

Exporting Companies Exhibit Higher Labour Productivity

Exporting companies exhibit higher labour productivity than non-exporting companies. An international comparison involving the Centre for European Economic Research shows, however, that individual countries vary significantly with respect to the mean difference in labour productivity between exporters and companies that sell their products only on the domestic market.



International trade results in welfare gains for the economies that are involved in the trade. Macroeconomic welfare gains can therefore also be expected to be reflected at company level. About ten years ago, this consideration was the starting point for numerous studies analysing the relationship between the performance of companies, generally measured by the companies' labour productivity, and their export activities.

Two alternative hypotheses are discussed: The first hypothesis refers to learning effects due to exporting. Flows of knowledge from international buyers or competitors help the domestic company to increase its own productivity.

The second hypothesis states that only highly productive companies can

export because there are additional costs of exporting, such as transport, marketing or product adjustment costs.

Empirical studies for different countries have clearly shown that exporting companies in a particular country exhibit higher labour productivity than companies that do not export their products. The studies revealed that there are major differences between individual countries with respect to the relationship between export activities and labour productivity. Teams of researchers from 14 countries investigated these differences in an international comparison of the relationship between export behaviour and productivity (ZEW Discussion Paper No. 07-069). While most of the analysed countries are part

of the European Union, three emerging economies – Columbia, Chile and China – were also included in the analysis. The study examined companies from manufacturing industries with at least 20 employees.

Varying Export Premia

The first step was to estimate the export premium for all countries. The export premium describes the average percentage difference in labour productivity, measured as sales per employee, between exporting and non-exporting companies.

Even if an identically specified model is used, the export premia vary considerably from country to country. With the exception of Sweden, the export premium is positive and statistically significant in all countries analysed. Thus, exporters are more productive than companies that sell their products only on the domestic market.

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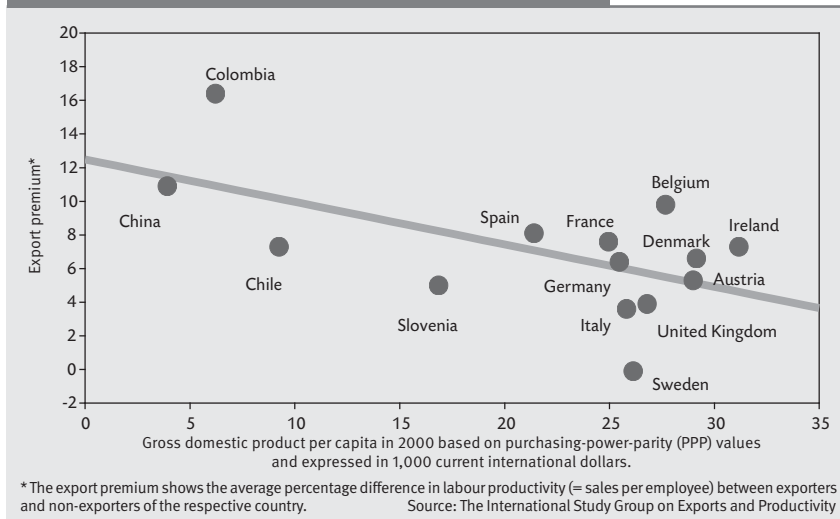
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RESEARCH FINDINGS

The level of the export premium is independent of the degree of economic development, measured as per capita

income (see chart). The trend line shown has a negative slope, but if Sweden whose export premium is not significant

Export Premium and Gross Domestic Product per Capita



and Columbia which has noticeably the highest export premium are disregarded, no negative correlation between export premium and per capita income can be identified. A multivariate analysis confirms that the per capita income has no impact on the level of the export premium.

A distinct picture emerges in response to the question of whether export activities are the cause or effect of the companies' higher labour productivity. Companies increase their productivity before entering the international market. On the other hand, with the exception of Italy, no evidence can be found for the alternative hypothesis, which states that exporting increases firms' labour productivity via learning effects.

