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It was on January 15 that the Nokia concern announced its intention to immediately close down a production facility that had been located in Bochum since the end of the 1980s. This news prompted outrage among the general public and in the political sphere. This was due above all to the fact that in the period from 1995 to 2007 the company enjoyed considerable monetary support from the federal government and the state of North Rhine-Westphalia, funded by regional business development and research promotion programs. The disappointment among those affected is more than understandable since the announcement of the planned closure was entirely unanticipated in view of recent rises in sales and the many extra shifts that had been worked to keep up with demand.

Though the uproar may well be understandable, one can hardly expect an outpouring of gratitude from recipients of subsidy payments. Every subsidy is and continues to be associated with risks. This is true both for direct promotion of companies and for indirect promotion through infrastructure improvement programs. Those players who can be attracted to the region with advantages that can be measured in monetary terms – such as interest-free loans or exemption from business taxation – are obviously receptive to such temptations. If in the past they have been receptive to financial incentives – and perhaps more than once, then why shouldn’t they be receptive to the temptations set out by others? Those who flirt with someone who is “easily enticed” should be aware of what they’re getting into.

And in spite of this, no state politician and no regional business promotion agency could ever forego granting subsidies as long as other potential sites both in Germany and abroad are doing exactly this. A sober estimate of the chances and risks is just as necessary as setting terms and conditions to limit the risks. One conceivable method is to impose a sufficiently long commitment period, extending beyond the normal investment cycle, coupled with a degressive schedule for the repayment of subsidies in the event of premature termination of the subsidy agreement. A further necessity is timely monitoring of money flows and adherence to pledges made in conjunction with the subsidy.

There are many indications that Nokia failed to satisfy at least a part of these requirements. But the tougher the terms, the less a specific amount of subsidy is worth. Since the subsidy is intended to compensate for (perceived) disadvantages of the operating site, it might or might not suffice if the terms are made more stringent.

The choices of locations for new business facilities also reflect the willingness of those who bear political responsibility to engage in competition and show the various regions what their competitive capabilities really are. Subsidies designed to encourage firms to relocate in a given area, on the other hand, disturb the market’s geographic coordination mechanism. To be applauded are investments that are of long-term benefit to the education and re-
search infrastructures as opposed to market interventions that only target short-term success in attracting business investment.

Christoph M. Schmidt

Research news

Innovation Report 2007: Sunshine and shadows in North Rhine-Westphalia

When compared with the states of Baden-Württemberg and Bavaria, North Rhine-Westphalia fails to achieve the highest number of patent registrations per million residents in any of the “forward-looking disciplines”: biotechnology, microtechnology, nanotechnology and new materials – and production, medical, energy and environment technologies. The number of patent applications in biotechnology, nanotechnology and energy technology has, however, grown at an above-average rate. These and other findings are contained in the Innovation Report 2007, prepared by a consortium of agencies under the leadership of RWI Essen. This study was commissioned by the Ministry for Innovation, Science, Research and Technology of the State of North Rhine-Westphalia.

This survey of innovative effort in North Rhine-Westphalia shows a multi-faceted structure of strengths and weaknesses. Among the highlights is the relatively large number of pupils eligible for admission to institutions of higher education. Deficits are found, in comparison, among the business community’s expenditures for research. Going beyond the general assessment, this year’s innovation report focuses on analyzing activities in North Rhine-Westphalia in selected “forward-looking disciplines”. These are those fields of technology deemed to be making a superior contribution to technological progress.

Of all the German federal states, North Rhine-Westphalia submitted the largest number of applications to the European Patent Office in three of the six “forward-looking disciplines” during the period from 2001 to 2006. Given the size of the state, this is hardly surprising. When set in relationship to the population, however, North Rhine-Westphalia exhibits values that are no better than those for the two reference states of Bavaria and Baden-Württemberg in only a very few of the six “forward-looking disciplines” examined here. In a comparison with Baden-Württemberg and Bavaria, North Rhine-Westphalia fails to achieve the highest number of patent registrations per million residents in any of the “forward-looking disciplines”: biotechnology, microtechnology, nanotechnology and new materials – and production, medical, energy and environment technologies. The number of patent applications in biotechnology, nanotechnology and energy technology has, however, grown at an above-average rate. These and other findings are contained in the Innovation Report 2007, prepared by a consortium of agencies under the leadership of RWI Essen. This study was commissioned by the Ministry for Innovation, Science, Research and Technology of the State of North Rhine-Westphalia.

