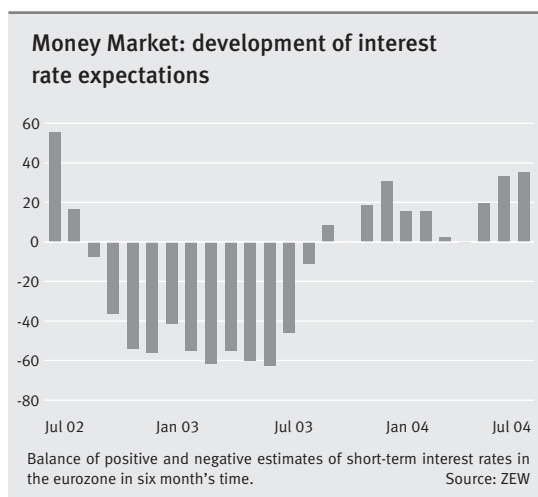
investment companies and 20 in other industries. Participants in the survey are financial experts of the finance departments, the research departments and the economic departments as well as the investment and securities departments of the firms. The experts are questioned on their medium term expectations 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.

Information to the applied procedure is available as an abridged version published by the ZEW. The present survey was conducted between June 1, 2004 and June 21, 2004. All calculations are termed to June 24, 2004.

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Eurozone: Still no Majority for a Change in Interest Rate Policy

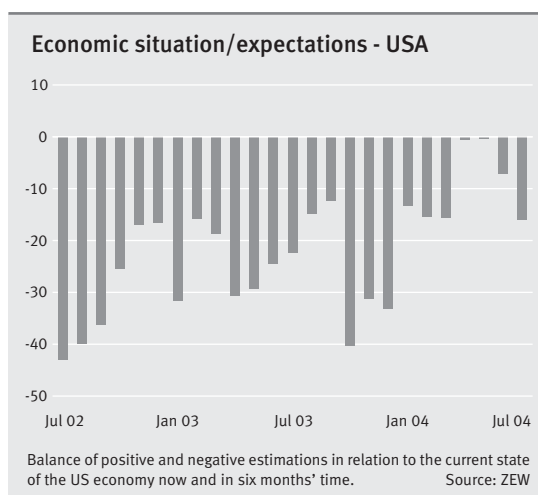


Expectations of a hike in interest rates by the ECB are slowly growing, but fears remain moderate. Only around one third of experts believe that short-term interest rates are set to increase. Compared with the previous month, this value has thus increased by 9.5 percentage points. 62.5 percent of experts, in other words a distinct majority, nonetheless continue to expect the ECB not to tighten the monetary reins in the next six months. Bearing in mind the slight let up in prices on the oil market, fears of inflation have not substantially grown in comparison to the previous month. However, there is now greater dissent in the available estimates. Both groups, those who fear an increase in the inflation rate and those who believe that inflation is falling, have increased by around 5 percentage points.

The situation on the oil market is seen optimistically by a majority of observers: Only a minority of 17 percent believe that oil prices will continue to rise.

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USA: Growing Expectation of Interest Rate Increase



The positive news arriving from the USA over the last few months is an indicator of a sustained improvement on the labour market and provide an encouraging signal for a continued economic upturn. The balance of optimists and pessimists increased by 11.4 points and now lies at 50.4 points.

Expectations of a continuing dynamic development of the US economy over the next six month period have fallen back once again however. The balance of optimists and pessimists fell significantly this month by 9.3 to 11.3 points. Following the substantial increase in consumer and producer prices, the proportion of analysts who anticipate a further increase in prices fell slightly to 76.4 percent. These analysts expect both the development of crude oil prices and the price of the dollar to take some of the inflationary pressure out of the US market. Anticipations regarding an increase in interest rates – which grew strongly in recent months – have now risen slightly to 93.2 points.

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PUBLICATIONS

■ ZEW Discussion Papers

No. 04-34, Maier, Michael; Pfeiffer, Friedrich; Pohlmeier, Winfried: Returns to Education and Individual Heterogeneity.

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ZEW news English edition – published quarterly

Publisher: Centre for European Economic Research (ZEW) Mannheim,

L 7, 1 · D-68161 Mannheim · P.O. Box 10 34 43 · D-68034 Mannheim · Internet: www.zew.de

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