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German Innovation Survey 2007 – A Clear Increase in Innovation Expenditure

Favourable economic conditions have led enterprises in Germany to invest more in innovation. Innovation expenditure in the German business enterprise sector was up 6 percent in 2006, to a total of 115.4 billion Euros. The survey's respondents predicted increasing their innovation budgets by a good 5.5 percent in 2007. Their forecast for 2008 is more reserved, however, with innovation expenditure set to grow by around 2 percent. Although these future-oriented investments are on the rise, they have not yet led to a sizeable upturn in successful innovation. The share of enterprises that successfully brought new products to the market only grew slightly. These are the results of the 2007 German Innovation Survey, carried out by the Centre for European Economic Research (ZEW) in cooperation with the Fraunhofer Institute for Systems and Innovation Research ISI and the infas Institute for Applied Social Sciences. The survey was commissioned by the German Federal Ministry for Education and Research (BMBF).

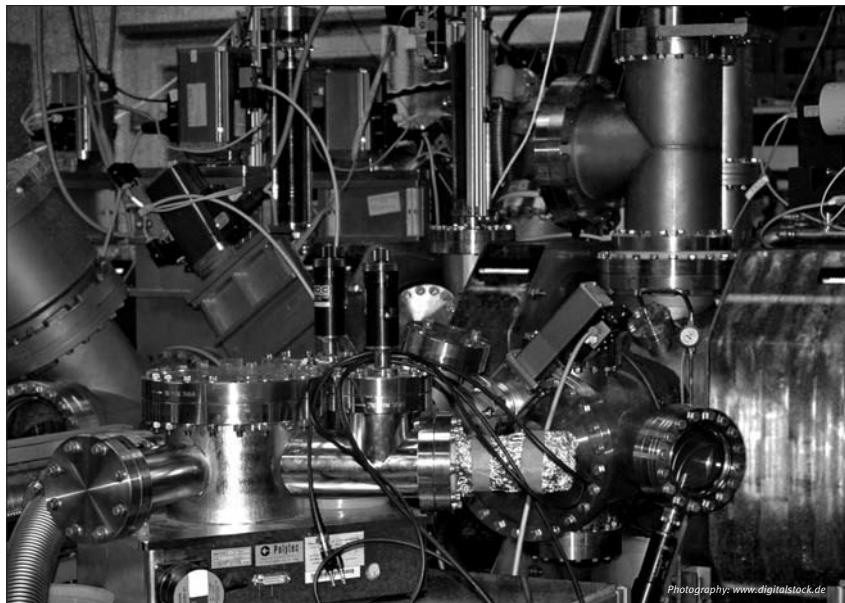
The economic upturn and the associated rise in demand for sophisticated products, along with increased competitive pressure, were the main factors that contributed to the greatest growth in innovation expenditure since 2002. Innovation spending was up in all sectors of the economy in 2006. The manufacturing sector spent 82.8 billion Euros on developing and implementing new products and processes, 5 percent more than the previous year. Innovation expenditure in knowledge-intensive services also grew by a good 5 percent,

reaching 22.1 billion Euros. The "other services" sector allocated an entire 11 percent more to innovation projects, a total of 8.0 billion Euros. Energy and water suppliers' innovation spending totalled 2.2 billion Euro. The media industry spent 0.3 billion Euros, the same amount as in the previous year. The substantial increases in innovation expenditure were accompanied by sales growth, so the ratio of innovation expenditure to sales, the so-called "innovation intensity", barely increased in individual sectors.

Businesses in all parts of the economy, with the exception of other services, are expecting innovation spending to increase again in 2007. The resulting predicted total expenditure is 122 billion Euros. They were more cautious in their estimates for 2008, however. Predicted innovation expenditure is only up slightly, to 124 billion Euro. While manufacturers and energy suppliers plan to increase innovation spending in 2008 (by 3 percent and 9 percent respectively), the service sectors are looking to cut back.

RESEARCH FINDINGS

The main drivers of innovation expenditure growth in 2006 were large enterprises, i.e. those with more than 500 employees. In contrast, small and medium-sized enterprises (SMEs) from the manufacturing and knowledge-intensive service sectors kept their innovation spending virtually constant at the previous year's level. Only in other services did SMEs commit more to innovation, with expenditure up 10 percent. However, SMEs in manufacturing and knowledge-intensive services are also giving out positive signals. They expect to spend considerably more on implementing innovations in 2007 (+7 percent and +5 percent).