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North Rhine-Westphalia is somewhat brighter. In the period from 2001 to 2006 the number of patent applications from North Rhine-Westphalia in the field of biotechnology grew – in comparison with the period from 1995 to 2000 – by 53%. By contrast, the number declined by 7% in Bavaria and in Baden-Württemberg even by as much as 26%. The strong rise in North Rhine-Westphalia is to be seen primarily in conjunction with inventive efforts by researchers in the industrial biotechnology segment. In nanotechnology (+37%) and in renewable energy sources (+86%) North Rhine-Westphalia also attains significantly higher growth rates than Baden-Württemberg and Bavaria. By contrast, the growth rates in North Rhine-Westphalia were noticeably lower for new materials, production technology and medical technology.

When evaluating these findings it is, of course, necessary to make sure that the appropriate yardsticks are used. Among those states with larger land areas, Baden-Württemberg and Bavaria have for years

North Rhine-Westphalia achieved high growth rates in patent registrations for certain “forward-looking disciplines”

In regard to the change in patent activities over the course of time, the balance for

Württemberg. North Rhine-Westphalia took the lead only in biotechnology. When compared with Bavaria, North Rhine-Westphalia scores points above all in environment technology. It was determined that there were 18.5 patent registrations per million residents in North Rhine-Westphalia; the corresponding figure was just 12.0 for Bavaria. In the fields of production technology and energy efficiency – a sub-discipline of energy technology – North Rhine-Westphalia ultimately had a 10% higher number of registrations per resident.

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now reported the highest research expenditures and patent registration activities in relationship to gross domestic product and number of residents.

There is no doubt that North Rhine-Westphalia has made remarkable progress in the forward-looking disciplines examined. Further efforts are nonetheless necessary and would make good sense. In light of prevailing technological and market risks it is necessary to ensure that the mix of projects supported is properly balanced in regard to the subjects involved. Promotion activities must also be congruent with the researchers’ fields of excellence.

The Innovation Report 2007 is available (in German) for download at www.rwi-essen.de. Information: engel@rwi-essen.de, lageman@rwi-essen.de, weiler@rwi-essen.de

Biofuels: Risks and opportunities for developing countries

The manufacture of biofuels represents an opportunity for developing countries but it is also fraught with considerable costs and risks. Among these are rising food prices and damage to the environment since, for instance, the crops later processed to make biofuels might have to be more heavily fertilized. Developing countries should thus carefully weigh the opportunities and risks. Only if the parameters are favorable should decisions be made to produce biofuels and to provide monetary incentives to boost domestic demand for these fuels.

It may be advantageous for developing countries to promote the production of biofuels but the associated costs and risks are difficult to assess. This is the conclusion arrived at in a study conducted by RWI Essen. Estimated here were the costs that would be incurred if bioethanol and biodiesel were to be substituted for ten per cent of domestic consumption of gasoline and conventional diesel fuel. India and Tanzania were taken as examples for this study.

Rough estimates reveal that in Tanzania alone the costs for biodiesel would come to between 20 and 130 million US dollars. The estimates for India fluctuate even more widely since it is extremely difficult to appraise the costs for larger production volumes. Producing biofuels is far more expensive than fossil fuels and it follows that governments would have to provide financial support to boost domestic demand. One option here would be to exempt biofuels from motor fuel taxes and thus to make them competitive in price. But in many developing countries – among them Côte d’Ivoire, Rwanda and South Africa, for instance – motor fuel taxes account for up to a quarter of overall tax revenues; forfeiting these receipts would have serious effects on government budgets. That is why tax incentives should be employed carefully and should be valid for only a limited period of time.

