

with M&A Report

Patent Applications Facilitate Access to Venture Capital for Start-Up Companies

Access to venture capital is of particular importance for new start-ups in the high-technology sector. Many new companies fail in their efforts to obtain venture-capital financing, however. To date, little research has been conducted on how patents impact the ability of start-ups to access venture capital. In a collaborative research effort, this subject is being studied by the Centre for European Economic Research (ZEW) and the Institute for Innovation Research, Technology Management and Entrepreneurship (INNO-tec) at LMU Munich.



Photography: www.digitalstock.de

In order to establish themselves on the market, start-up companies are dependant on external resources, such as venture capital. Venture capital is an important success factor, particularly for start-ups in the high-technology sector, as such companies are obliged to invest in cost-intensive R&D activities. In order to obtain venture capital, entrepreneurs must convince potential investors of the quality and growth potential of their company. Investors, for their part, are only able to make an imprecise assessment of the quality of a start-up. For this reason, they rely on

observable attributes, such as patent applications, in order to gauge a new company's potential.

A current study undertaken by ZEW and LMU Munich (ZEW Discussion Paper No. 09-003) investigates the role of patent protection in facilitating access to venture capital. The analysis is based on a survey of 190 German and British biotechnology companies that were founded after 1989. The survey contained comprehensive information regarding the companies' technological performance. In addition, patent applications and grants for all of these com-

panies at the European and US patent offices were identified.

The empirical analysis shows that a company's patent activities have a significant impact on the point in time when venture capital financing is first received. Having filed at least one patent application reduces the waiting period for the first venture-capital investment by 76 percent (in comparison to companies who have filed no patent applications).

High Patent Quality Accelerates Financing

In addition, companies that possess high-quality patents obtain venture capital quicker. As a criterion for patent quality the study looked at the number of times a patent had been cited in the patent process, i.e. the number of times a patent examiner referred, or cited, the patent when assessing new patent applications. As most citations take place

IN THIS ISSUE

Patent Applications Facilitate Access to Venture Capital for Start-Up Companies ..	1
Experts Favour Modification of the Clean Development Mechanism	2
Some German Automobile Brands 20 to 33 Percent More Valuable than Toyota	3
Reduction in EU Regional Funding for Germany to Be Likely	4
Small and Medium-Sized Companies Are Well Prepared to Weather Recession ..	5
Forum for Young Labour Economists	6
ZEW Financial Market Data	7
Inside ZEW, ZEW Discussion Papers	8

RESEARCH FINDINGS

after an investment decision has been made, the result indicates that investors possess the ability to differentiate between patents of high or low quality at an early point in time. The granting of a patent, on the other hand, has no additional impact on when venture capital is obtained. This is probably because investors can make a good advance assessment of the quality of the invention based on the information provided in the patent application. If a patent is challenged by a third party, this increases the probability that venture

capital will be obtained earlier. Opposition to a patent is apparently interpreted as a signal that an invention has commercial potential.

Patents Encourage Competition

The results that have been sketched out in the foregoing are of importance for both entrepreneurs and political actors. Patents are an important source of information in the decision-making process of venture capital investors. While costs are involved in filing for a patent and the

disclosure of business information is required, companies should not underestimate the signalling value of a patent application. Although the competition-reducing effects of patents in their ability to grant a temporary monopoly position have been primarily emphasised in the literature to date, the ZEW and INNO-tec study demonstrates the way in which patents can encourage competition.

Dr. Carolin Häussler, LMU Munich

*Prof. Dietmar Harhoff, PhD,
LMU Munich and ZEW*

Dr. Elisabeth Müller, mueller@zew.de

Experts Favour Modification of the Clean Development Mechanism

In December 2009 the attendees of the World Climate Conference in Copenhagen hope to sign a successor treaty to the Kyoto Protocol that sets ambitious targets for the reduction of CO₂ emissions. Within the scope of the new KfW/ZEW CO₂ Panel, climate experts were asked how emerging and developing nations can be better integrated in climate protection efforts. While the experts support the continued use of the Kyoto Protocol's Clean Development Mechanism, they advocate a number of changes.

The Clean Development Mechanism (CDM), which was initiated under the Kyoto Protocol, allows CO₂ emitters who are subject to greenhouse-gas reduction commitments to invest in emissions reduction projects in emerging and developing nations where no targets have been set. It is often cheaper for emitters to reduce greenhouse gases in developing nations, and these nations also profit from the financial support and new technologies that arrive through the CDM – for example, when CDM projects expedite the development of renewable energy.