Gap between Innovation Expenditure and Innovation Rate

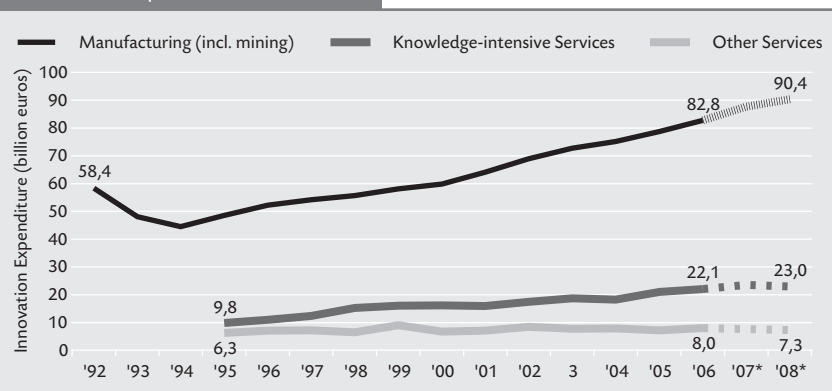
The share of enterprises that have successfully introduced new production processes or products remained stable in 2006, at 46 percent. In the service sectors, there was a noticeable contrast between other services, where the rate was up by 4 percentage points to 33 percent, and knowledge-intensive services, where it fell 3 percentage points to 52 percent. The share of innovators in the manufacturing sector remained unchanged at 58 percent. The different development of innovation expenditure and innovation rate is linked to the fact that the innovation rate is largely determined by the innovation behaviour of SMEs; furthermore, it usually takes a

number of years to develop new products and processes.

Enterprises in Germany enjoyed more success with their innovation projects than in previous years. New products contributed 19 percent of total sales in the German economy in 2006. This represents an increase of one percentage point on 2005, with the other services sector behind most of the progress. Enterprises in the sector managed to increase the share of turnover due to new products from 6 to almost 7.5 percent. Manufacturing and knowledge-intensive services reported increases of only half a percentage point for successful innovation in the form of new product sales.

Compared with the boom of 2000, however, the 2006 results show a noticeably lower share of turnover coming from new products. The share for manufacturers is 3 percentage points lower than in 2000. In other services, the figure was 1 percentage point lower. The individual sectors of the economy reflect this overall trend compared to 2000. Manufacturers reported that 6.5 percent of their 2006 turnover was due to market novelties, while knowledge-intensive service providers (excluding banks and insurance companies) recorded a figure of 4.7 percent. The respective figures in 2000 were 8.5 percent and 7.8 percent.

Innovation Expenditure since 1992



Footnote: Data for 2005 and 2006 are preliminary. Data for Service Sectors available only since 1995. *Data for 2007 and 2008 are based on companies' forecasts prompted in spring 2007. Source: ZEW, Mannheim Innovation Panel.

Marketing and Organisational Innovations

Since marketing and organisational factors are also important for enterprises' success, the respondents were asked about new marketing or organisational methods. Among manufacturers, 56 percent had implemented marketing innovations and 60 percent reported organisational innovations. The shares of knowledge-intensive and other service providers that implemented marketing and organisational innovations are somewhat lower.

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RESEARCH FINDINGS

Self-Productivity in Early Childhood

With support from the German Research Foundation and the Leibniz Association, the Centre for European Economic Research (ZEW) analysed the correlation between skills and the acquisition of new skills from birth to the age of three. If this correlation is positive, it is known as self-productivity. The findings of the study indicate that children who are equipped with higher cognitive and non-cognitive skills at a very early stage in their lives are in pole position to acquire additional skills in the first three years. Parental investment in the development of their children also promotes the latter's skill acquisition.

Human capital research has shown that the first few years of life are crucial for acquiring and developing skills. In this phase, children develop cognitive skills, such as those relating to language and logic, and non-cognitive skills, such as ability to integrate or persistence. Due to the cumulative nature of the skill acquisition process, that is due to self-productivity, early childhood has a long-term impact on, say, success both at school and in later working life. Disadvantaged children find it difficult to make up ground that was lost during this time in their later life.

Influence of Initial Condition

The study by the Centre for European Economic Research (ZEW Discussion Paper No. 07-053) investigates the development of skills from the time of birth to the age of three using mother/child samples from the German Socio-Economic Panel (SOEP). In addition to the birth weight of the children, the study uses the mother's assessments of cognitive and non-cognitive skills at various times in early childhood. The proportion of new-born children in the sample whose birth weight is less than 2,500 grams is seven percent. Children that have such a low birth weight seem to have lower non-cognitive skills and worse health up to 18 months of age.

