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Documentation of the
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COMPETITIVENESS AND INNOVATION: THE QUEST FOR BEST

Welcome Address by

DIETER REITER

Lord Mayor, City of Munich

I am pleased to welcome you to the 14th Munich Economic Summit on behalf of the City of Munich. We are proud that Munich regularly serves as the venue for this conference that has become an important forum for exchange between science, the economy and politics. Thanks to the high calibre speakers and participants, it has gained recognition in Germany and abroad. I would like to use this opportunity to thank the organisers of the Munich Economic Summit, the BMW Foundation Herbert Quandt and CESifo.

There is little doubt in the public debate that innovation, research and science are important for economic competitiveness, employment and prosperity. For more than two decades, Munich has been considered one of the top economic locations in Europe – according to all economic and political rankings. As Lord Mayor of this City, the framework that helps the local economy to remain innovative and promote technology is therefore especially important to me.

The Munich economic region is strong in terms of innovation: Siemens and BMW are among the five most active patent applicants of all German companies. But also the Munich-based companies Infineon, Fraunhofer Gesellschaft, OSRAM, the Deutsches Zentrum für Luft- und Raumfahrt, MAN and Knorr Bremse are ranked among the 50 most active companies and institutions by the German Patent Office.

It goes without saying that Munich is internationally known as the city in which the big DAX companies such as BMW, Allianz, Infineon, Linde, Munich RE and Siemens are headquartered. But I strongly believe that the consistent vitality and innovative capacity of the region is also and especially due to the many hidden champions in the SME sector, the successful trades, the active start-up scene and the technically competent supplier industry for the different high-tech sectors.

Munich is attractive for innovative companies because of its excellent colleges and universities and the presence of many renowned research facilities. Connecting the knowledge and research institutes with the local companies through networks is an important goal of our regional business promotion efforts.

In addition to its two internationally recognised universities; the Technische Universität and the Ludwig-Maximilians-Universität, there are another 12 colleges in Munich. What is more, in addition to the Fraunhofer Gesellschaft, the Max Planck Society and the Helmholtz Centre, the Deutsches Zentrum für Luft- und Raumfahrt is also represented in the region.

One of the most important economic key players is BMW Group with its Research and Innovation Center FIZ in Munich-Milbertshofen. The FIZ is the technological heart of BMW Group and, with its 9,200 employees, is the most important driver of innovation. That is why I am especially pleased that BMW Group has clearly demonstrated its commitment to Munich and is currently in the process of firming up its plans to expand the FIZ by another 15,000 jobs by 2050.

Another strong location factor for Munich is the availability of qualified staff: in companies in Munich, the percentage of university degree holders amounts to an outstanding 2.5 percent of all jobholders. That is the top position in Germany. No other major city has such a high percentage of highly qualified employees. And companies in Munich can look into the future with confidence: at present, there are 112,000 students at the universities and colleges in Munich and there are also positive forecasts regarding the immigration of qualified employees to the city.

An active founder and start-up scene also makes a considerable contribution to the innovative strength of a region. Of the newly founded enterprises in Munich, more than average are based on technologically-oriented ideas. The number of young companies that are successful after the first five years of hard work is especially high in Munich. So the formula for success for sus-



tainable innovation in Munich is the following: technology-oriented, competitive entrepreneurship.

Furthermore I would also like to mention the current topic of digitalisation: the digitalisation of the economy is presently the biggest challenge for private corporations and public authorities, but it is not possible without an outstanding broadband infrastructure. The fact that broadband expansion in Germany still is inadequate and unsatisfactory is worth more than a footnote and can be seen as a real threat to Germany's innovative capacity. That is why, in Munich, we have our own strategy to meet the increased demands on fast internet connections: our municipal utility company a service provider Stadtwerke München (SWM) is consistently expanding our optical fibre cable network.

Please allow me to end my speech with the following conclusion: many aspects influence and promote the innovative strength of a region. Many basic conditions are determined at a European or national level. But it is vital that all private and public key players in a region pull together and define common objectives that every party implements in its own field of responsibility: the city offers a modern infrastructure and is also active in schools, the state promotes universities and individual economic clusters and the federal level creates a favourable political framework in terms of the labour market, the tax system and the promotion of innovation. It is easy for the economy to operate in this framework. New challenges can be actively confronted. It is also important to make the advantages of innovation clear to the public so that it is not regarded as a threat.

I wish the conference organisers and all participants a successful and exciting conference and interesting talks and discussions so that the Munich Economic Summit 2015 can make a valuable contribution to answering the question: how can we promote innovation and competitiveness and in the process maintain or even increase prosperity and the quality of life?

Thank you for your attention.

Welcome Address by

MICHAEL SCHAEFER

Ambassador (ret.); Chairman of the Board of Directors,
BMW Foundation Herbert Quandt, Berlin and
Munich

Ladies and Gentlemen,

On behalf of the BMW Foundation Herbert Quandt I welcome you warmly to the 14th Munich Economic Summit in the Bavarian capital! Together with our partner CESifo Group we are thrilled that more than 200 participants from business, science, politics and other sectors of society have accepted our invitation this year. The fact that you represent four continents is a reflection of our intention to transform the Munich Economic Summit from a forum of European exchange into a global platform, to widen the dialogue between business and politics into a trialogue including other sectors of society.

We follow this course because we are convinced: only if governments, business and civil society work together, we will be able to successfully tackle the complex challenges ahead of us. Working in silos will no longer be sufficient. Multi-sector alliances are needed to drive the transition towards sustainable and more equitable national and global development. A sustainable basis of trust between Europe and the other world regions must be built to allow us to arrive at solutions acceptable for all.

This years' gathering takes place during a period of dramatic transition, a time of great instability in almost all parts of the globe. Francis Fukuyama was certainly mistaken when he proclaimed the end of history 25 years ago. On the contrary, what we observe today is a return of nationalism, an increase of failing states, often characterized by fundamental challenges to national and international order.

We live in an unprecedented phase of global uncertainty. Europe is surrounded by more conflicts than

during the Cold War period: Ukraine, the belt of terror extending from Pakistan *via* Iraq and Syria to the battle grounds of Boko Haram in Nigeria, not to forget the so-called Arab spring which has turned into a fall of stability before spring even started. Hundreds of thousands of refugees are driven out of their homelands, many of them trying to reach the seemingly safe shores of Europe, a phenomenon which will challenge our societies for many decades to come.

And what is our answer? The United States - the only remaining global power - is taking a more isolationist course after the paralyzing experience of Afghanistan and Iraq. The Russian Federation is on a backward course towards the geopolitics of the 20th century. The other BRICS, the emerging economies, including China, will need much more time to become active stakeholders of a new global order than many have forecast only a few years ago. And the EU is deeply engaged in internal strives over national debt, the euro crisis and structural reforms, for the time being unable to take on a more responsibility at the global level.

Our multipolar world is in delay, to say the least it will come, but not overnight. And in the meantime we are confronted with a dangerous power vacuum which caters to the interests of all disintegrative forces challenging our societies. This is the background against which we will discuss the topics of our Munich Summit. We need to have these geopolitical trends in mind when we reflect about Europe's ability to keep its competitiveness in the global market.

We have to reflect about Europe's role in the world, its relationship with the United States, and in particular with the new global actors. To analyse and understand their respective interests and trends of development is an essential prerequisite for safeguarding or even increasing Europe's competitive advantages in the market. Only if we Europeans understand the radical changes in the world and draw the right conclusions, will we be in a position to defend our rank as a leading economic power in the 21st century.

The Munich Economic Summit wants to contribute to this necessary global dialogue between major stake-



holders from all sectors of society. Understanding the nexus between competitiveness and innovation requires to analyse the interface between different disciplines and sectors. I am convinced that important innovative processes which create comparative advantages both in technology and in social areas happen exactly at these interfaces. For almost one hundred years, the common understanding of an innovative society was that it needs a vital interplay of government, business and academia. Today, we still agree that these actors do play an important role, but we understand that another actor of equal importance has entered the stage: civil society. Why? What has changed?

For various reasons which range from the spread of education to the emergence of new digital technologies, it is more feasible for almost everybody today to participate in innovation, to shape and design their world. This development can be observed in science where citizen science is a new and rapidly expanding field. By using the power of the internet, science is no longer limited to specialists and academia but increasingly involves volunteers and non-specialists.

Or take a look at the market innovation system where similar trends are obvious. Through ideas of user-based design, open innovation or sharing-economy the understanding of innovation processes in industry has fundamentally changed. Ideas are being realized which are essentially imported from the civil society.

But this is a process in two directions: while the third sector gains by applying innovative management and digital design instruments as well as sustainable and creative business models from the economic world, enterprises support or adopt social innovations that relate to their core business and thus increase their competitiveness. This cross-sectoral, and often times innovative interaction becomes one of the main drivers of change. With changing innovation systems in both science and industry, and civil society entering as the new actor of the innovative society, the role of governments will change and has started to change already.

We will have an opportunity to discuss some of these new trends tomorrow in our third panel 'Economy and Civil Society: How Innovation Drives Change'. We will look at key changes in society, trying to understand the respective roles of economic and social actors as well as government. Before that, in our second panel 'EU and the World: Out-Innovating the Competition', we will look in a more general way for

key factors determining success in a functioning culture of innovation.

But we will start our discussions with a first panel analysing the state of affairs of the European economy: 'EU and Competitiveness: What Has Gone Right, What Has Gone Wrong?' I am looking forward to exciting, open and if necessary controversial discussions not only between our eminent panellists, but also with active participation of many of you. Let me again thank you all for coming. In particular, I would like to cordially thank the French Prime Minister for giving us the honour to be our special guest. *Monsieur le Premier Ministre, merci pour votre presence à Munich aujourd'hui.*

I wish you all two enriching days at the Munich Economic Summit and would now ask our partner, Professor Sinn, to take the floor.

Introduction

HANS-WERNER SINN

Professor of Economics and Public Finance,
University of Munich;
President, Ifo Institute.

Ladies and Gentlemen,

This year we are focussing on competitiveness and innovation, and only indirectly on the European crisis. Do you remember the Lisbon European Council statement of the year 2000? “The Union has today set itself a new strategic goal for the next decade to become the most competitive and dynamic knowledge-based economy in the world by 2010”. What happened? Looking at growth in selected countries and regions up to the present, Chinese growth is off the chart followed by Sub-Saharan Africa and the ASEAN countries, which are all above the world average. At the very bottom are the EU28 and the Eurozone, the laggards of the world. The Lisbon goals have not been reached; aspirations did not match reality (see Figure 1).

There were many projects that were not successful. Do you remember the Google competitor Quarero sup-

ported by Chirac and Schroeder? It failed just like Exalead, Lycos and Theseus. In this case Europe was not successful in competing with the Americans. There were some good examples of policy action, however. Airbus has been very successful, as has the Ariane rocket project; and based on it the new Galileo endeavour, which will provide us with our own GPS system as of next year. These are common European projects that have succeeded.

Europe, unfortunately, is not developing evenly, as shown by comparing value-added in manufacturing as a share of GDP in Figure 2. Germany’s share has remained constant over the years at 20 percent, but in other major economies’ manufacturing share has declined, and in Britain the share is now only half of what it is in Germany. In terms of patent applications at the European Patent Office, Germany’s share (37 percent) is as large as that of the next four countries below it combined (France 15 percent, the Netherlands 9.5 percent, Britain 8 percent and Sweden 6 percent) – see Figure 3. The competitiveness and innovation of the manufacturing sector is clearly uneven across Europe.

Some European countries opted to expand the government sector, but is the government able to deliver similar services and productivity as the private sector? Government expenditure is now 44 percent of GDP in

Germany compared with 57 percent in France. Bringing the people who lost their jobs in the private sector into the public sector may help temporarily, but not in the long term (see Figure 4).