The effects on food prices and employment are difficult to assess

In addition to tax losses, increased biofuel production in developing countries could also result in rising food prices if arable land were to become scarce. The effects on local employment are also difficult to
calculate since jobs would be created on the one hand but jobs might well be lost in the petroleum industry and the agricultural sector. Moreover, there would be only limited benefits to the environment. Firstly, a great deal of energy is required – as a rule – to make biofuels. Secondly, the crops to be processed often have to be heavily fertilized and artificially irrigated, depending on the local climate.

### Initial investments should be in research and development

In consideration of the risks involved, developing countries should promote biofuel production only if the prevailing conditions are favorable. Even then, they should first and foremost invest in research and development. Only after the appropriate technical know-how has been acquired should they utilize instruments such as tax incentives to heighten the demand for biofuels. Technical developments could, however, also make it possible for these fuels to be manufactured profitably in developing countries in the near future. The International Energy Agency (IEA) anticipates that the production of biofuels in developing countries will grow strongly in coming years.

The “Ruhr Economic Paper” on the study entitled “Promoting Biofuels: Implications for Developing Countries” is available for download as a PDF file, in English, at www.rwi-essen.de/repe. Information: peters@rwi-essen.de, weiler@rwi-essen.de

### Awarded research contracts

**The Future of Gynecology and Obstetrics in Germany.** Project for the Ulm University Hospital. Contact: Dr. Boris Augurzky. Duration: 8 months.

**Effects of the Introduction of Minimum Wages for Postal Services – A Poll of Companies Involved in Mail Deliveries.** Project for the Federal Ministry of Economics and Technology. Contact: Dr. Jochen Kluve. Duration: 1 month.

**Effects of Corporate Governance Structures on the Performance Capabilities of Water Supply Utilities and on the Health Situation among their Consumers.** Project for the KfW Bank Group. Contact: Dr. Manuel Frondel. Duration: 6 months.

### Dates

**Fourth cohort welcomed to RGS Econ**

The fourth cohort of scholarship winners at the Ruhr Graduate School in Economics (RGS Econ) was welcomed during official ceremonies at the University of Dortmund. The group commenced its three-year academic program on October 1, 2007; RWI Essen provides advisory support during the first year. The joint initiative of the Universities of Bochum, Dortmund and Duisburg-Essen and RWI Essen permits up to eight doctoral candidates per year to work at the highest scientific level.

The fourth cohort comprises four women and four men; they hail from Germany, Russia, China and the Philippines. A total of 160 applicants from all around the world competed for the eight scholarships. These academic grants are underwritten with funding from the participating institutions’
own budgets, from federal and state programs and from generous donations by private patrons. The President of the University of Dortmund, Professor Eberhard Becker, welcomed the new RGS Econ scholars in a brief speech and wished them success in their further academic careers.

Information: rumpf@rwi-essen.de

Online application for RGS Econ scholarships

The application period for a scholarship at the Ruhr Graduate School in Economics (RGS Econ) closes on April 30, 2008. This doctoral program accepts up to eight fledgling scientists each year. These students, enjoying the freedom offered by a full scholarship, can earn their doctorates in economics within three years. Beginning this year, applications can be made through a time- and money-saving Internet portal.

The Ruhr Graduate School in Economics (RGS Econ) is a doctorate program operated jointly by the universities in Bochum, Dortmund and Duisburg-Essen in collaboration with the Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI Essen). The Admissions Committee, made of professors involved in the program, will once again this year choose up to eight outstanding junior scientists for the three-year doctoral program in macroeconomics.

RGS Econ accepts up to eight German and foreign doctoral candidates each year. With scholarship monies of 1,250 euros monthly, they can earn their advanced degree in economics quickly and under ideal conditions.
The hallmarks of this program are theoretical modeling and econometric analysis and an international approach. In addition to the financial support, the students profit above all from work in small teams, intensive advisory support, the structured academic and research program, and access to networks of distinguished international scientists. Applicants should hold a degree (German Diplom, a master’s degree or equivalent) testifying to superior undergraduate achievement in macroeconomics or a related field. Instruction is in English.