According to estimates, a 10 percent higher birth weight results in a 3.1 percent improvement in children's non-cognitive skills and a 4.6 percent improvement in health up to the age of 18

months. If non-cognitive skills increase by ten percent up to the age of 18 months, children's linguistic and non-cognitive skills improve by 5.8 percent up to the age of three and everyday abilities (such as a child's ability to eat independently with a spoon or wipe its nose) by 10.4 percent. These findings indicate that initial inequality due to the property of self-productivity continues until the end of early childhood – unless parents compensate for this inequality.



Photography: www.digitalstock.de

An appropriate parent/child interaction and the father's strong support of the mother contribute to improving children's non-cognitive skills, just as regular nutrition does. This, in turn, promotes the acquisition of verbal and social competences as well as everyday skills up to the age of one-and-a-half years. One in four mothers reports intensive support from the father, 89 percent

of all families regularly prepare a hot meal. About one in five children between the ages of two and three receives at least half-day care in an institutional setting. Being looked after in an institutional setting seems to improve a child's everyday competences and social skills, but seems to have no impact on linguistic skills at the age of about three.

Encouragement of Disadvantaged Children should Start Early

According to the study carried out by the Centre for European Economic Research, self-productivity seems to contribute eight times as much to creating new skills in children up to 18 months of age as the father's strong support of the mother. In the medium term, the influence of parents' investment in the devel-

opment of their children nevertheless becomes very important, as self-productivity enables this investment to bear fruit not only in one period, but also in the following period and right through an entire life. So, the earlier compensatory measures for children begin, the more enduring will be their success.

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CONFERENCES

Discussion about Energy Security

Politics and science have recently been showing increasing interest in energy security again. It was for this reason that the Centre for European Economic Research organised a conference on “Energy Security – Concepts and Indicators” at the end of 2007. Renowned researchers in the field of energy security discussed theoretical, empirical and applied studies relating to the definition, analysis and, in particular, measurement of energy security.

Fundamental issues of the scientific study of energy security were addressed

in contributions and discussions during the conference. There was discussion of potential market failure or externalities as well as aspects of incomplete information and the issue of the quantifiability of these research subjects. Starting with energy security, cross-references were made to related topics like security policy and, especially, climate policy. There was a broad spectrum of talks and contributions, ranging from David Greene (Oak Ridge National Laboratories, USA), who gave a talk on measuring the costs of the United States’ oil dependency, to theo-

retical analyses with a more fundamental orientation, such as the study by Anil Markandya (University of Bath, Great Britain), who used a model framework to investigate the consequences of uncertainty, right through to perspectives that had a more political science orientation. One example of the latter category was the contribution by Frank Umbach (Research Institute of the German Council on Foreign Relations in Berlin), whose work placed energy security in the wider context of global political challenges.

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ZEW-Workshop on Competition in Transport Markets

At the end of 2007, the Centre for European Economic Research was host to a workshop on “Competition in Transport Markets”. 45 scientists and experts from the world of practice gathered to take part in a discussion on current topics and trends in competition and regulation of transport markets. The workshop focused on problems relating to competition in air transport markets. The main speakers were Kenneth Button (George Mason University, USA), David Gillen (University of British Columbia, Canada) and Peter Forsyth (Monash University, Australia).

Competition in Container Shipping and Air Transport

Kenneth Button analysed international container shipping and established parallels between this industry and other modes of transport, such as network structure, the existence of customer loyalty programmes or the application of extensive price differentiation strategies in the context of revenue mana-

gement. After a comprehensive discussion, he concluded that the vertical value chain must be analysed more closely to be able to better understand competition in container shipping and analyze it more accurately.

David Gillen presented the implications, in terms of competition policy, of the price discrimination strategies pursued by airlines. He came to the conclusion that mergers or alliances between independent airlines give rise to an expectation of price increases and therefore require a more precise analysis in terms of competition policy. Price discrimination strategies, however, have the potential to mitigate inefficiencies caused by market power and can therefore have a welfare-promoting effect.

Peter Forsyth examined the economic costs and benefits of further deregulation of international air transport. He focused on the possibility of an airline company in country C offering air transport services between country A and country B. He used a case study to conclude that customers would generally

benefit from further deregulation in the form of lower prices. However, the profits of the airline companies would fall in this case and inefficient airline companies would face greater pressure to rationalise. On the whole, the assessment of the welfare effects of further deregulation would be positive.