Emerging from the crisis has been difficult in manufacturing. German manufacturing output has now returned to its pre-crisis level, but it will take a decade for Germany to exceed its previous output peak. France has suffered an output decline of 17 percent and Italy, after a triple-dip recession, has seen a 25 percent down-



Figure 1

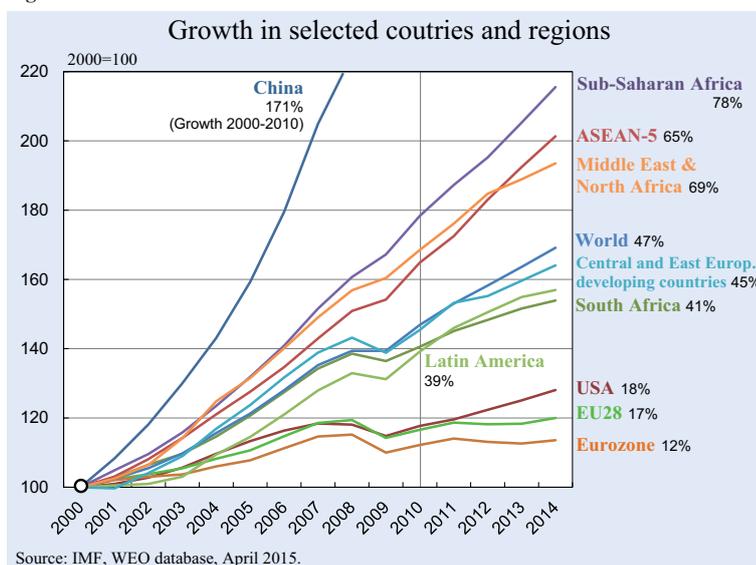


Figure 2

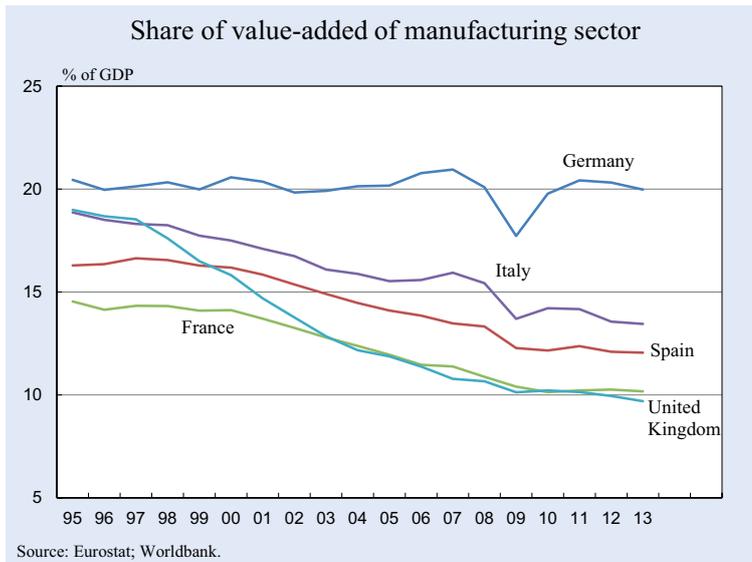


Figure 3

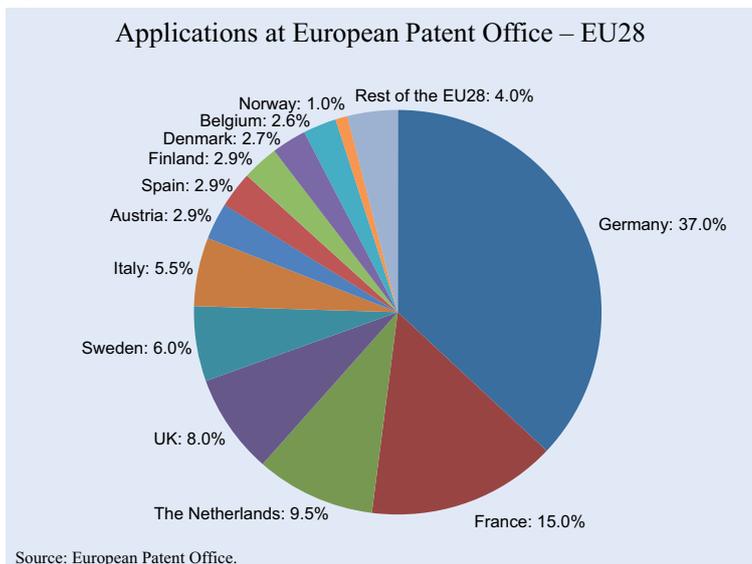
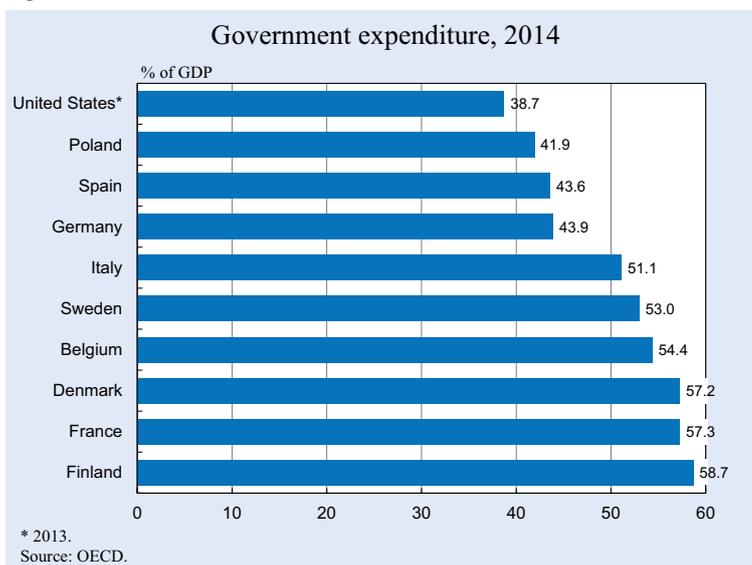


Figure 4



turn, while Spain posted a 30 percent dive, matching the decline in the Great Depression (see Figure 5). Europe has a deep and severe competitiveness problem.

As illustrated in Figure 6, the unemployment rate during Germany's own euro crisis ten years ago rose to 12 percent, but currently stands at 5 percent. France is now close to where Germany was 10 years ago, Italy is even above that level and Spain has a current unemployment rate of 23 percent. During its crisis, Germany introduced the Agenda 2010 reforms, which deprived millions of Germans of their second-tier unemployment compensation benefits, pushing them down to the social-assistance level and reducing their reservation wages, creating a low-wage sector, which did help. A look at the development of unemployment in Germany since 1970 shows an upward trend up to Agenda 2010 and a trend reversal thereafter, signalling an employment miracle (see in Figure 7). After every recession there had been an increase in unemployment of 800,000, but after the Agenda the upturn was 350,000 fewer, meaning that an additional 1.15 million jobs became available through this reform.

Other European countries stand before similarly difficult adjustment phases, and they have resulted in changes in price levels. A comparison of the GDP deflator in Figure 8 shows an increase since 1995. Spain experienced far higher inflation and a loss of competitiveness, and now in the crisis it is dis-inflating by keeping prices constant. This is the right path to follow, but it is a long and painful process. Italy is not yet dis-inflating and France is only

Figure 5

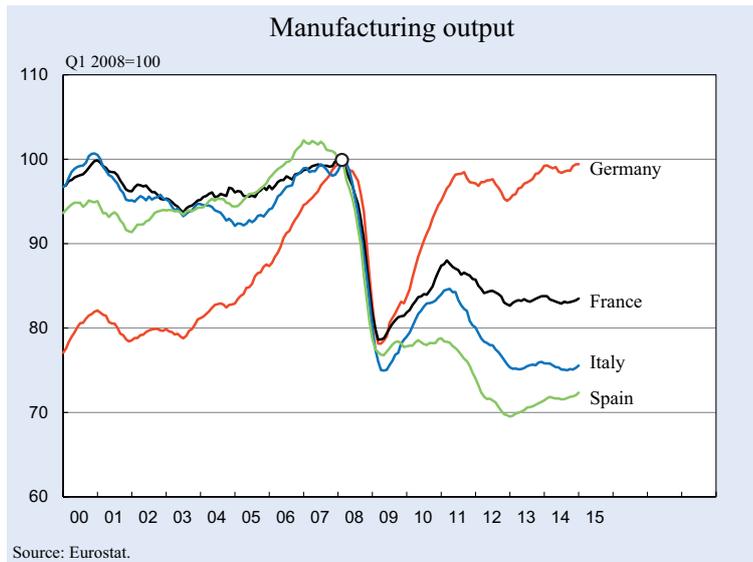


Figure 6

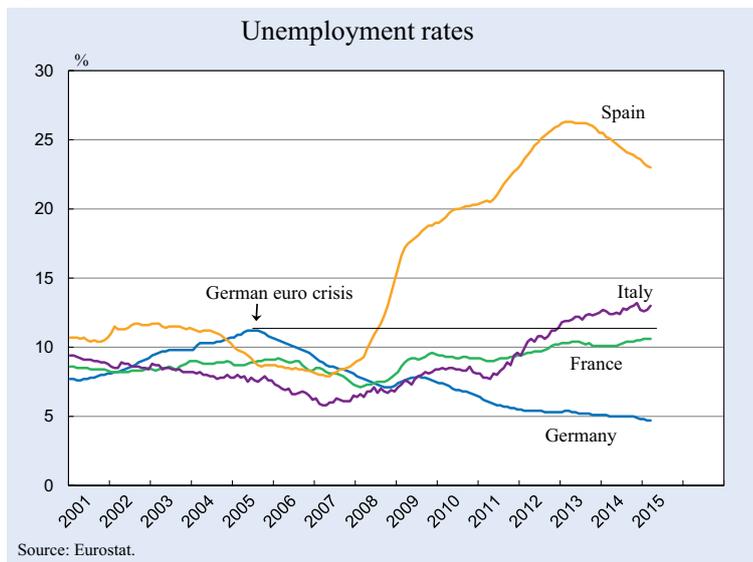
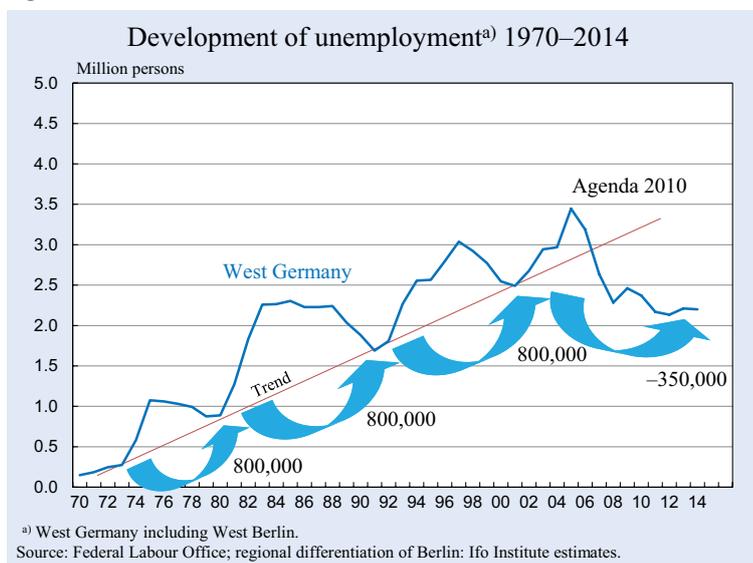


Figure 7



^{a)} West Germany including West Berlin.
Source: Federal Labour Office; regional differentiation of Berlin: Ifo Institute estimates.

doing so to a limited extent. Ireland devalued by 13 percent in real terms against the rest of the Eurozone, giving it 20 percent growth in manufacturing output last year.

Innovation is one of the keys in the longer term. Innovation and growth are strongly correlated, as demonstrated in the calculation by Gregory Clark of world GDP per capita and important inventions from the eighteenth century until the present (see Figure 9). Universal technologies like fossil energy, electricity, etc. made a significant contribution to growth, as Robert J. Gordon showed in a similar study (“Does the ‘New Economy’ Measure Up to the Great Inventions of the Past?”, *Journal of Economic Perspectives* 14, 49–74) – the IT effect itself accounted for 37 percent of aggregate worldwide growth from 1995 to 2000, as demonstrated in Figure 10.

Given that European societies are ageing, robots are taking over the jobs. VW now uses as many robots as it does people in manufacturing the car bodies for its Golf automobile series. In other words, robots are in the process of overtaking people in terms of quantity (see Figure 11).