The majority of experts surveyed by the KfW/ZEW CO₂ Panel view the CDM as an appropriate instrument for supporting developing nations and efficiently reducing emissions. The majority, however, is convinced that changes need to be made to the mechanism. With respect to the funding of new pro-

ject types, for example, 65 percent of those surveyed believed the CDM should also support projects that make use of carbon capture and storage (CCS) technologies. CO₂ capture and storage has been discussed for several years as an option for limiting greenhouse gas emissions.

Sectoral Agreements as an Opportunity

Experts also view global sectoral agreements as an opportunity to reduce greenhouse gases. One proposal foresees granting companies in certain industries in emerging and developing nations the right to sell emissions certificates as long as they have been able to reduce their CO₂ emissions over a specified time frame. This would create incentives for companies in developing nations to invest in environmentally

friendly production facilities. Such new investments would reduce CO₂ emissions over the long term.

71 percent of the experts surveyed by the KfW/ZEW CO₂ Panel believe that sectoral agreements should be part of a future CDM and that reduction certificates could be issued without further monitoring when CO₂ emissions have been demonstrably reduced.

In the survey, the participants were also asked if nuclear energy represents a desirable alternative for encouraging reduced emissions in emerging and developing nations. The majority (80 percent) expressed opposition to this proposal and argued that nuclear energy should remain excluded from the CDM in the future. Discussions in recent months have also addressed whether political efforts in individual countries to curb greenhouse gas emissions should be directly rewarded with reduction certificates. The surveyed experts were sceptical of this proposal. 44 percent opposed it, arguing that such a measure could create false incentives.

Additional information about the KfW/ZEW CO₂ Panel can be found at: www.zew.de/co2panel

Peter Heindl, heindl@zew.de

RESEARCH FINDINGS

Some German Automobile Brands 20 to 33 Percent More Valuable than Toyota

According to a recent study conducted by ZEW in partnership with the Lower Saxonian Institute for Economic Research (NIW), in no other country is the automotive industry of greater importance to the national economy than in Germany. A particular feature of the German automotive industry is its strong focus on the premium segment. This focus produces important advantages for the German economy.

Directly and indirectly, some two million people are employed in the production of automobiles in Germany. In contrast to prevailing worldwide trends, the automotive sector in Germany has gained increasing importance as a share of national value added over the past 15 years. If one includes indirect value added from demand for intermediate inputs, the German automotive industry accounts for 7.7 percent of GDP. In no other country are these percentages as high.

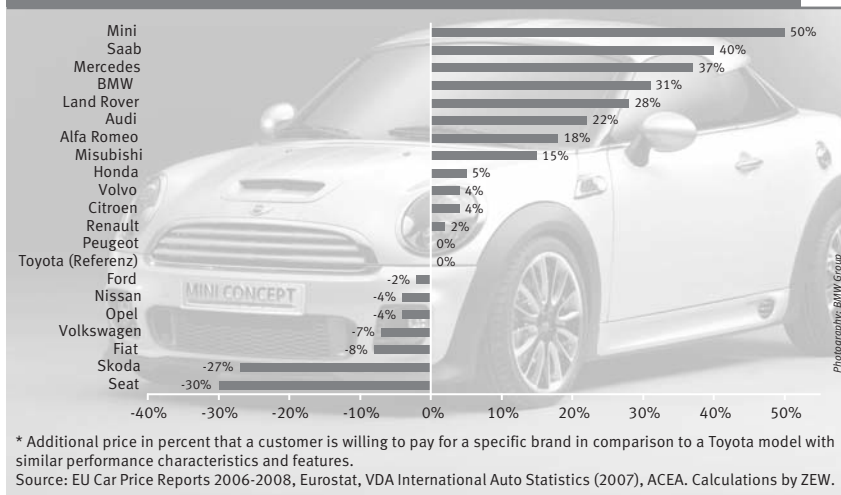
even when two vehicles have the same engine size and basic features. Premium-vehicle manufacturers are thus subject to less price competition, as the price elasticity of demand tends to be smaller, and the brand loyalty of customers is high. At the same time, such manufacturers must conduct more research and development activities in order to assure that the premium attributes of their brand are not lost.