There were also presentations of other current research projects. For example, Bernhard Wieland (Dresden Technical University, Germany) gave a talk on approaches to a positive theory of pricing infrastructure usage. Steve Brown (Competition Commission, Great Britain) explained how the price sensitivity of consumers to bus journeys in Scotland was estimated as part of a competition case. David Thompson, chief economist of the British Department for Transport, gave a talk on current developments in the airport industry in Great Britain. Finally, Peter Lewisch (University of Vienna, Austria) provided an overview of the importance of competition law for competition in transport markets.

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FINANCIAL MARKET DATA

Monthly ZEW Surveys on the Economic Sentiment in Selected Economies

The ZEW conducts three monthly surveys questioning experts of the finance, the research and the economic departments as well as the investment and securities departments of banks, insurance companies and enterprises for their medium-term expectations (six months) for essential financial market data in several European countries and the Eurozone. The questions asked regard the current business situation, the business outlook, interest rates, stock markets, exchange rates and inflation. Additionally, each month the experts are asked a so-called “special question” on an interesting economic topic.

The Financial Market Survey for Germany is conducted since 1991. Up to 350 financial market experts are questioned in this survey. About 70 analysts regularly participate in the Financial Market Survey for Switzerland that is conducted in cooperation with the Swiss bank Credit Suisse since July 2006. About 70 analysts contribute to the Financial Market Test for the Central and Eastern European region (CEE) and Austria, carried out since May 2007 in cooperation with Erste Bank der Österreichischen Sparkassen, Vienna. The surveyed CEE Region consists of Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Slovenia. The survey collects eco-

nomical data for each of these countries but also looks at the CEE Region as a whole.

The results of the surveys are published each month in Financial Market Reports. The “ZEW Finanzmarktreport” (www.zew.de/FMR) contains the survey’s outcome for Germany. It is available only in German but its main findings are also published in English press releases. The survey results for Switzerland are published in the Financial Market Report Switzerland (www.zew.de/FMR_CH). The survey results for the CEE region and Austria are published in the Financial Market Report CEE (www.zew.de/FMR_CEE). Both publications are available in English and German.

Germany: Expectations Decline

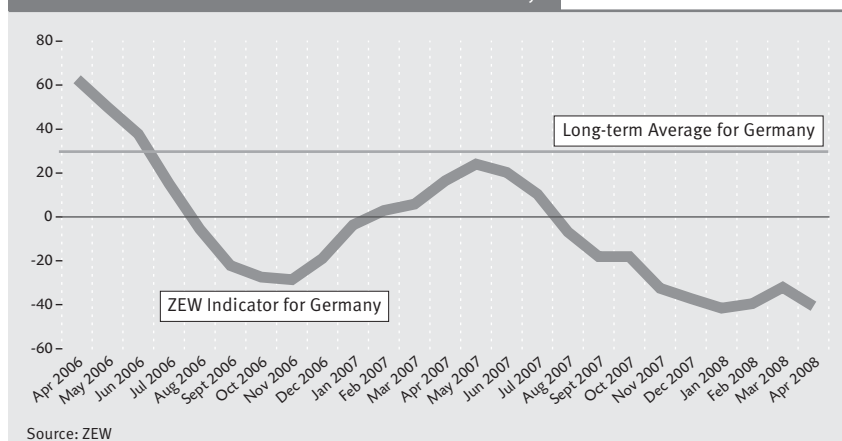
The monthly ZEW Indicator of Economic Sentiment is a well observed outcome of the Financial Market Survey for Germany. Market participants and the media pay special interest to this leading indicator because it reflects financial market experts’ assessment of Germany’s economic situation in six months’ time. The experts questioned judge

whether the economic momentum of the German economy will rise, fall or stay approximately the same in the next six months. The indicator is calculated as the difference between the percentage of analysts who are optimistic and the percentage of analysts who are pessimistic concerning the economic development. Positive values show that the number of

participants expecting a rise in the respective variable outweighs the number of participants with negative expectations. The ZEW Indicator of Economic Sentiment has been on a declining trend for months, in particular due to the outbreak of the Subprime Crisis in the U.S.

After having slightly recovered in February and March 2008, expectations recently worsened again. In April 2008, the ZEW Indicator of Economic Sentiment declined by 8.7 points and now stands at minus 40.7 points: That is clearly below its long-term average of 30.0 points. This means, that the majority of analysts assume that the business activity in Germany will lose steam in the fourth quarter of 2008. The stronger pessimism in April seems to be largely induced by high rates of inflation, caused by record highs of the oil price and rising food prices. The inflation reduces the available income of German households and therefore weakens private consumption.