We are now heading toward the Economy 4.0, where the parts of a product communicate among themselves, all connected through an internet, and a central computer knows where each part is at a given point in time and what each machine is doing, thus automatising the whole production process. People now play only a small role in the synchronising of logistics. This makes production more flexible, more individualised than before, much faster and

Figure 8

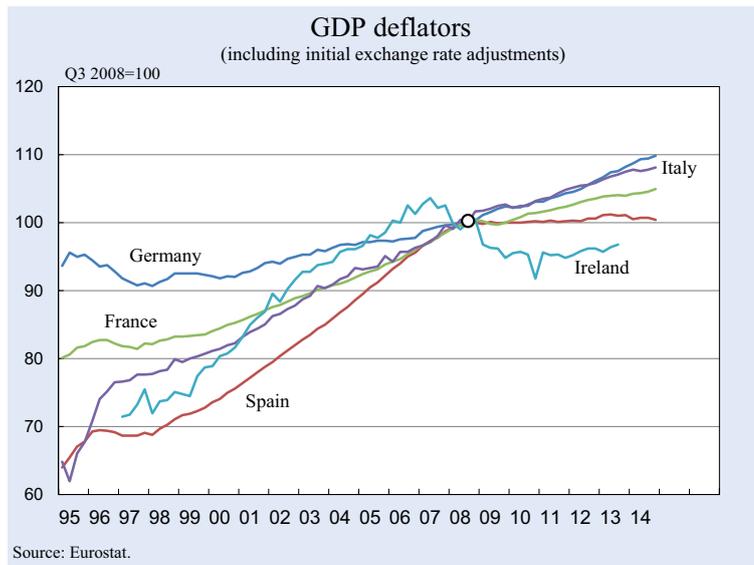


Figure 9

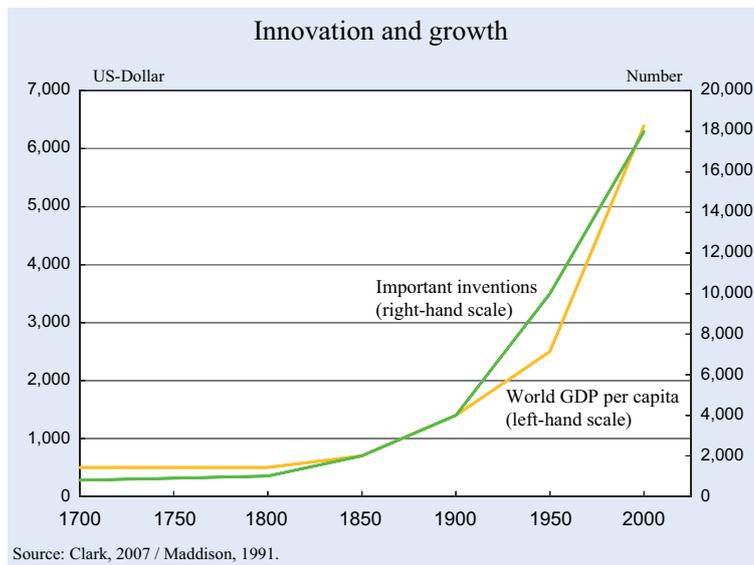
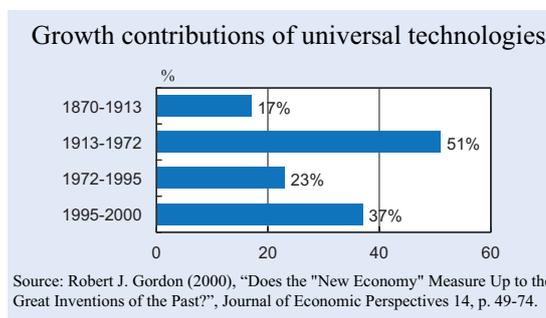


Figure 10



there is a huge gain in productivity. But we need communication standards for this process, which is a task for policy-makers.

Autonomous driving is coming, just in time for my old age, so I won't have to concentrate when driving long

distances. Revolutions are in sight. Uber's market value of 40 billion US dollars is not just based on calling a taxi. Uber aims to take over the entire vehicle market, assuming that individuals will not own their vehicles in the future. If tomorrow's taxis cost little because they are computer-driven, they will be cheaper than cars, making car ownership unnecessary. Uber and the market obviously think that this is a revolution.

It will be a revolution because all sorts of transportation services will be synchronised and more efficient as a result. Drones may even fly goods to your backyard. 3D printing is much more than for art and photography: it means a decentralisation worldwide of the production process. We now have low-cost 3D home printers, but there will be more of them in the future and they will decentralise the production process throughout the world. We will all use the method that MAN employs. The company MAN produces diesel engines for ships and trucks, and 60 percent of the ton mileage of the world is transported using MAN engines. Since many of these machines are too big to be transported, MAN sells the design

for a machine to other companies in the world, who produce the machines under the MAN label. This will be the pattern for 3D printing. Exporters will sell the design, but no longer export physically.

A nation's knowledge capital will be more important to growth than anything else. I highly recommend the book *The Knowledge Capital of Nations: Education and the Economics of Growth* by Eric Hanushek and Ludger Woessmann just released in a CESifo series by MIT Press. They show that the growth rate of an economy depends largely on education in the long run. The correlation between knowledge capital, determined by PISA test scores, and economic growth is very close (see Figure 12). This factor is essential if Europe is to be a knowledge-based society.

Figure 11

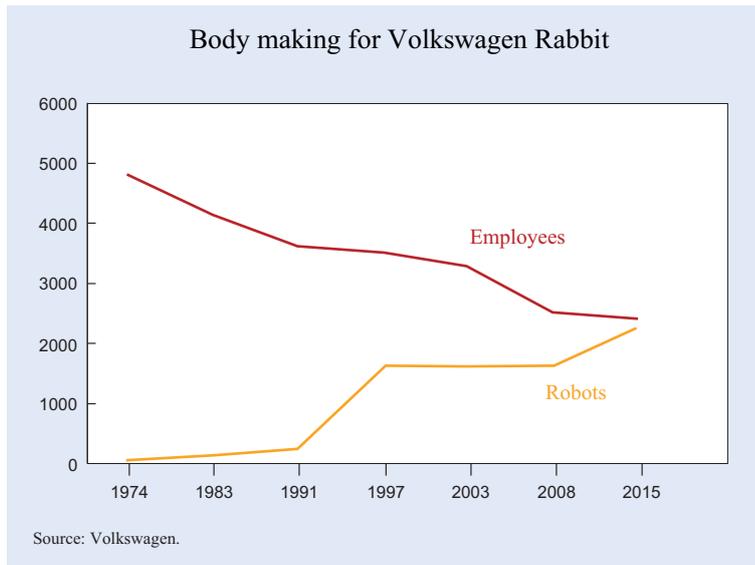


Figure 12

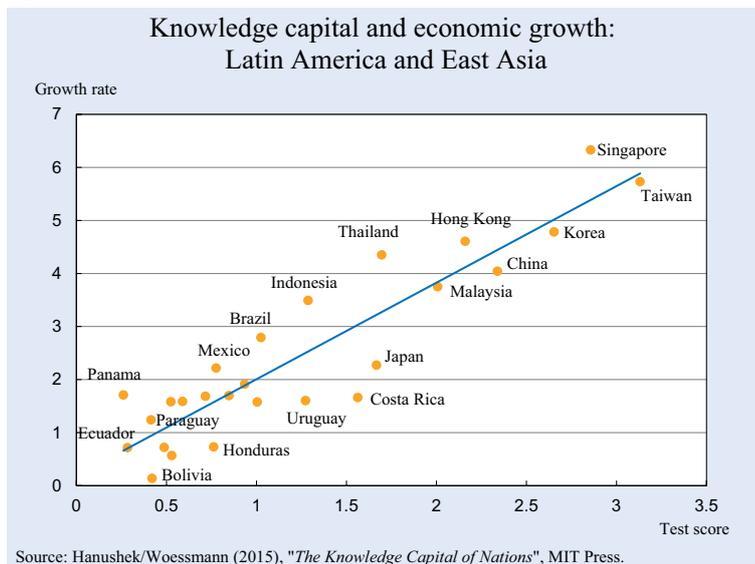
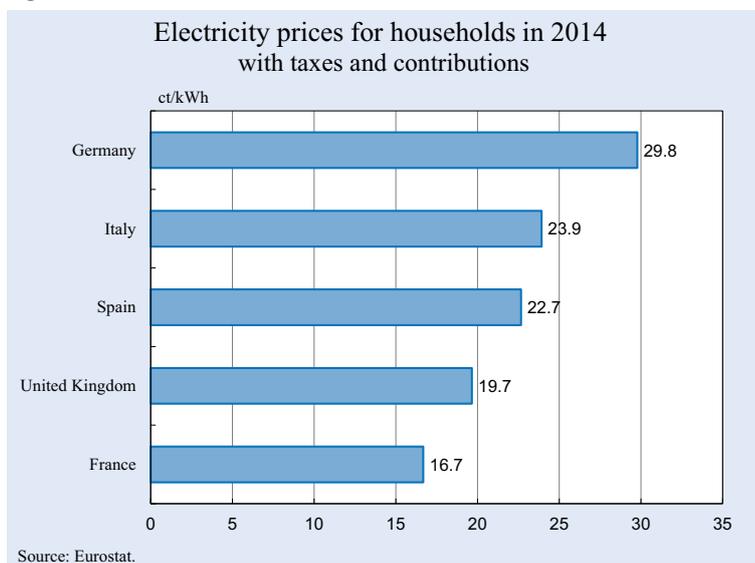


Figure 13



Finally, what we need in Europe is an energy union. Electricity prices for households differ widely in Europe, especially between Germany and France (see Figure 13). The ‘law of one price’, which is the most prominent of all economic laws, does not seem to apply here. If prices differ then there must be something wrong in the economy – namely huge inefficiencies, as can clearly be seen in this particular market. I appeal to German policy-makers to seek an energy union with France, so that Germany can enjoy their low energy prices in the future. This, of course, means that some nuclear electricity will cross the border, but maybe it can be sent *via* Switzerland, so that it seems somewhat less ‘poisonous’.

My conclusion is that mere proclamations like the Lisbon Agenda are useless. But there are good EU initiatives that deserve to be repeated – we have to learn from the past. Some EU countries are now experiencing severe competitiveness problems because they have neglected their manufacturing sector. Others have inflated too much and now have to dis-inflate, which is a somewhat painful process. The ECB, however, is currently helping with its quantitative easing programme by trying to inflate the whole euro area, so dis-inflating is less painful when the average inflation rate is high.

Europe needs to participate in the digital revolution, and forge an Economy 4.0 made in Europe. We also have to invest in the knowledge capital of nations. Finally, Europe urgently needs an energy union under French leadership.



Keynote Address by

VALDIS DOMBROVSKIS

Vice President, Euro and Social Dialogue,
EU Commission, Brussels

Ladies and Gentlemen,

In 2010, I had the pleasure to address this Summit as Prime Minister about Latvia's way through the crisis. Now, five years later, Latvia is for years among the fast growing EU economies and a member of the euro area. The growth outlook for Europe's economy as a whole is gradually improving. The EU economy is expected to grow by 1.8 percent of GDP this year. Unemployment in the EU is expected to fall below 10 percent – for the first time since 2010. But as you all know, these developments are mainly due to short term factors. In the longer term, Europe cannot rely on low energy prices to sustain growth. In the longer term, Europe cannot build the competitiveness on the international cost advantages caused by depreciation of the euro. In the longer term, Europe cannot rely on unorthodox monetary policy tools like quantitative easing.

Europe must address underlying structural problems of the economy. Europe must raise its long-term growth potential. It must develop a sustainable economic model for the decades to come: a model that builds on Europe's strengths – a home market that is the biggest in the world, a strong industrial culture, a highly skilled workforce. A model that is ready to embrace the dramatic changes which global competition, innovation and digitalisation will bring into our economies. A model that recognises big economic divergences among member states – from Germany to Latvia, for instance. A model that allows Europe rebalance and converge further, and makes the Eurozone more robust. A model that maintains growth and well-being over the decades to come in spite of demographic changes.

So, how do we increase Europe's growth potential? We are focussing on three priorities. First, investment.

Stronger domestic investment will raise Europe's productivity and growth potential in the long-term. And it will strengthen domestic demand in the short-term. Negotiations on the ambitious EU Investment Plan are at the finishing line. The plan should mobilise 315 billion euros of both public and private investment by overcoming strong risk aversion by both borrowers and lenders. And it should tackle key barriers to private investment, such as the regulatory burden.

Second, fiscal responsibility. Excessive public deficit and debt is still a source of instability and a drag on growth which Europe cannot afford. It is clear that we must stick to our medium-term objective: a structurally-balanced budget in all EU member states. We also need to reduce high public debt in those member states with a particularly high debt burden. There is no such thing as sustainable growth without sustainable public finances.

Third - and probably most important - we must adjust the structure of Europe's economy. Open existing market regulations and create new opportunities for businesses. Allow labour markets to be sufficiently flexible to create new permanent employment, and wages to reflect productivity – in both directions. And modernise public administration. Structural reforms are probably Europe's key challenge. In a currency union, even more than in countries outside the euro area, the economy must be allowed to adjust to changing circumstances and asymmetric shocks.