April 30, 2008, is the application deadline for the program commencing on October 1. For the first time ever, applicants can make use of an Internet portal where all the required application documents can be submitted quickly and easily. Additional information on the academic and research program and on the application procedures will be found at www.rgs-econ.org.

Information: rumpf@rwi-essen.de

Publikationen

**Ruhr Economic Papers**

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(33) Yiquan Gu and Tobias Wenzel, *A Note on the Excess Entry Theorem in Spatial Models with Elastic Demand*

This paper deals with the “excess entry theorem in models of horizontal product differentiation” after Vickrey (1964) and Salop (1979), wherein the assumption of inelastic demand is relaxed. Using a demand function with constant demand elasticity, the authors demonstrate that the number of firms entering a market decreases as the degree of demand elasticity rises. The excess entry theorem is found to hold true only when demand is sufficiently inelastic. Otherwise there is insufficient access to the market.
(34) Harald Tauchmann, Silja Göhlmann, Till Requate, and Christoph M. Schmidt, Tobacco and Alcohol: Complements or Substitutes?—A Structural Model Approach

The question of whether two habituating substances—namely alcohol and tobacco—are complements or substitutes is of interest when considering the side effects of anti-smoking policies. This paper presents an alternate “instrumental variables approach” that statistically mimics an experimental study and does not rely on prices as explanatory variables. Applying this approach to German survey data, it is found that reduced tobacco consumption results in a moderate reduction in alcohol consumption. This would imply that alcohol and tobacco are complementary. Thus it can be concluded that successful anti-smoking policies will not result in increased consumption of alcohol.

(35) Jochen Kluve, Hilmar Schneider, Arne Uhlendorff, and Zhong Zhao, Identifying the Rebound—Evidence from a German Household Panel

This paper examines the dynamics arising from variations in the length of continuing education programs. Used here were data made available by official agencies in Germany on the subjects of continuing education and in-service training. Here the duration of the program is a continuous variable with values of from 10 to 395 days (i.e. 13 months). This makes it possible to estimate a “dose-response function” (DRF) that correlates every value for the “dosage”—i.e. the duration of the training program, measured down to the day—to the individual’s potential for finding employment. The results show a rising DRF for programs of up to 100 days in duration and a flat curve beyond that. This means that longer educational programs do not appear to evoke any additional employment effect.

(36) Jan Heufer, Revealed Preference and the Number of Commodities

This work comprises two parts. It is first shown that, in a two-dimensional commodity space, every homothetic utility function that is depicted by way of pair-by-pair comparisons of two observations in each case, drawn from a series of consumer decisions, also depicts the entire set of observations. In the second part a unified method of proof is presented to show that the “weak axiom of revealed preference” (WARP) implies the “strong axiom of revealed preference” (SARP) for two dimensions but not in higher dimensions. It is also shown that preference cycles may be of arbitrary length. Even though these results were already known, the proof here generalizes and unifies the existing proofs insofar as it specifies the conditions necessary and sufficient for preference cycles to exist. It is then shown that the necessary condition cannot be fulfilled in a two-dimensional space, whereas sufficient conditions can always be met where there are more than two dimensions.

(37) Ansgar Belke and Walter Orth, Global Excess Liquidity and House Prices—A VAR Analysis for OECD Countries

Some market players and commentators hold to the belief that real estate prices are driven by specific regional and institutional variables and not at all by prevailing monetary conditions. This is not the case, however. This paper investigates the relationship between global excess liquidity and asset prices at a global scale. It shows, in the VAR analysis, that a positive shock to global liquidity leads to enduring increases in the global GDP deflator and in the global real estate price index and that the latter reaction is the more distinct of the two. Subsequent spillovers to consumer prices are found. In contrast, there is no empirical evidence supporting the hypothesis that the MSCI World index, as a mea-
sure of stock prices, reacts in any significant fashion to changes in global liquidity.