ZEW Indicator of Economic Sentiment for Germany



FINANCIAL MARKET DATA

Based on the same survey and methodical principle as the ZEW Indicator of Economic Sentiment for Germany the survey also contains an Indicator of Econom-

ic Sentiment for the Eurozone. The Sentiment Indicator for the Eurozone declined in April 2008 by 9.8 points and now stands at minus 44.8 points. Thus, the

indicator reflecting analysts' expectations for the Eurozone shows at present a similar trend as the German indicator.

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Switzerland: GDP Growth and Inflation

In the Swiss survey the analysts were asked in a "special question" in April 2008 to convey their assessment of

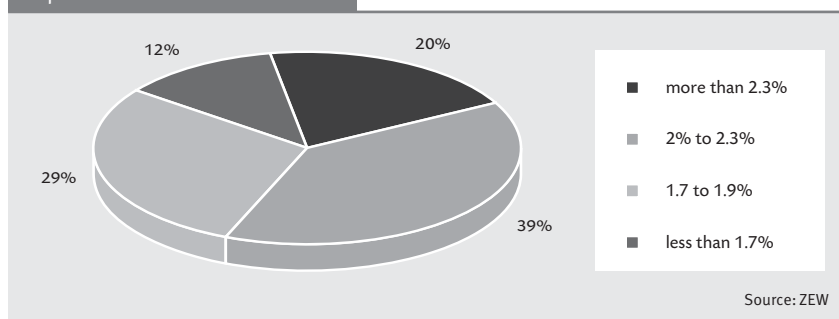
my to grow at the same rate in 2009. 29 percent of the analysts predict a GDP growth rate of a maximum 1.7 percent for

pect the inflation rate to climb in 2008. Precisely 52 percent of the analysts forecast an inflation rate of at least 2 percent, while 37 percent are looking for a rate of less than 1.7 percent. In 2009, inflation is expected to decline in Switzerland.

Besides these long-term expectations, the financial market experts were also asked for their inflation expectations in the medium term. 54.3 percent of the survey participants regard an unchanged high inflation rate as the most likely scenario over the next six months, due to the current inflation rate hovering at the 2.4 percent (year-on-year) level. 30.4 percent of the analysts anticipate that inflation will continue its ascent, while 15.2 percent of the experts foresee declining inflation over the next six months.

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Expected GDP Growth for 2008



the economic trend in Switzerland for the next two years. 59 percent of the respondents forecast Swiss GDP growth of at least 2 percent for 2008, while just 44 percent of the experts expect the econo-

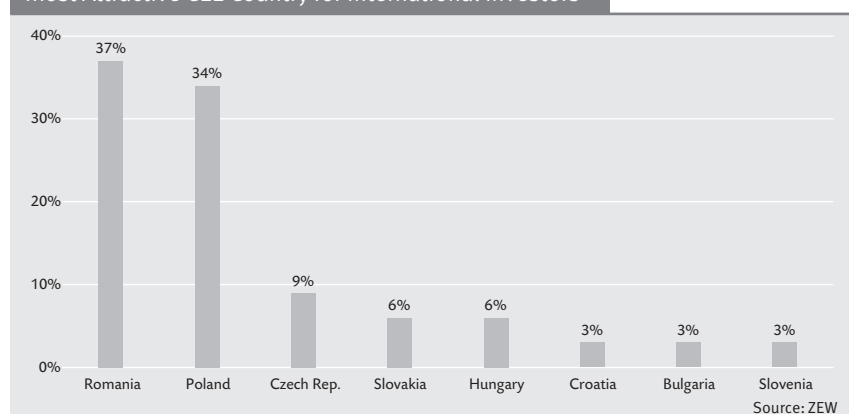
2009. The same percentage of experts anticipates a moderate growth rate of between 1.7 percent and 1.9 percent for 2008 and 2009. Regarding the inflation outlook, the majority of respondents ex-

CEE and Austria: M&A Transactions 2008

In the April 2008 survey, experts were questioned in a special query about their expectations concerning the development of mergers and acquisitions (M&A) activities in the CEE region and Austria this year. 31 percent of the participants predict decelerating M&A-activities in the CEE countries, while 20 percent expect accelerating activities. 26 percent think that M&A-activities will remain on the same level as last year. The majority of experts expect the CEE M&A-market to be dominated by cross-border transactions (54 percent), not by domestic transactions (14 percent).