Structural reforms are, of course, not easy. That is my own experience as former Prime Minister of Latvia. My government only managed strong adjustments because people were ready to act; because we took steps following close consultation with social partners and other stakeholders; and because we acted quickly. When I spoke here five years ago – only one year into my government – our adjustment programme had already been largely completed. If you delay the reforms, it will take longer for the effects of growth to be seen, and even longer for them to be translated into real money in people's pockets.

Financial stability is precondition for economic growth. If you delay adjustment, you delay financial stability. And without financial stability you cannot return to economic growth. This is also the lesson we can draw from the case of Greece. As adjustment is being delayed, financial stability is being delayed too. Adjustment fatigue sets in and people are simply tired of waiting for years to feel the benefits of reforms. Still, Greece, its economy, and its people need these reforms. Progress has been made in some areas, but more needs to be done to reach an overall agreement, and time is now running out. It is therefore important that Greece puts on the table a comprehensive reform package. We need clarity and detail on which reforms they DO want, not just what they DO NOT want. Structural reforms are not a matter for countries in crisis only. The best time to carry out reforms is actually when the economy is doing well.

Europe needs national parliaments, governments, and social partners to act. But in a European Union and even more so in a currency union reforms are not a matter of national interest only. Last week, the European Commission recommended to each member state a set of reforms to address their economic challenges. Germany and France are the two biggest economies counting for about half of the Eurozone's GDP. They have a special responsibility. By embracing the challenges of competitiveness and innovation, they will advance and Europe will advance.

Germany is one of a few EU member states, which is fully compliant with the Stability and Growth Pact. It has taken welcome steps to invest in public infrastructure, education and research and could go further in this respect. In order to continue growing in spite of demographic trends, Germany should encourage stronger labour market participation of second earners, mini-jobbers and elderly people. It should also further reduce barriers to competition in services.

France is committed to the reforms that are so necessary to strengthen its economy and to get more people back into work. France needs to deliver the necessary fiscal adjustment to ensure the sustainability of its public finances and to bring the budget deficit below 3 percent of GDP by 2017. It is essential to maintain the reform momentum: to continue the labour market reforms, to accelerate the simplification effort in order to boost competitiveness, to improve the efficiency of the tax system, and to reform the wage setting and un-

employment benefits system. I am happy to listen to the Prime Minister Valls in a moment.

Structural reforms are not only needed in the individual EU member states but also at European level. In this respect, allow me to briefly set out what we – the EU and the European Commission – can and will do to promote competitiveness and structural reform. Europe's internal market and the common economic policy of the euro area can work as important drivers for reform, competitiveness and innovation - if they are properly used. Competition in the internal market is a strong lever that forces member states' economies to change. To take just one example, numerous sectors of the economy have been revolutionised by the digital economy, by the possibility to buy services and goods from all member states over the internet. A digital single market can boost the economy by up to 250 billion euros over the next five years. My colleague Günther Oettinger will go in more detail on this tomorrow.

Economic policy coordination within the euro area has also had positive effects. Ireland, Portugal and Spain, for example, were in deep crisis just a couple of years ago. Today, they are among the fastest-growing EU economies. Without European solidarity, without the knowledge that failure to adjust could jeopardise their position in Europe, would their economic turnaround have happened so quickly? I am not sure.

The EU is a driver of reforms. Our main challenge today is the implementation gap. For only about half of our country-specific reform recommendations, at least some progress has been made last year. We must do better than that. The Juncker Commission is using its fresh start to streamline economic policy coordination in the European Semester, to make it more transparent, more consultative, and more focussed. For the first time, we have carried out several months of prior consultation based on our analysis. I have myself travelled to many countries across the EU – from Germany to Italy, from France to Finland – to discuss our economic diagnosis with governments, parliaments and social partners. On that basis, last week's policy recommendations focus on the key socio-economic priorities for each member state, which can – and must – be addressed. I am sure that there is further scope for such practical improvements.

As a second step, we must have an open discussion on how economic and fiscal policy coordination and the Economic and Monetary Union as a whole should de-

velop over the medium term. The Presidents of five EU institutions are working together to report to EU leaders with their ideas in June. We are only at the start of this debate. It involves many economic, legal and political challenges. But we need to have a shared understanding about the direction in which EMU should develop a clear common sense of purpose to communicate to citizens and markets.

The global economy is changing tremendously. I want the EU to use all its levers to make Europe's economy more flexible and adaptable to change. We will push forward the internal market and economic policy coordination in the EMU. And we will continue to constructively challenge member states to move ahead with structural reforms. Recommendations alone will not make the difference; implementation will.

Thank you very much.

Keynote Address by

MANUEL VALLS

Prime Minister, French Republic

Ladies and Gentlemen,

Thank you for the invitation to address you here in the heart of Bavaria. This is my second opportunity as Prime Minister to speak before business leaders in Germany. The first time was in last September before the Federation of German Industries (BDI), at which some of you were present. The theme you have chosen – ‘Competitiveness and Innovation’ – has a very special appeal for me as Prime Minister, since the economic policy we are pursuing in France has precisely these two objectives. Helping companies and providing them with a framework to develop the industries, technology and products of the future means supporting economic growth. And we all know how necessary this growth is for creating create jobs and combating unemployment.

Prejudices are tenacious – perhaps less so in Germany with its worker participation – and when a socialist prime minister speaks to entrepreneurs, it is always an occasion for commentaries. But they are not justified, because my job is to reach out to the companies, the entrepreneurs, to all those responsible for the strength of our economy, creating the prosperity that our countries need so much. Along with others, I want to embody an effective force on the left, a force that is progressive, that sets things in motion, and that promotes talent and rewards effort. This does not mean that we neglect our pursuit of cohesion and solidarity, on the contrary. History teaches us that economic and social progress go hand in hand.

Today, our policies in France are beginning to bear fruit: the economic upturn is here – though still too weak. But growth in the first quarter stood at 0.6 percent, which incidentally is higher than in the Eurozone. We need to do more here. Of course, we also need to

act at the European level. I have listened to your words very carefully, Mr. Dombrovskis. All our initiatives are aimed in the same direction.

Restore competitiveness

France has much to offer companies: a skilled workforce, a dynamic population development, its infrastructure, its financial system. I know exactly what image France often has abroad. I also do not ignore the weaknesses of my country because I take a sober look at the situation. But my reason for speaking to you here today is to counter certain prejudices, such as: France is a blocked country; a country hindered by clinging to outdated ideas; a country that is unable to carry out reforms. We are proving the opposite.

It is true that France has lost competitiveness since the beginning of the millennium. While the sectors of our economy have increasingly opened up and are facing an ever-growing international competition, we have hesitated too long to take the necessary measures, unlike Germany which has not hesitated. But those days are behind us. Today, we are implementing a programme of reforms that faces the challenges of our economy.

With this reform programme we are pursuing the following major objectives:

- First, a reduction in public spending. This is the precondition for sustainable tax relief for companies and private households. For three years, budget savings of 50 billion euros are planned – 21 billion of which alone is for 2015. Never before has France undertaken greater savings. We will adhere to this objective, and as a result our deficit will fall below the 3-percent mark by 2017.
- Second, the reduction of fees and taxes, which have weighed too heavily on the companies. On this point, everyone agreed but no decisions were taken. We are tackling this problem with great determination. Labour costs will be reduced by 25 billion euros in 2014 and 2015, fees and taxes by 15 billion



euros by 2017. Again, unprecedented efforts that will give companies breathing space.

- Third, structural reforms to promote economic activity and reduce obstacles. We have introduced a variety of simplifications, especially the simplification of numerous, often complex administrative procedures. We are reforming the goods and services markets by facilitating more competition in many areas – from retailing, taxi services, notary publics up to the energy sector.
- Finally, we are making the labour market more flexible and are introducing a *flexicurity à la française*: more flexibility for companies in times of crisis and more security for workers, in the area of training, for example.

We are taking action, and results are already evident:

- Labour costs have been held constant: since the end of 2012, they have risen by only 0.8 percent, compared to 2.4 percent in the euro area.
- Companies' profit margins have been increasing sharply since the first half of 2015.
- Confidence is returning. Foreign direct investment soared by 8 percent in 2014, after having been stagnant for three years.

Of course there is still a long way ahead of us, as our President recently emphasised. The recommendations published by the European Commission last week are an encouragement for us to continue. Pursing this path and keeping to a policy of budgetary consolidation without endangering the growth that has returned. I have often had the opportunity to talk to Chancellor Merkel about this.

Promote innovation

Restoring the competitiveness of our businesses also means acting in the long term and focussing on innovation, public and private research and development and on education. France, like most OECD countries, has been affected by de-industrialization, and to some extent even more severely. We had to take action, because being a great economic power means above all being a great industrial nation. Germany, and Bavaria in particular, provided an inspiring example. They have managed to maintain a strong economy and to produce recognised products. I do not need to sing the praise of *Deutsche Qualität* – this sets off German products from the others.

In industrial policy, as I have repeatedly stated, I believe in the visible hand of the state! It is the state's job, together with the economic agents, to project a vision and to help shape industry structures – in short, to provide a favourable environment. This is the goal of our competence clusters, which bring together in one place small and large companies, research laboratories, higher education institutions to jointly utilise existing talent and to stimulate imitation effects elsewhere. In this connection, we also plan to equip the entire country with high-speed rail networks by 2022.

Encouraging innovation also means providing the necessary funding. It is the task of the Public Investment Bank (BPI) to assist small and medium enterprises in the bolder projects that normal banks often do not fund. Encouraging innovation also means ensuring tax credits for research spending – this is regarded world wide as the best tax incentive for R&D. And promoting innovation means using the 47 billion euro future investment programme to support projects for the development of the digital economy, the modernisation of industry, alternative energy and research, as well as education. And finally, we wanted to ensure that new French market leaders emerge that are globally competitive: the TGV of the future, intelligent textiles, green chemistry, e-learning, Big Data, etc. These are the projects of the 'new industrial France' that the state is supporting in order to create pull effects.

The digital economy of course is a powerful driver for innovation. This is also demonstrated by Franco-German endeavours. After our meeting, I will visit an exemplary project: the joint research centre of Siemens and the French IT company ATOS, which has been established here in Munich.

France and Germany in Europe

The aforementioned research centre is further proof – insofar as proof is necessary – of the close ties between our two countries. Our Franco-German partnership – this engine of Europe – must always keep what unites us in mind, our economic ties, but also our political partnership, our cultural and linguistic exchanges. To this end, the *collège reform* that we are initiating will make it possible to increase the number of pupils learning German.

Europe is our common destiny, and I deeply regret that there are those who so often doubt this. Given the

steady growth of populist movements, it is our collective responsibility to ensure that the European project regain all its strength. For Europe is crucial for the influence of our countries on the world outside. In an increasingly globalised world in which we are competing with countries and whole continents, Europe alone has the necessary weight to compete with the United States, China or India.

Europe is also a social challenge

We are faced with competition from emerging economies that are making considerable progress in activities with high value added. And we must avoid at all costs a race to ever lower standards in Europe: low wages, minimum social rights. We would lose everything! Here, in my opinion, Germany must serve as an example. Wage restraint has led to a spectacular increase in exports and substantial trade surpluses. But this cannot be imitated by the entire euro area. Our trading partners would not accept this.

France will thus place all its weight behind an increasing convergence of euro area economies. The report of the four presidents on the deepening of the European Economic and Monetary Union, which will be published next month, will submit corresponding proposals. The strengthening of the convergence of our policies will be accompanied by a deepening of our internal market – this foundation of more than 500 million consumers. We must build on this market in order to develop ourselves optimally elsewhere in the world.

Today, we are not there yet. Just one example: an SME in the IT industry that would like to expand in the European Union is faced with 28 different sets of rules. We need to create a unified IT market so our start-ups have immediate access to a continent-wide market. That is the precondition for the emergence of major European market leaders. And we must also have common rules that ensure free competition and prevent the abuse of market-dominating positions.

Strengthening the convergence of our economies also means combating tax optimisation. This is a question of fairness. Some companies can escape taxation today, while others have to pay the full amount. This is also a matter of economic efficiency. In recent years, progress has been made: the VAT in e-commerce is gradually being levied in the country of the consumer.

Continued reforms are needed, and we especially need to achieve a harmonisation of corporation tax.

The European convergence policy I have outlined must be aimed at promoting investment, which is the motor for growth and employment. This is the aim of the 315 billion euro ‘Juncker’ investment plan. Here too, France and Germany are working together: at the last Franco-German Council of Ministers, we drew up a joint list of priorities. We will need to extend this plan to do justice to the enormous investment needs in the European Union, because investments are the key to innovation. Europe must assume a leading position in fields with high value added. I am thinking of the energy revolution and low-carbon technologies, but also of the digital economy.