In order to determine the extent to which various automobile brands pos-

was estimated. The estimated coefficients for the brand variables can be interpreted as the share of the vehicle price that represents the additional utility for the customer derived from the car's premium attributes. The reference brand was Toyota, the world's largest auto manufacturer (see Figure).

The results show that the German brands Mercedes, BMW and Audi are clearly premium brands. Mini and Saab were the only two brands for which customers were willing to pay higher premiums. In terms of production volume the three German brands account for around three-quarters of all premium automobiles produced in Europe. By contrast, only 24 percent of the automobiles produced across the EU are premium vehicles.

Average Premium* Customers Are Willing to Pay in Comparison to a Toyota



One reason for the strong position of the German automotive industry is its focus on the “premium” segment. This term refers to automobiles with special quality characteristics that provide their owners with a higher level of “prestige” – even if the concrete attributes that comprise this prestige are difficult to define. Premium-segment customers are willing to pay a higher price (or “premium”) for these quality characteristics,

ess premium characteristics, ZEW calculated the additional amount, or premium, that customers are willing to pay for specific brands. Data on prices and features for the 87 best-selling passenger car models in the EU were collected. The list prices before taxes were decomposed using a hedonic regression analysis. First, the value of the price components attributable to objective characteristics (engine power, size, features)

Stimuli for the Economy

The German economy profits from the specialisation of its automobile manufacturers in the premium segment. Customers demand innovations that represent the future of global market, innovations which are later adopted worldwide. This creates an export advantage. Premium manufacturers are compelled to stay highly innovative, and therefore place high demands on their suppliers for innovations. As many automotive innovations are first released in the premium segment automotive suppliers in this segment, have an opportunity to gain experience with new technologies. Once an innovation has proven its viability, it can then be offered to the standard market. Thanks to the close integration of the German automotive sector with many industries that produce intermediate inputs, high quality expectations are propagated to other branches of the economy, where they encourage additional innovative efforts.

Dr. Christian Rammer, rammer@zew.de

RESEARCH FINDINGS

Reduction in EU Regional Funding for Germany to Be Likely

Regional convergence should remain an aim of EU's structural policy. In this connection, the central role played by per capita income in the determination of funding entitlement is well justified. However, the "Regional Competitiveness and Employment" objective – under which even wealthy regions receive funding – should be reassessed. These are the key findings of a study conducted by the Centre of European Economic Research (ZEW) on behalf of the German Federal Ministry of Economics and Technology regarding the future of the EU's structural policy.

A historical assessment of this field of EU policy reveals that the number of funding objectives has grown over time. Old objectives for funding are typically never phased out. Instead, they become part of new ones. This tendency towards an increasingly diffuse goal system is questionable in terms of economic policy and complicates the monitoring of the programme's success. A survey of the comprehensive econometric litera-

administrative apparatus is in place. This is an illuminating finding.

Funding Period from 2014 to 2020

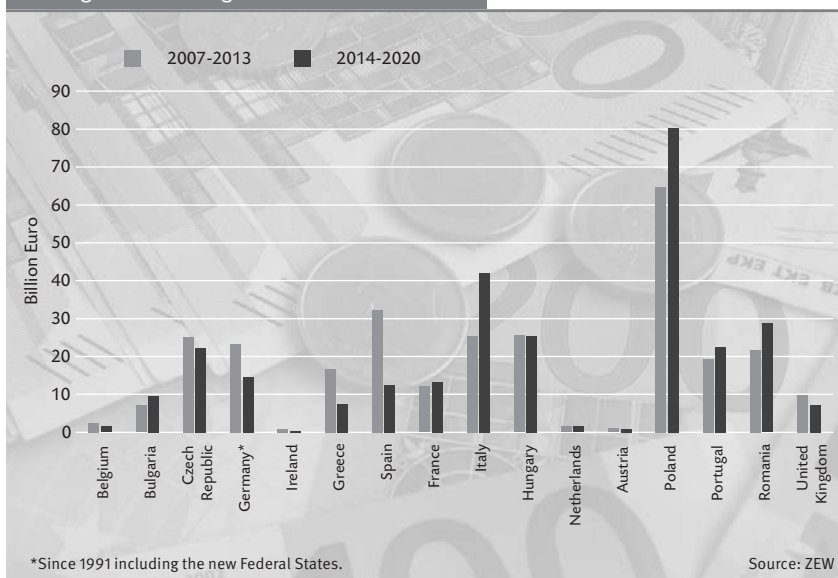
A key analytical part of the ZEW study examines the effects of the continuation of the current funding rules over the next funding period from 2014 to 2020. The results indicate that the regional funding landscape will change

ing will remain essentially unchanged. Poland, Bulgaria and Romania in particular will gain additional funding, whereas the aforementioned Western European countries will experience a considerable funding decline as their convergence regions lose their entitlement (see Figure).