(38) Jörg Peters and Sascha Thielmann, Promoting Biofuels: Implications for Developing Countries

This paper discusses the economic justifications for instruments used to promote biofuels and investigates their implications. Calculations for developing countries such as India and Tanzania show that substantial biofuel use triggers significant costs. Yet, if carefully implemented under the appropriate conditions, biofuel programs might present opportunities for certain developing countries (see pp. 5f.).


This paper investigates the way in which unexpected career discontinuities as a consequence of job loss affect parenting decisions. To do this, birth rates among women thrown out of work as a result of company closures were compared with the rates for women unaffected by company shut-downs. The results reveal that job loss depresses average fertility rates by 5 to 10% in both the short and medium terms (3 and 6 years). These effects are explained largely by the response of women in higher-salaried, white-collar positions. Evidence is further presented to show that the reduction in fertility is not due to the drop in income in the wake of unemployment but instead ensues solely from the career interruption that the employees experience.

RWI : Materialien

Download at www.rwi-essen.de/mat


Preliminary figures indicate that the economy in North Rhine-Westphalia grew by 2.6% in 2007 and thus at the same rate as the German economy as a whole. The driving forces behind expansion were capital investments and exports. The outlook for business has, however, become clouded. High world market prices for crude oil and other raw materials have come to be reflected in increasing inflation and that damps the rise in real incomes. At the same time, the appreciation of the euro against the dollar acts to hinder exports. Against this background we are expecting the rate of rise in gross domestic product for North Rhine-Westphalia to weaken in 2008, in real terms, to 1.8%. Thus GDP in North Rhine-Westphalia would nonetheless rise slightly faster than in Germany as a whole (1.7%). This results above all from the fact that this state – due to the regional orientation of its exports – will be affected less than other German states by the weaker business picture in the USA and the depreciation of the dollar. The slowdown in expansion will probably be particularly apparent in the industrial sector. Output in
the services sector will not decelerate quite so severely. The unemployment rate may well decline from the 9.6% level in 2007 to 8.9% in 2008. However, the relatively low starting level at the end of 2007 comes to bear here. The improvement in the unemployment rate is expected to slow over the course of the year.

Intern

New staff members at RWI Essen

Dr. Andrea Weber joined the staff at RWI Essen on January 1, 2008. She studied technical mathematics in Vienna and earned her doctorate at the Vienna University of Technology. She also completed a postgraduate program in macroeconomics at the Institute for Advanced Studies in Vienna. Before moving on to the University of California at Berkeley for several research semesters, she worked at the Institute for Advanced Studies in Vienna, at the Austrian Institute of Economic Research and at the Austrian Postal Savings Bank. Her research interests focus particularly on the fields of labor market theory and microeconometrics. At RWI Essen Andrea Weber heads up the project entitled “Research group analyzing individual job offer behavior in the face of institutional discontinuities”. This work is sponsored by the Leibniz Society within the framework of the “Women in executive positions” research program under the aegis of the 2008 Research and Innovation Pact. Dr. Weber continues in her function as guest lecturer at the Berkeley campus of the University of California.

During the period from February 1 to August 31, 2008, Professor Cornelia Scott is on board at RWI Essen as a visiting scientist. She studied economics at the Heinrich Heine University in Düsseldorf and earned her doctorate in economics at the University of Economics in Kraków, Poland. From 1996 to 2000 she was employed in the auditing department at Wibera Wirtschaftsberatung AG/PriceWaterhouseCoopers (PWC) in Düsseldorf and Zurich, where she was particularly involved in auditing and consulting for public administrations. Since 2002 she has held the Chair of International Management and International Finance at the Anhalt University of Applied Sciences. Professor Scott is also a member of the Executive Committee of the German National Association of Business Administrators and Economists.

During her residence at RWI Essen she is working on a project on the “Vitalization of the Real Estate Portfolios of German Municipalities by way of Real Estate Investment Trusts (REITs) – A Critical Analysis with particular Consideration of Comparable Foreign
Models”. This project has been assigned to the Public Finance Competence Area at RWI Essen.