This is why we need to expand research. And we have a new tool to do this: the planned EU Patent. It should be implemented as quickly as possible and provide incentives for inventions, which for the first time will be European inventions. The EU must also create stronger links between basic research and applied research. This challenge, of which aim is ‘from the idea to the market’, thus affecting the entire innovation chain, we also must undertake together – EU member states and European institutions.

The world that is changing before our eyes as a result of technological change is full of uncertainties; established positions are being thrown overboard. Our role is not to be paralysed by the *status quo*, which sooner or later will lead to our downfall; the role for all of us is to focus on innovation and audacity. And opportunities like this meeting, where we discuss opportunities, exchange views and take a more distanced perspective, advance our reflections on these issues. Could there be a more appropriate meeting than this one: French and German companies, France and Germany – elected representatives and economic players?

So once again thank you for this invitation to come to Bavaria.



Panel 1

Introduction

RESTORING COMPETITIVENESS: WHAT HAS GONE RIGHT, WHAT HAS GONE WRONG?

DANIEL GROS

Director, Centre for European Policy Studies (CEPS),
Brussels

Introduction

Seven years after the onset of the great financial crisis and about 5 years after this financial crisis mutated into the euro crisis, the countries in the euro area's periphery are still struggling with a challenging combination of high debt, high unemployment and sluggish growth. The difficulties encountered by Greece in jumpstarting growth are the most visible expression of this general malaise. This contribution addresses one key aspect of the problems in the periphery, namely the importance of changes in competitiveness during both the boom and the bust period. This analysis does not tackle important aspects of the crisis, such as the debt overhang. But even this important issue becomes easier to address once growth returns, and a restoration of competitiveness is widely held to be the key.

There is now a widely accepted answer to the question: what caused divergences in competitiveness (prior to 2008)? What has by now become conventional wisdom is a combination of two elements:

1. Wage moderation in Germany
2. Divergences in productivity

The conclusion to be drawn from this conventional wisdom is clear. Adjustment in the periphery requires a combination of Teutonic wage restraint, coupled with

structural reforms to increase productivity. However, the evidence that these two elements were the key driving forces behind differences in competitiveness is surprisingly weak. More specifically, it seems that wage restraint in Germany did not result from economic policy, but was the outcome of a labour market that reacted naturally to high unemployment.

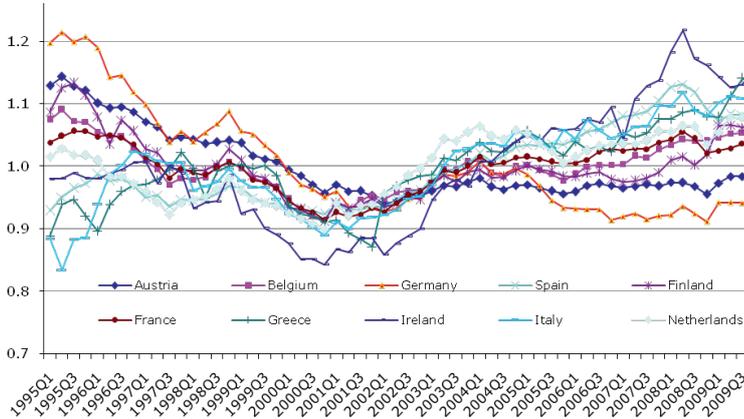
Looking at other countries also shows that the drivers of competitiveness have been more macro than micro in nature. Moreover, the link between productivity and competitiveness is also affected by macroeconomic mechanisms and the correlation between the two was the opposite of what could normally be expected. The final leg in the conventional story line is that an improvement in competitiveness is also not strongly supported by the data.

This article starts with some simple considerations on how to benchmark competitiveness. The second section examines the German labour market and suggests that there was no politically-inspired wage restraint during the early years of monetary union. The third section then asks the apparently simple question of whether an increase in productivity should lead to an improvement in competitiveness (and finds that this has not been the case). The fourth section looks at the macroeconomic drivers of competitiveness, at least those that were preponderant during the boom years, followed by the fifth section, which asks to what extent competitiveness has been a driver of trade performance and again finds some surprising relationships. The final section offers a few concluding remarks.

Benchmarking competitiveness

It is now conventional wisdom that the first decade of the euro was associated with a significant divergence in competitiveness. The evidence adduced is usually some variant of the chart shown in Figure 1 below. However, it is not actually all that easy to tell whether the movements observed represent a divergence away from an equilibrium, or a convergence towards a new equilibrium. This essentially depends on the choice of the base year. It is often implicitly assumed that the

Figure 1
Real harmonised competitiveness indicator measured in terms of unit labour cost (ULC) in total economy deflated



Note: ECB EER-21 group of currencies and euro area 16 country currencies (FR, BE, LU, NL, DE, IT, IE, PT, ES, FI, AT, GR, SI, AU, CA, CN, DK, HK, JP, NO, SG, KR, SE, CH, GB, US, CY, CZ, EE, HU, LV, LT, MT, PL, SK, BG, RO). Index re-scaled by using long-term (1995–2010) average.

Source: ECB Statistical Warehouse; own computation.

start of EMU is the best base, but this does not seem to be the case. Figure 1 shows the evolution of unit labour costs in euro area countries, as is often the case. However, to avoid the bias induced by the choice of a single year as the base, the index (unit labour costs, as provided by the ECB) has been re-scaled dividing it by its average over the period 1995–2010. This approach assumes that unit labour costs have, on average, been in equilibrium over the 15 years up to 2010.

Interestingly, the chart shows the existence of a node in 2003, rather than in 1999/2000. This highlights the fact that 1999/2000, which is usually taken as the base year, might not have been an equilibrium itself. The year 2003 appears to be the year of the smallest cross country differences if one takes the long-term average as the equilibrium concept. Prior to 2003, Germany appears to have been ‘uncompetitive’ and, after 2003, some countries like Ireland and Spain, where bubbles started to emerge, experienced a significant loss in competitiveness. Choosing the base period carefully is important. Most analyses that use 1999/2000 as the base conclude that the divergence of the countries now in difficulties amounts to 25–30 percent loss in terms of unit labour costs relative to Germany. Using 2003 as the base

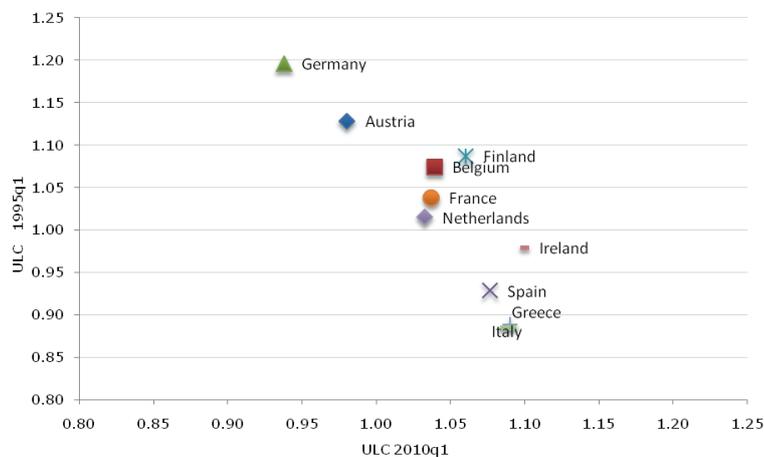
year yields a substantially smaller estimate of the divergence, namely about 15 percent. The purpose of these simple considerations was not to show that 2003 is unambiguously the proper base year, but simply to show how difficult it is to measure divergences in competitiveness in practice.

Moreover, there is some evidence that the divergences in the competitiveness indicators observed until the onset of the euro crisis constitute a mirror image of the divergences that existed during the early 1990s. Figure 2 shows a scatter plot of the competitiveness indicator of euro area member

countries in 1995 and in 2010. There is clearly a strong correlation between the two. Countries that had a high (relative) labour cost indicator (notably Germany and Austria) in 1994 experienced a strong increase in competitiveness (a fall in their relative unit labour costs); while those countries with the best position in 1994 now have the highest costs. This way of looking at the data implies that the case for the popular narrative that the introduction of the euro was to blame for the following problems is not as strong as widely believed. Even after these considerations concerning the base from which to measure divergences in competitiveness, the key question that remains is what determined these movements.

Figure 2

Unit labour cost in 1995 and in 2010

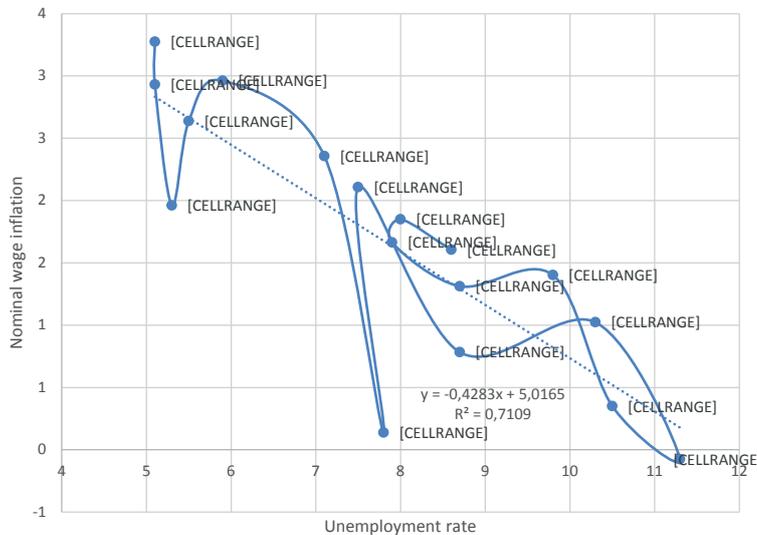


Note: ECB EER-21 group of currencies and euro area 16 country currencies (FR, BE, LU, NL, DE, IT, IE, PT, ES, FI, AT, GR, SI, AU, CA, CN, DK, HK, JP, NO, SG, KR, SE, CH, GB, US, CY, CZ, EE, HU, LV, LT, MT, PL, SK, BG, RO). As in Figure 1, the original ULC index has been re-scaled by using its long-terms (1995–2010) average.

Source: ECB Statistical Warehouse; own computation.

Figure 3

Phillips curve of Germany after EMU



Source: Own calculations based on AMECO data.

Wage moderation in Germany: policy or the market?

A key part of the conventional narrative is that Germany supposedly entered EMU with excessively high wages. The evidence for this is that, at the time (i.e. 1999/2000) Germany had a current account deficit and a higher unemployment rate than the euro area. But during the years that followed Germany's wages (and unit labour costs) declined relative to its partners. It is often argued that this was due to a political choice. But the evidence suggests that, in reality, this was a market-driven phenomenon in the sense that the Phillips curve did work in Germany, as shown in the figure below, which shows the link between (pan) German wage increases and the unemployment rate. There is a rather close relationship with only one outlier (2009), when the fear of a long lasting recession produced agreements without wage increases. But the recession proved to be short-lived (for Germany), and unemployment did not increase, partly because of the specific provisions for temporary short-term work.

The key implication of this relative stability of the Phillips curve in Germany is often overlooked: the stability of the link between unemployment and inflation implies that a policy of wage moderation was not re-

sponsible for low wage growth. The real driver of Germany's competitiveness gains was the high unemployment rate during the early part of the 2000s. A politically-inspired push for competitive wage deflation would have shown up in (nominal) wage increases lower than warranted by the Phillips curve. But this was not the case. During most of the period 2000–2008 actual wage increases were very close to (and sometimes higher or lower) than those predicted by the Phillips curve.

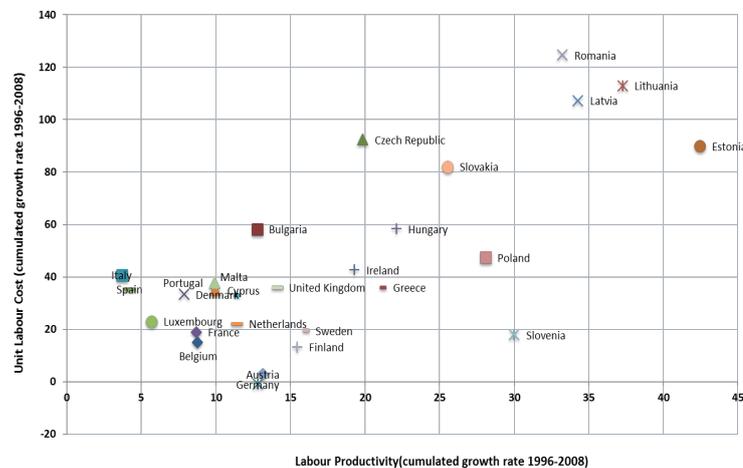
A Phillips curve can only represent some correlation between two variables. But more in depth investigations, which take into account factors like inflation, import and export prices and productivity essentially confirm this finding. This result already suggests a key conclusion: namely that changes in competitiveness might be determined by macroeconomic variables.