Rich Countries Finance their Funding out of Their Own Pockets

With regard to funding criteria, the key role played by per capita income in purchasing power standards is well justified. This is an operational indicator for which there are no serious alternatives. According to the ZEW study, individual regions as well as entire countries should remain potential recipients of structural funding in the future. The "Regional Competitiveness and Employment" (RCE) objective must be reviewed. It should be debated whether wealthy regions should continue to enjoy the same volume of economic transfers from the EU budget. For the wealthy EU member states, there are hardly any budgetary advantages associated with these transfers, as such states pay themselves for the funds they receive from the RCE programmes through their contributions to the EU budget.

EU Regional Funding for Selected Countries



ture on regional convergence shows that the EU's regional transfer policy has had no unambiguous positive effect on convergence. However, empirical research and a number of case studies indicate conditionally that positive growth effects are witnessed in particular in those places where an efficient

considerably, as numerous regions in several West European countries (Spain, Germany, Greece) are likely to lose their funding entitlement under the convergence objective. Overall, there will be a considerable shift in transfer payments toward the poorest countries, although the total volume of fund-

The Role of the EU Should Not Be Overestimated

The study concludes by warning against overestimating the importance of the EU's regional policy for Europe's regional development. Even with ambitious EU regional policies, it will not be possible to compensate for poor national policy decisions with regard to taxation or the regulation of labour markets, the study states.

Dr. Friedrich Heinemann,
heinemann@zew.de

INTERVIEW

Small and Medium-Sized Companies Are Well Prepared to Weather Recession

Large companies, many of whom are experiencing serious problems in the current recession, have dominated the public discussion in Germany. Yet how have small and medium-sized enterprises (SMEs) been faring? Dr. Christian Rammer, the deputy head of the Industrial Economics and International Management research department at the Centre for European Economic Research (ZEW), has been analysing the perspectives and management strategies of SMEs in the current economic crisis.

How severely have German SMEs been affected by the recession?

There are approximately three million SMEs in Germany. Obviously, not all of these firms are being impacted by the recession in the same way. A large number of SMEs have been hard hit by the crisis. On the other hand, many have been able to protect themselves from negative effects. Companies that serve the domestic market in Germany – for example, with consumer goods or services – have performed relatively well so far. Thanks to labour-market policy measures such as the German government's short-time work programme, consumer sentiment in Ger-

many has remained largely unchanged. Demand has also been shored up by the government's economic stimulus packages. In contrast, export-oriented firms and capital-goods manufacturers have had to cope with steep declines in demand, as global outlet markets have collapsed in the recession.

Who will fare worse in the recession: SMEs or large companies?

Most SMEs will weather the crisis without suffering many ill effects thanks to solid financing and business strategies with a long term focus. The core capital ratio of many SMEs is high. For their credit needs, SMEs usually only rely on a single bank with

whom they enjoy a close relationship, and many projects are financed over the short term with revolving credit. In the past, these financing strategies were often criticised as too expensive and not sufficiently growth oriented. Now, however, they have proven to be comparatively more resistant to crisis, as firms employing these strategies have hardly suffered any direct effects from the banking crisis. And even more important: Many SMEs provision for the possibility of recession, amassing a financial cushion in good years for later periods when demand is weak. In good years, only a portion of profits are paid out in dividends or invested in mergers and other high-risk ventures. Reserves are created with the remaining profits. These reserves are then used in hard times for a strategic purpose – for example, to invest in new products and technologies that are released when the economy begins to recover.

Compared to large companies, do SMEs therefore place a greater emphasis on traditional business values than profit maximisation?