With regard to the country of origin of foreign investors in the CEE market, most respondents see German investors as the most active (33 percent). Austrian (20 percent) and U.S. investors (13 percent) are ranked second and third. The survey

Most Attractive CEE Country for International Investors



participants consider Romania (37 percent) and Poland (34 percent) to be the most attractive markets for international investors. A majority of 61 percent thinks that Poland will be the country where most corporate transactions will take

place. Romania is second rated by the analysts (22 percent). Most M&A activities are predicted in the Energy and Utility sector, followed by the sector of Financial Services.

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INSIDE ZEW

■ ZEW's Annual Report

The Centre for European Economic Research (ZEW), Mannheim, increased its returns in the business year 2007 to 14.72 million Euros. It therefore notably exceeded the previous year's result (14.15 million Euros). Particularly the ZEW's success in competitions for research-funds and third-party funds contributed to the increased returns. Moreover, the ZEW increased the number of its employees again in 2007, after having largely increased the number in 2006. At the end of 2007, 156 employees worked at the ZEW; 109 of them were scientific staff. In 2007, 13 ZEW researchers successfully completed their dissertation and one ZEW researcher completed his habilitation. The ZEW's Annual Report is available only in German (www.zew.de/jahresbericht), but the report's main findings are published in an English press release: www.zew.de/press956

■ ZEW Conference: Economics of Innovation and Patenting

On June 13 to 14, 2008, the Centre for European Economic Research will host its third conference on the economics of innovation and patenting. The conference aims at stimulating the discussion between international researchers conducting related empirical and theoretical analysis. In addition, the conference will focus on policy implications of recent research. The conference will refer to such topics as knowledge generation and knowledge diffusion, financing aspects of innovation as well as impacts on innovation and patenting.

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PUBLICATIONS

■ ZEW Economic Studies

Christoph Spengel, Timo Reister

Dual Income Tax - A Proposal for Reforming Corporate and Personal Income Tax in Germany

In its Annual Report 2003/2004, the Council of Economic Experts launched a dual income tax as an option for a fundamental tax reform in Germany. In February 2005, the German government appointed the Council to prepare a detailed report on economic effects of a business tax reform, with special emphasis on a dual income tax. With regard to the latter, conceptual problems of tax law and of tax administration were to be addressed as well as possible transitional problems when implementing a dual income tax. This book presents an English version of the original report completed in April 2006.

ZEW Economic Studies Volume 39, Physica Verlag Heidelberg/New York, 2008, ISBN: 978-3-7908-2051-5

■ ZEW Discussion Papers

No. 08-007, Atilim Seymen: A Comparative Study on the Role of Stochastic Trends in U.S. Macroeconomic Fluctuations, 1954-1988.

No. 08-008, Hanna L. Binz, Dirk Czarnitzki: Are Local Milieus the Key to Innovation Performance?

No. 08-009, Matthias Köhler: Transparency of Regulation and Cross-Border Bank Mergers.

No. 08-012, Bernd Fitzenberger, Karsten Kohn, Alexander C. Lembcke: Union Density and Varieties of Coverage: The Anatomy of Union Wage Effects in Germany.

No. 08-013, Dirk Czarnitzki, Andrew A. Toole: The R&D Investment-Uncertainty Relationship: Do Competition and Firm Size Matter?

No. 08-014, Philipp Eisenhauer, Friedrich Pfeiffer: Assessing Intergenerational Earnings Persistence Among German Workers.

No. 08-015, Reint Gropp, Florian Heider: The Determinants of Capital Structure: Some Evidence from Banks.

No. 08-016, Niels Anger, Jayant Sathaye: Reducing Deforestation and Trading Emissions: Economic Implications for the Post-Kyoto Carbon Market.

No. 08-017, Ulrich Oberndorfer: Returns and Volatility of Eurozone Energy Stocks.

No. 08-018, Birgit Aschhoff: Who Gets the Money? The Dynamics of R&D Project Subsidies in Germany.

No. 08-019, Jens Mohrenweiser, Thomas Zwick: Why Do Firms Train Apprentices? The Net Cost Puzzle Reconsidered.

No. 08-020, Michael Overesch, Dennis Voeller: The Impact of Personal and Corporate Taxation on Capital Structure Choices.

No. 08-021, Katrin Schleife: IT Training and Employability of Older Workers.



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I M P R I N T

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