Productivity as a driver for competitiveness?

A further key element of the conventional narrative is that the periphery needs to become more productive. Higher productivity growth should lead to higher 'competitiveness'. In other words, higher productivity growth should, in theory, lead naturally to lower relative unit labour costs. But the reality seems to be dif-

Figure 4

Labour productivity (cumulated growth rate 1996–2008)



Source: ECB Statistical Warehouse; own computation.

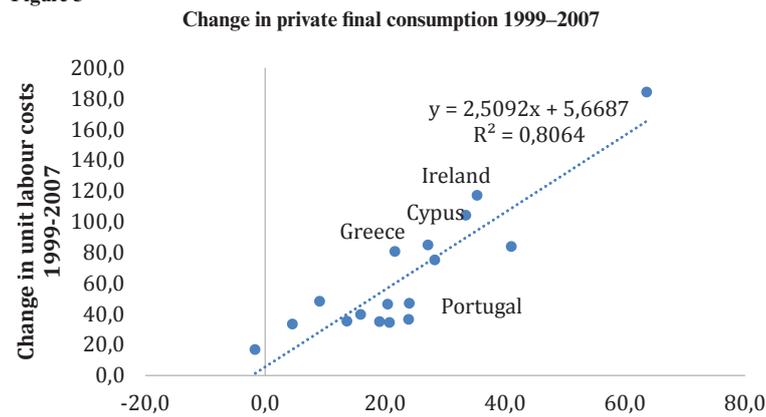
ferent. The data from the boom period until 2008 show higher productivity associated with higher unit labour costs.

Figure 4 also shows that the measured labour productivity was higher in some peripheral countries, including Greece, than in Germany during the boom years. What would be the concrete economic mechanism by which an increase in labour productivity leads to higher unit labour costs? This can obviously only happen if wages increase by more than productivity. But this is possible, indeed likely if the increase in productivity also leads to an increase in demand and thus, *via* a tightening of the labour market, to higher wages.

A concrete example illustrates how this can come about: consider a country that experiences an (exogenous) increase in the rate of growth labour productivity. If this shock is expected to be permanent, the permanent income of workers will increase. This implies that the population will feel richer and want to consume more. Higher consumption would lead to a tighter labour market and thus potentially, *via* a Phillips curve relationship, to wage increases outstripping, at least initially, the gain in productivity. The increase in demand due to the perceived gain in permanent income might also lead to stronger housing demand and higher house prices, which strengthen domestic demand further, as in the case of Ireland and Spain. Moreover, an increase in overall productivity (TFP growth) would make investment in the country more attractive and foster capital inflows. The counterpart to these inflows would be current account deficits. This mechanism seems to have operated particularly effectively in the new member states.

The fact that the correlation between productivity and competitiveness (ULCs) was positive during the boom years (and the opposite of assumptions based on conventional wisdom) does not, of course, imply that an increase in productivity will always lead to a loss of competitiveness. During the boom years (up to 2007 and 2008) workers (and enterprises) were more likely to consume and invest more than they could afford to based on their current income (which is based on current productivity), because financial markets were more likely to provide the financing necessary for con-

Figure 5



Source: ECB Statistical Warehouse; own computation.

sumption and investment expenditure to outstrip growth in current income.

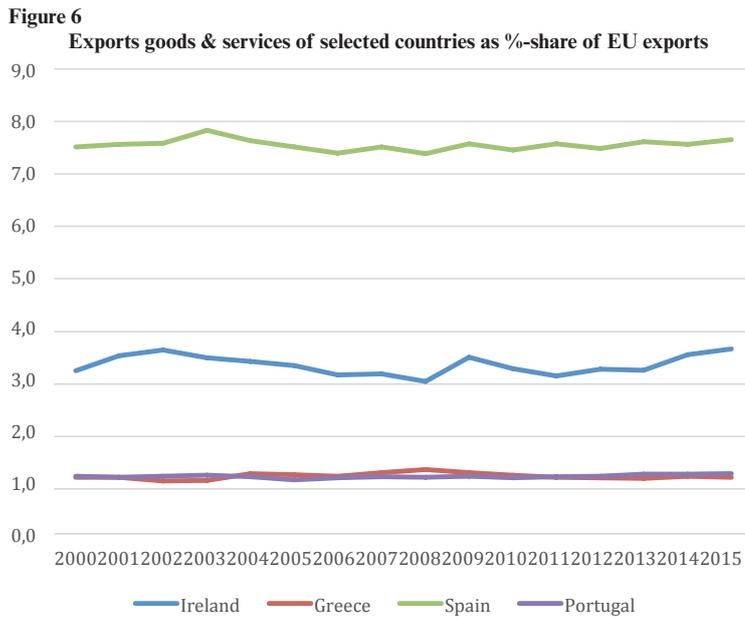
Macroeconomic drivers of competitiveness

The preceding section demonstrated that the correlation between productivity and competitiveness actually has the opposite sign than expected and the section before it showed that a macroeconomic variable like unemployment drove wages in Germany. This seems to be the case more generally. Figure 5 illustrates that there was a strong positive correlation between private consumption growth and loss in competitiveness (ULC) prior to the crisis.

The evidence to date suggests that the divergences in competitiveness up to 2007 were not primarily due to a German policy of wage restraint and low productivity in the periphery. The key driver seems to have been relatively strong domestic demand growth in the periphery (compared to Germany), which led to tight labour markets and thus, high wage and price increases. There is not enough space in this paper to delve deeper into the reasons for the strong increase in domestic demand in the periphery. But it seems that, in some cases, strong domestic demand was actually a result of high productivity.

Competitiveness as a driver of trade performance?

An implicit element in the conventional narrative is that competitiveness is a key driver of trade performance. But the evidence for this proposition is also surprisingly weak. There does, however, seem to be a reasonably strong link between the external adjustment and competitiveness.



Time series evidence for the periphery

It is usually argued that the combination of a domestic boom and high wage growth made the exports of the peripheral countries uncompetitive, and resulting in large current account deficits. However, the raw data does not bear out this view. *A priori* one would expect the peripheral countries to lose market share until about 2008 to 2010, and then gain some market share once wages started to fall after the onset of the euro crisis. However, the data presented in Figure 6 does not support this view. This figure shows that for Greece and Portugal, the shares of national exports (of goods and services) in overall EU exports (which constitute a rough measure of market share) were essentially flat during the boom years. For Spain and Ireland only a very small reduction was seen, which is surprising in view of the major changes in competitiveness over this period. It is also interesting that the euro crisis did not lead to and major changes either.

Cross section evidence

Looking at cross section evidence (instead of the time series presented above) yields an even more surprising picture: higher (unit labour) costs were associated with higher export growth! Why would a gain in competitiveness (i.e. a fall in relative unit labour costs) be associated with lower export growth? The general explanation

for the surprising correlation found in Figure 7 is that any partial relation between a quantity and the price can be either a positive or a negative sign, depending on the dominant source of disturbances during the period of observation. When the demand curve is stable, but the supply curve shifts, there is often a negative slope; and *vice versa* if supply is stable and demand shifts around.

A more detailed explanation of the unexpected relationship between export growth and unit labour costs has to start with the modern theory of international trade, which implies that every

country exports an array of differentiated products whose demand, at least in the short to medium run, is not completely elastic. In the short run one can take the number of varieties or products as given. In the short run exports can thus change only if exporters slide along the demand curve for their products (this is incorporated in most empirical estimates with the so called 'Armington assumption'). However, in the medium to long run, the number of varieties or products a country produces can increase, implying that exports can increase without any need for export prices to go down because the foreign demand curve shifts outwards as the supply in the home country expands. The most impressive example of this phenomenon has turned out to be China whose exports have increased ten-fold over the last decade, although its measured competitiveness has deteriorated as wage increases in China have been far higher than elsewhere.

Figure 7

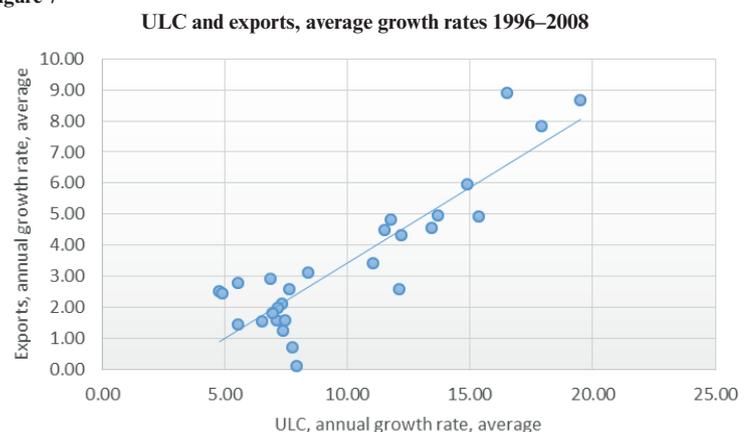
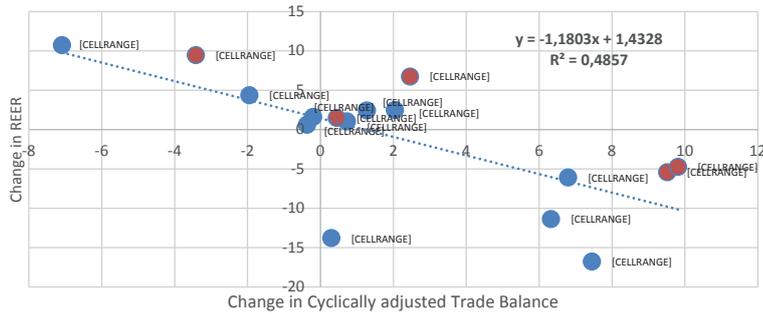


Figure 8
The real exchange rate and cyclically-adjusted trade balance in the Eurozone



Source: European Commission.

Competitiveness and external adjustment

The link between the trade balance and competitiveness was (and remains) a particularly important issue for the euro area since the euro crisis was fundamentally a balance-of-payments crisis. A key question for policymakers during the adjustment process was thus whether an improvement in competitiveness could be relied upon to produce an improvement in the current account or trade balance. This seems to have been the case, although it is often argued that membership in the common currency area makes the adjustment more difficult because a large downward adjustment in domestic prices is much more costly than a simple devaluation of the exchange rate.

Figure 8 shows the relationship between the change in the real effective exchange rate (REER) and the change in the cyclically adjusted trade balance (both over the time period 2008–2013) for the euro area countries. This figure uses the trade balance corrected for the cycle because it is clear that the trade balance will improve if domestic demand and imports fall as a result. But the aim of the exercise is to look for an independent effect of competitiveness on the trade balance. The correlation coefficient is surprisingly high at close to 50 percent. But it is also apparent that Greece constitutes an outlier, as it achieved a significant improvement in its competitiveness, but a relatively small improvement in its cyclically-adjusted trade balance. Without Greece, the correlation between the change in the REER and the cyclically-adjusted trade balance increases to almost 70 percent.

Figure 8 also illustrates that the CEECs, indicated by red dots, are somewhat special in the sense that almost all of these dots lie above the trend line. This implies that their adjustment was larger than one would expect given the link between the trade balance and the real effective exchange rate for euro area countries on

average. Changes in competitiveness have thus played an important role within the euro. Surprisingly, competitiveness seems to have played a less significant role outside the euro. The correlation between changes in competitiveness and the trade balance is much lower among those EU member countries that are not part of the euro area. The case of Britain is particularly im-

portant here given the emphasis of the UK authorities on the benefits of its floating exchange rate. Britain is an outlier as much as Greece because its trade balance has not improved, despite a large gain in competitiveness.

The evidence for the proposition that an improvement in competitiveness fosters the external adjustment is thus much stronger than the evidence of a close link between exports and competitiveness – at least inside the euro area.

Conclusions

Policy discussions often suggest that countries somehow ‘chose’ to become more competitive or uncompetitive. But this does not correspond to reality. Wages and prices are set in markets. Governments have very little control over them; and there is little evidence that public sector wages, the one variable which government can at least partially control, have a significant influence on private sector wages.