One shouldn't describe it in such black and white terms. It is true, however, that in a strong economy SMEs with a long term focus don't pursue every opportunity for growth that crosses their path. They tend to build capacities more slowly. For this reason, they might not grow as fast as large companies at the peak of a booming economy, yet in a recession they have fewer overcapacities and a more streamlined cost structure. It's therefore easier for them to weather a recession. They don't have to make as many cutbacks as the large companies that considerably expanded their capacities or engaged in risky takeovers as the economy was still growing.

*Dr. Christian Rammer, rammer@zew.de
Kathrin Böhmer, boehmer@zew.de*



Photography: ZEW

Dr. Christian Rammer, born in 1966, studied regional sciences at the University of Vienna and Vienna University of Technology. After receiving his doctorate in 1997 he joined the Austrian Research Center. He has been with ZEW since 2000, and currently serves as the deputy head of the Industrial Economics and International Management research department. His core areas of research are the economics of innovation as well as knowledge transfer between the worlds of business and academia. Rammer directs ZEW's annual innovation survey (the Mannheim Innovation Panel) and also writes ZEW's contributions

on the topics of innovation and company start-ups for the German government's annual report on research and innovation titled "Expertenkommission Forschung und Innovation" an advisory board to the German Federal Government. Alongside his involvement in various scientific working groups, Rammer advises the European Commission on issues related to innovation policy.

ZEW CONFERENCE

Forum for Young Labour Economists

The title of this year's ZEW Summer Workshop for young labour economists was "New Perspectives in Labour Economics". Twenty-five superb young economists from the United States, Asia, Australia and Europe travelled to Mannheim in July of 2009 in order to discuss their work with experienced researchers.

In a series of lectures at the Summer Workshop, three internationally renowned professors provided insight into new developments in the field of empirical labour market research. Deborah Cobb-Clark of Australian National University spoke about gender differences in the labour market. She placed a central emphasis on the economic consequences of sexual harassment in the workplace and the causes of wage discrepancies between men and women.

Markus Frölich of the University of Mannheim presented new econometric techniques for the evaluation of labour market policies. Dan Hamermesh of the University of Texas discussed possibilities for economic research based on time use data. He elucidated the advantages and disadvantages of this special type of data as well as the innovative questions that can be studied with it.

Broad Microeconomic Approach

The invited young researchers, who were selected from a pool of nearly 100 applicants, also had a chance to showcase their own research in presentations, poster sessions and group discussions. The spectrum of work presented extended from classical labour market topics, such as the analysis of unemployment or older employees in the workforce, to studies concerning the life satisfaction of the unemployed or the effects of the September 11 terrorist attacks on discrimination against immigrants in Australia. The broad spectrum of data used by the attending economists made for particularly enriching research. Work was presented, for example, on labour market problems in such places as the Ukraine,

South Africa and Togo. A unifying element in much of the research was a microeconomic approach, as is characteristic of ZEW.

Career Advice

The ZEW Summer Workshop offers a forum to young economists for intensive academic discussion and exchange, but it also provides practical career advice. In a special lecture, Dan Hamermesh explained how to improve one's chances for getting published in a renowned economic journal. Using many practical examples, he shed light on the professional, formal and lin-

guistic pitfalls that must be avoided on the road to publication.

Barbara Hey of ZEW's Knowledge Transfer and Qualification Programmes department gave a presentation on effective academic lecture techniques. As a special service, she gave participants individual feedback on their own presentations and poster sessions. Numerous opportunities for the young economists to communicate with one another were also provided. For example, the programme included an outing to the city of Heidelberg as well as a barbecue with the staff of ZEW's labour market research department. The ZEW Summer Workshop thus offered the attending young economists an outstanding opportunity to establish international ties with other researchers.

Susanne Steffes, steffes@zew.de

Two Young Researchers Share the Heinz König Young Scholar Award

At the end of the 2009 ZEW Summer Workshop, the Heinz König Young Scholar Award was granted for the sixth time for the best research work. The prize, which was sponsored this year by the company "ProMinent Dosiertechnik GmbH", was shared for the first time by two researchers: Christina Felfe of the University of St.

Gallen and Alexander M. Danzer of the University of London. The paper that was presented by Christina Felfe investigated the employment circumstances that best facilitate the rapid return of women to the workplace following maternal leave. She used parental-leave regulations in Germany to demonstrate that the more attractive a workplace is, the earlier women return to it. Alexander M.

Danzer studied how employees can protect themselves from an unexpected and temporary loss of income.