Viewing competitiveness as an endogenous ‘symptom’, rather than an autonomous factor has two implications: if excessive domestic demand was the problem during the boom years, a solution should now be on its way. International capital markets have curtailed credit to all peripheral countries. The sharp fiscal retrenchment everywhere in peripheral Europe has contributed further to a sharp deceleration, and in many cases even to an outright fall, in domestic demand in these countries. If labour markets are flexible this should result in lower wages. This is the key condition: flexibility of labour markets on the way down as much as on the way up.

The appropriate policy response to a loss of competitiveness (which is judged to be ‘excessive’) should be to

focus on domestic demand, not on wage developments or specific aspects of the labour market. In the case of Spain, for example, it would have been necessary to restrain the pace of housing construction during the boom years (by auctioning only a limited number of building permits, for example), rather than trying to meddle with the labour market in the midst of a domestic demand boom.

PANEL

Chairman **Paul Wallace**, European Economics Editor for *The Economist*, opened the first panel by describing EU competitiveness as a ‘compelling narrative’. Following the introduction of the euro some EU countries like Germany implemented tough reforms to streamline their economies, while others rapidly started to lose their competitive edge in global markets, noted Mr Wallace. The huge divergence in unit labour costs that resulted was exacerbated by the euro crisis, which merely served to widen the competitiveness gap within Europe. So what can be done to restore the balance and what kind of strategies does the EU need to adopt to get all of its members back on track, asked Mr Wallace in his introduction to the panel?

Martina Dalic, Vice President of the Budgetary and Finance Committee, Croatian Parliament, firstly highlighted the importance of strong public institutions, which cannot be overestimated in Southern Europe. Such institutions act as an interface between the private sector, which is supposed to produce exports and the public sector and are extremely important to the overall effectiveness of economy, explained Ms. Dalic. In her experience, problems with government can constitute a major obstacle to improvements in productivity and a source of weakness in the private sector, as illustrated by the situation in Greece. A country’s institutional set-up also basically determines its ability to implement reforms and economic policy. There is widespread disappointment with the results of recently implemented structural reforms in terms of competitiveness. Ms Dalic cited a recent IMF study that contradicts the IMF’s usual stance by claiming that labour market and structural reforms are not important to competitiveness.

For Ms Dalic, however, the real question is: how do we know whether these reforms were ever implemented? In addition to the quality of institutions, such imple-

mentation depends heavily on political will. She cited the former Latvian prime minister as an excellent example of a case of the political will to reform. In many periphery states such as Greece, however, the political environment was simply hostile to reform. “I cannot overstate the importance of the institutional set-up” concluded Ms. Dalic who speculated that the success of Germany’s Agenda 2010 was probably largely attributable to the well-known efficiency of German institutions in implementing policy.

Following on from Ms. Dalic, **Thomas Rodermann**, CEO of UBS, offered his thoughts from a banking finance perspective. In his view, the lack of structural reforms remains the key issue in Europe. Mr Rodermann identified restricted access to financing for SMEs as a central problem, as the latter are engines of economic growth and crucial to job creation. “I think the combination of economic underperformance and the lack of financing and funding is definitely one of the big issues that we have in the EU”, noted Mr Rodermann who also highlighted the need for more capital market funding in Europe. He also called for closer monitoring of the side-effects of regulatory changes on the pricing of financial services.

Quentin Peel, contributing editor at the Financial Times, asked why relative differences in productivity performance are not a good predictor of competitiveness? Ifo President Hans-Werner Sinn responded by highlighting the fact that productivity is often measured wrongly. The statistics only measure the productivity of those people who have a job, and exclude the zero productivity of the unemployed. If the latter were included in the statistics, the picture would be completely different, noted Mr Sinn. “Behind this data is the fact that countries that could borrow abroad at a low rate of interest, as the Southern European countries did, borrowed to increase their wages either directly through the government sector or indirectly through a construction boom. These were credit-financed wage increases, which then wiped out lots of low-productivity jobs, so the productivity of the remaining jobs rose”, he explained. Mr Gros agreed that productivity is a deceptive measure of competitiveness.

Ingo Friedrich, President of the European Economic Senate in Munich, cited Bavaria as an example that there are intangible factors like individual engagement that influence competitiveness and cannot be measured in figures. Mr Gros responded to this point not-

ing the key role played by the time frame when considering the effectiveness of structural reforms. “Different times require different structural reforms” he said. Boom and bust periods call for different reforms to those required by an economy struggling to improve its poor long-term performance.

Returning to the question of innovation, **Michaela Seidl**, CFO of GE Healthcare, asked how big Europe’s appetite for risk is in the future? According to Mr Rodermann, Europe’s companies often have more ideas than their US counterparts, but today’s environment in Europe is far less conducive to funding new, risky projects, partly due to banking regulations. Rodermann speculated that the US philosophy makes people more agile and open to innovation. Ms Dalic agreed that, despite the existence of EU initiatives to promote SMEs, the public sector can produce an atmosphere which, in many cases, is not conducive to entrepreneurship. Mr Wallace summed up the first panel discussion by noting that structural reforms are important, but may have been overrated as a solution in the case of Greece. Echoing Mr Gros’ comment that different reforms matter at different times, the panel’s chairman highlighted the fundamental importance of deep reforms in areas like education and speculated that the time has come for Europe to act upon the Lisbon Agenda.



Panel 2

Keynote Address by

GÜNTHER H. OETTINGER

Commissioner for Digital Economy and Society,
EU Commission, Brussels

Ladies and Gentlemen,

It is about competitiveness. It is a question of whether our products and services stimulate demand in the global marketplace, find buyers and create jobs, tax revenues, value creation, prosperity and an affordable quality of life. But it is not just about jobs and tax revenue. Why are Chancellor Merkel and Minister Steinmeier so well regarded in the world? Surely it is because of their experience, their diligence and their competence. But I would add that the reputation, the authority of the Chancellor or the Foreign Minister depends crucially on the knowledge that behind them is a strong German and European economy: BMW, Audi, VW, Daimler, Deutsche Bank, SAP, Bayer, BASF and others, as well as strong medium-sized enterprises. That means that since we rightly give low priority to military considerations, we can only have the authority to shape the world of tomorrow if we have a strong, innovative, engineering-based economy, such as our own.

What adjustments need to be made so that competitiveness is maintained where it exists, and is created, or brought back, where it does not exist? This holds true sectorally, but it also applies regionally since competitiveness varies greatly throughout Europe.

Research and the willingness to invest in future developments is of prime interest. The EU has been pursuing a three percent R&D spending target in relation to GDP, but spending remains stable at two percent. Germany has achieved 2.8 percent – although this is not completely convincing either. It is clear that we must invest more in research and development in

Germany, and in Europe in particular. With only two percent of R&D spending, we will not be able to keep up in the race to innovate and produce the creative products and services of tomorrow.

The future demands that we invest more and consume less. Special pension benefits for mothers, retirement at 63, child-care benefits and guaranteed minimum pensions were on the initial agenda of the German grand coalition in its first year. But this agenda must be put aside. The agenda for the future of Europe and for the German federal and state governments must consist of infrastructure investments, innovation as well as challenging research investments. We all agree that quality of life is important. And we also know what we do not want – no Olympic Games in Upper Bavaria, no Stuttgart-Ulm fast train connection, no night flights in Munich or Frankfurt, no new runways, we reject fracking, and we are opposed to genetically-modified food, even although we will never feed the people of world with organic products from the Allgäu. In short, the ‘rejection agenda’ is clear, but the ‘challenge agenda’ is largely absent because Germany is not only well off, but too well off. We are at the peak of our economic power. We have never been stronger, although 13 years ago we were considered the sick man of Europe. The question is how do we stay strong? How do we remain competitive in the European context. This is a matter of a skilled workforce, infrastructure, it has to do with labour and energy costs, but it also has to do with the driving factors of tomorrow’s economy, especially the all-important digital revolution.

We are familiar with revolutions in the economy. The revolution in printing spread education to rural areas, High German asserted itself over the dialects and learning disseminated from the courts to the peasants. This was followed by the advent of the steam engine, which supplemented muscle with mechanical power. Then came electricity, large-scale automation, computers and now we are in the midst of the digital revolution. In the IT realm we have largely lost out, even although we are not performing badly in some areas – SAP in software and Erikson in technological equipment, Nokia, Alcatel and Lucent and a few others.

But on the whole, we have experienced defeat in IT. Only 15 years ago, Bosch produced mobile telephones, but this was halted. Siemens did the same 10 years ago but left the market. Five years ago, Nokia had a fifty-percent world-market share in mobile phones, only to sell the business to Microsoft for a few dollars. Why single out mobile phones? Because today's smart phones evolved from these simple mobile phone devices. We now import iPhones from Apple, from Samsung and others. Apple had a simple strategy: the development of the iPhone is carried out in California, production takes place in Asia and the profits return to Silicon Valley and are used there. This is an ingenious system, but the jobs, apart from low-paid ones in telecom shops, are no longer here in Europe.

By way of comparison, my Christmas list as a boy consisted of Märklin, Steif (with the button in the ear) and steam engines – all made in Germany. My son wants apps, the iPhone 6, internet platforms, flat rate – the value-added of his wish-list is all outside of Europe. And when Mr. Milberg presents a new BMW series, unlike 7 years ago, 60 percent of his innovations are now digital, and those digital innovations increasingly come from creative clusters outside of Europe.

For this reason we need a clear strategy. Despite their political differences, the Americans have a clear strategy in two areas. Firstly, they have domestic energy resources, cheap gas and electricity production, and this is leading to a re-industrialising process. And since the price of electricity in Germany is three times higher than in the United States and the gas price twice as high, the process of deindustrialisation is in full swing in Germany. The second element is digital superiority. The Americans are ahead of us digitally, and when someone is superior others have to be inferior. The question is how do we regain our own digital sovereignty? This is the decisive challenge for global competitiveness.

What we need is a Europeanisation of the digital realm because only then will we have a chance. We have a European Single Market of 510 million people, an exciting market in which everyone wants to participate – GE, GM, Toyota, Samsung, Sony, LG and others. Whoever wishes to engage in this market must abide by our competition laws and respect our culture, our standards and our legal system. In the European Single Market, those who comply with our competition authority and our European data protection law

are welcome. Those who do not will be warned, fined or excluded.

A second aspect is copyright protection. Last autumn I proposed a European digital copyright law. The objective is to protect intellectual property, to set up collecting facilities and to stabilise the market. Currently, with digital service platforms such as Netflix, Amazon and YouTube, the market is not secure and GEMA fees are not standard. To think that copyright law can be regulated nationally is illusory. It is a matter of the survival of journalists, of composers, music publishers, musicians, authors, script writers, film directions – the whole creative economy. In this area we have a fabulous culture. If we fail to implement a European digital copyright law that has to be respected by everyone, we will be depending on the artists of the past in 50 year time. They were not bad, but we also need the next generation that will only enter the market if it offers career opportunities and income and if there is a collection system with copyright protection. We need a solution here so that creative individuals can continue to function in Europe in the years ahead.

Another point is infrastructure. It is wrong to believe that we can build up the digital infrastructure locally and regionally, without coordination with others. Economic regions go beyond borders. We need a pan-European expansion plan for the digital infrastructure. The fourth infrastructure, alongside water, roads and electricity, must be a powerful, pan-European digital infrastructure. Satellites, wireless, broadband, fibre optics – billions in investment will be necessary in the years ahead. But we have kept the telecom economy weak with our consumer-protection policies. Since the stock market price of Deutsche Telekom is relatively low, its ability to invest is limited. We urgently need to channel the investments of the telco and the finance industry into the area of broadband and digital infrastructure. This will only be possible if profits from the investments in a modern infrastructure can be realised more quickly.

Let us consider another example. In Germany we still largely have 3G mobile network coverage. The fourth generation is more widespread in other countries, and Korea will introduce 5G in 2019. We have a European research project supported by the European Commission and by industry to help us in the catching-up process to introduce 5G at the same time. This is much more important than retirement at 63 and other programmes – the German debate is wrongly positioned.

We have concrete forecasts for transport infrastructure, but little idea of how the need for data transport will develop, and the development will surely not be linear. What does data transportation need? By how much will capacity need to be expanded? What kind of infrastructure will be required to meet future data transport needs? It is not necessary that everything be Europeanised, but we need a European digital union and a pan-European strategy – the digital development must go beyond national borders.

Let us move on to my last point. When you invest in digital services, you have enormous basic costs in R&D before the services are ready for the market. For this reason the size of the market is important, which is why a digital market in Europe is needed, instead of 28 individual markets with their own standards and regulations. We require a clear strategy because if we do not catch up in the digital sector, then the existence of our industry is threatened. Data are the raw material of tomorrow, and for this reason a more perfect, maximised data protection must not be allowed to stand in the foreground – data protection relativises data use.