The Heinz König Young Scholar Award is granted on an annual basis in memory of Professor Heinz König, the founding director of ZEW. The award winners receive a 5,000 euro prize and are also offered a research stay of several months at ZEW.



From the left: Dr. Holger Bonin (ZEW), Christina Felfe, Alexander M. Danzer, Prof. Dr. Andreas Dulger (ProMinent)

Photography: ZEW

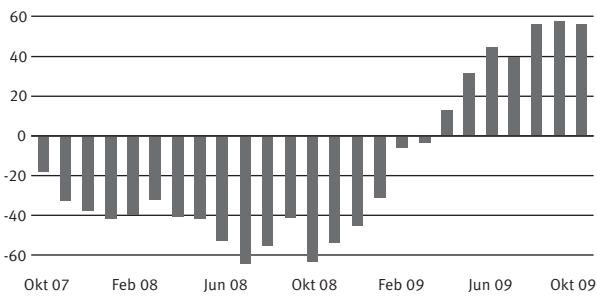
ZEW FINANCIAL MARKET DATA

ZEW Financial Market Surveys October 2009

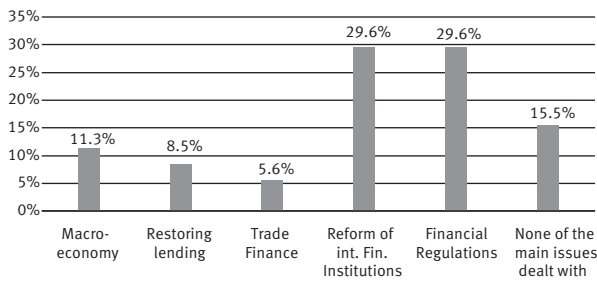
The ZEW conducts three monthly surveys questioning financial market experts for their expectations within six months time for essential financial market data in several European countries and the Eurozone. The questions regard the current business situation, the business outlook, interest rates, stock markets, exchange rates, and inflation. Additionally, a "special question" on an interesting economic topic is asked. Up to 350 financial market experts are questioned in the Financial Market Survey for Germany. About 70 analysts participate

in the Financial Market Survey for Switzerland that is conducted in cooperation with the Swiss bank Credit Suisse. About 80 analysts contribute to the Financial Market Test for the Central and Eastern European Region (CEE) and Austria, carried out in cooperation with Erste Group Bank der Österreichischen Sparkassen. The CEE Region consists of Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Slovenia. The survey collects economic data for each of these countries, but also looks at the CEE Region as a whole.

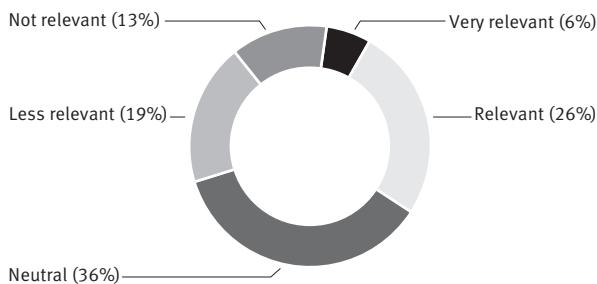
The complete results of the surveys are published every month in Financial Market Reports. The "ZEW Finanzmarkt-report" (www.zew.de/FMR) contains the survey's outcome for Germany. The survey results for Switzerland are published in the Financial Market Report Switzerland (www.zew.de/FMR_CH). The survey results for the CEE Region and Austria are published in the Financial Market Report CEE (www.zew.de/FMR_CEE). Below, some selected outcomes of the October 2009 surveys are featured briefly.



Balance of positive and negative assessment of the expected economic development in six months' time. Source: ZEW



On which of the following main issues did the G20 summit achieve significant results? Source: ZEW



To what extent do you regard the results of the G20 summit as being relevant for the CEE region? Source: ZEW

Germany: Economic Expectations

The ZEW Indicator of Economic Sentiment for Germany remains almost unchanged in October 2009. It slightly declines by 1.7 points 56.0 points after 57.7 points in the previous month. This is still above the indicator's historical average of 26.7 points. The current assessment of the financial market experts has likely been influenced by various facts. Once again the increase in incoming orders should have had a positive impact. The recent decline of exports, however, should have weakened economic expectations.

Sandra Schmidt, s.schmidt@zew.de

Switzerland: Results of the G20 Meeting

The financial market experts were asked to convey their opinion about the results achieved in the designated fields of economic-policy dealt with at the G20 summit that took place on September 24 to 25 in Pittsburgh. Responses noticeably revealed that particular interest was directed at targeted reforms of financial institutions as well as financial market regulations. A respective share of 29.6 percent of respondents acknowledged that significant results were realised in these two areas.

Christian David Dick, dick@zew.de

CEE Region: Relevance of the G20 Meeting

The importance of the G20 summit's results for the CEE region were queried. In general, the financial market experts do not agree upon the relevance of the outcomes of the G20 summit for the CEE region. 32 percent of the surveyed analysts consider the summit as being very relevant or at least relevant and 19 percent of the experts assess it as being irrelevant for the CEE region. However, 13 percent of the respondents consider it as not relevant at all and 36 percent are undecided.

Mariela Borell, borell@zew.de

INSIDE ZEW

■ Heidelberg University and ZEW: Joint Appointment of Assistant Professors

ZEW and Heidelberg University concluded a cooperation agreement in 2009 to guarantee the qualification of young researchers as well as a scientifically demanding research standard. This agreement aims at expanding the network between university research and non-university research institutions by having a joint assistant professorship.

Dr. Melanie Arntz, researcher at the ZEW research department “Labour Markets, Human Resources and Social Policy” is now appointed assistant professor for “labour markets”. This junior professorship is assigned to the Alfred-Weber-Institute at the Faculty of Economics and Social Sciences at Heidelberg University.

■ ZEW Trains Financial Experts from Asia in Macroeconomics



The guests from China and Vietnam with members of ZEW's staff.

Currently, 16 financial experts from China and Vietnam are guests at the Centre for European Economic Research (ZEW) in Mannheim. The group consists of employees of exchequers and central banks. From the middle of September to the end of November 2009, the financial experts from Asia will expand their knowledge in the field of macroeconomics. Cooperating with external scientists and practitioners, the researchers of the ZEW impart further knowledge of financial and fiscal policy, the functioning and stability of the international financial system, as well as development strategies in transition

countries. Over the next three years, more financial experts from Asia will receive advanced training at the ZEW. The courses at the ZEW are part of the training programme “Strengthening Macroeconomic Policies” which is organised by InWEnt, a global corporation for personnel development, advanced training and dialogue, on behalf of the German Federal Ministry for Economic Development and Cooperation. The ZEW service department Knowledge Transfer and Qualification Programmes is responsible for the concept and implementation of the seminars at the ZEW.

ZEW DISCUSSION PAPERS

No 09-066, Christian Köhler, Wolfgang Sofka, Christoph Grimpe: Selectivity in Search Strategies for Innovation – From Incremental to Radical, From Manufacturing to Services.

No 09-065, Stefan Boeters: Optimal Tax Progressivity in Unionised Labour Markets: What are the Driving Forces?

No 09-064, Anja Schmiele: Drivers for International Innovation Activities in Developed and Emerging Countries.

No 09-063, Alisher Aldashev, Bernd Fitzenberger: Der Zugang von Arbeitnehmern in den Bezug von Arbeitslosengeld II. (In German)

No 09-062, Markus Clauss, Stefanie Schubert: The ZEW Combined Microsimulation-CGE Model: Innovative Tool for Applied Policy Analysis.

No 09-061, Wolfgang Sofka, Christoph Grimpe: Searching for Innovation in Market and Transition Economies: Evidence Across Europe.

No 09-060, Joana Mendonça, Christoph Grimpe: Skill Composition and Regional Entrepreneurship: A Comparative Study Between Germany and Portugal.

No 09-058, Martin Achtnicht: German Car Buyers' Willingness to Pay to Reduce CO₂ Emissions.

No 09-057, Astrid Dannenberg, Tim Menzel, Daniel Osberghaus, Bodo Sturm: The Economics of Adaptation to Climate Change – The Case of Germany.

No 09-056, Klaus Rennings, Christian Rammer: Increasing Energy and Resource Efficiency Through Innovation – An Explorative Analysis Using Innovation Survey Data.

No 09-055, Andrea Schertler, Tereza Tykova: Venture Capital and Internationalization.

No 09-054, Felix Schindler, Nico Rottke, Roland Fuess: Testing the Predictability and Efficiency of Securitized Real Estate Markets.