Thank you very much.

Panel 2

Introduction

EU AND THE WORLD: OUT-INNOVATING THE COMPETITION

HERMANN SIMON*

Innovation takes place within the global context, the world I call ‘Globalia’. On a global scale there are few saturated markets. Globalia holds practically unlimited growth potential for innovative companies. This is especially true with regard to the international exchange of goods. Figure 1 shows the development of global per capita exports since 1900 when they were close to zero. It took 80 years to bring global per capita exports to 437 dollars. In the following 20 years they more than doubled and since 2000 they almost tripled again to 2,634 dollars in 2013.

This ‘explosion’ has taken place in spite of a rapidly growing global population. In 1900 the world’s population was 1.6 billion, today we are 7.3 billion. In absolute terms global exports today are about 2,000 times

larger than in 1900. We can assume that global trade will continue to grow faster than national gross domestic products. Each company and each country that is innovative and participates in this accelerating globalization can profit enormously.

How do individual countries fare in Globalia? Figure 2 shows the per capita exports for a selected group of larger countries for the decade of 2004-2013. The differences in export performance are striking.

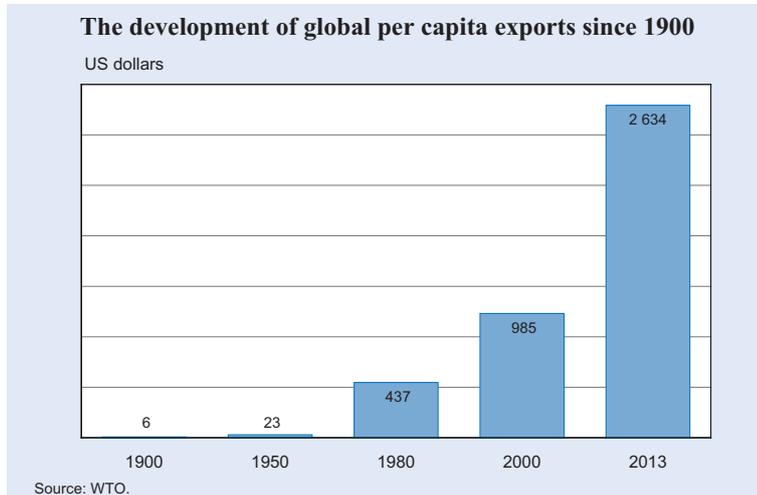
Germany is an extreme outlier with almost twice the per capita exports of the other large countries. There are some obvious questions. What makes certain countries strong in exports and others weak? What role do innovativeness and manufacturing play? And how does company size relate to export performance?

Export performance and company size

It should be noted that countries do not export; only companies export. An excellent export performance by a country proves that country has strong, internationally competitive enterprises. Most people assume that export performance depends on the prevalence of large corporations. Figure 3 reveals the relation between the number of large corporations and exports for selected countries. The horizontal axis shows the number of Fortune Global 500 corporations,¹ while the vertical axis shows exports.



Figure 1



For most countries there is indeed a strong correlation between the number of large firms and exports. But there are two exceptions to this rule, China and Germany. And it is precisely these two outliers that are the leading export nations in absolute terms. What do they have in common and what distinguishes them from the other countries? It is the share of exports contributed by mid-

* Founder and chairman of Simon-Kucher & Partners.

¹ Global 500, *Fortune*, 21 July 2014.

Figure 2

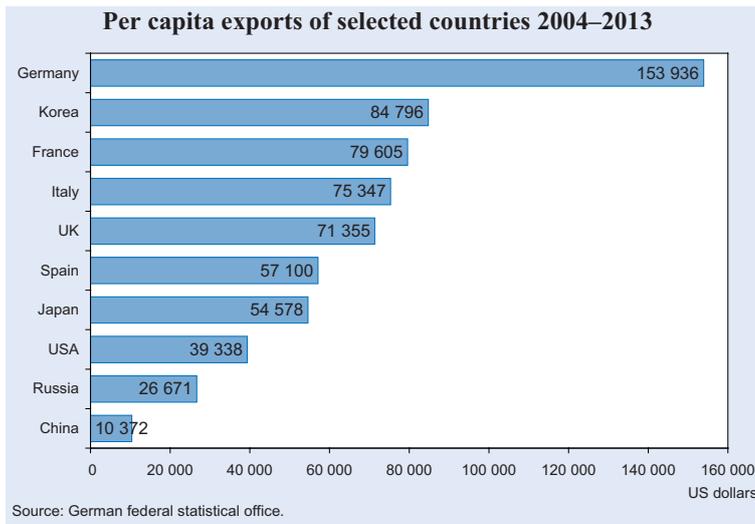


Figure 3

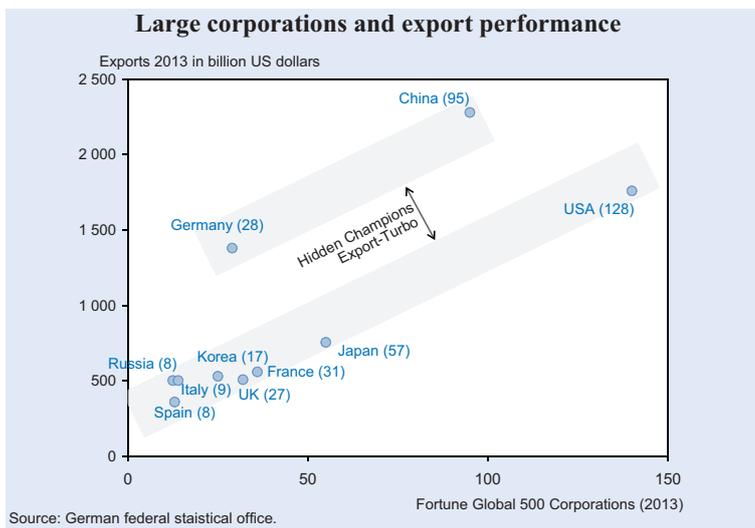
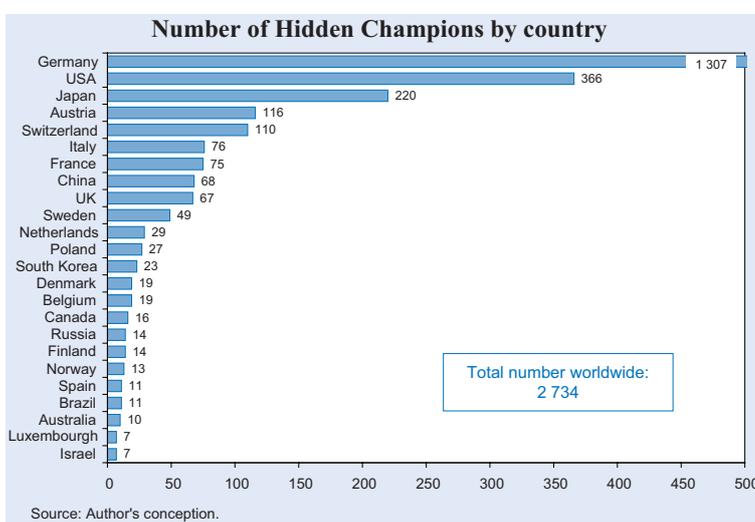


Figure 4



sized firms. 68 percent of Chinese exports come from companies with less than 2,000 employees.² In Germany the Mittelstand contributes about 70 percent to exports.

This suggests that in order to achieve truly exceptional export performance, a country needs both large corporations that are strong in exports, and a broad foundation of small and medium-sized exporters. How many separate markets are there in the world? Nobody knows the exact figure. Let us assume that the number is 10,000. Fortune Global 500 firms only operate in 100 or 200 of these markets. The remaining 98 percent are small or niche markets. Each of these markets offers the chance for a small or medium-sized firm (SME) to become an innovator and a global market leader. And there is a fundamental difference to the world of the past. With the internet, modern telecommunications, air transport and seamless global logistics it is possible for SMEs to do business on a worldwide scale.

Hidden Champions

The late Ted Levitt, at the time marketing professor at the Harvard Business School, asked me back in 1986 (and, as we can see, not much has changed since then), why Germany is so successful in exports. I started researching this phenomenon and came to the conclusion that Germany's ongoing export strength is due to the Hidden Champions. What is a Hidden Champion? It is a company that is one of the top three in its global market, has less than

² See also "Small Fish in a Big Pond", *Economist*, 5 September 2009.

5 billion US dollars in revenue, and is little known in public. Since then I have been collecting names and today my list contains 2,734 Hidden Champions from all over the world. Figure 4 shows the number of Hidden Champions by country.

The explanation of Germany's continuing export success lies in its Hidden Champions. Germany has more of these medium-sized global market leaders than any other country in the world. And these Hidden Champions are highly innovative.

Why Germany has so many Hidden Champions

Outstanding innovativeness

It is true that few German companies are innovation champions in sectors such as information technology, the internet or biotechnology. The leaders in those fields are often from the United States, occasionally from Japan, and sometimes from China. However, a look at the number of patents granted by the European Patent Office (EPO) casts a different light on Germany's innovativeness. Table 1 shows the number of patents granted by the EPO to applicants from selected countries in the ten years from 2003–2012.

Germany enjoys a clear lead. The differences between European countries are huge. Germany has over twice the number of patents per million inhabitants as France, four times as many as Italy, and five times as many as Britain. We also see that the Southern European countries like Spain, Portugal and Greece are underperforming in terms of innovation. Russia is the weakest country in this comparison. Although the topic of innovation covers far more than the number of patents, this statistic is nevertheless a strong indicator of the future in-

Table 1

Patents issued by the European Patent Office in 2003–2012, by country of origin

Country	Number of European patents 2003–2012	European patents per million inhabitants
Germany	130,032	1,590
Japan	108,418	847
Austria	6,366	749
France	44,363	674
USA	134,306	427
Italy	21,636	357
UK	20,893	337
Korea	9,859	197
Spain	3,649	79
Portugal	249	23
Greece	244	23
Russia	462	3

Source: European Patent Office.

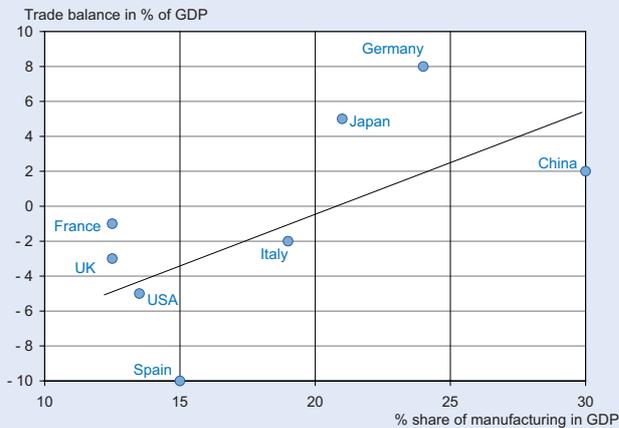
dustrial potential of a country. Innovation is indispensable to excel in Globalia.

Strong manufacturing base

Before the financial crisis took hold, Germany was often criticised for being too dependent on its manufacturing sector and for dragging its heels in becoming a service economy. Germany has indeed traditionally generated a larger share of its GDP with manufacturing than other highly developed countries. The crisis silenced the voices of criticism. Countries such as Britain, France and the United States now regret that they focused too heavily on the service sector and neglected their manufacturing industries, and Japan's problems with exports are primarily attributed to its weakened manufacturing base. A strong manufactur-

Figure 5

Share of GDP accounted for by manufacturing sector and trade balance of selected countries 2007



Source: IWD, Cologne Institute for Economic Research, 11 January 2012.

ing sector is an important pillar of export success. Figure 5 shows that the trade balance depends on how much manufacturing contributes to GDP. The trade balance is the difference between exports and imports.

The correlation coefficient between the GDP share accounted for by manufacturing and the trade balance is 0.79. Germany may be old-fashioned in this regard, but it is successful. And its manufacturing investments are far larger than those of other countries, especially investments by small companies. An international study of medium-sized companies conducted by GE Capital found that German SMEs invest almost twice as much as their counterparts in Britain and France.³

Manufacturing has a fundamentally different impact on export performance and employment than the service sector. This aspect partially explains the export differences between France and the United States on the one hand and Germany on the other. Many French and US corporations are service providers that create most of their value added – and therefore new jobs – not in their home market, but wherever in the world their customers happen to be. Typical cases are McDonald's, Burger King and Starbucks or hotel chains like Hilton, Sheraton and Marriott. What distinguishes them from manufacturing companies is where they employ their workforce, namely in their new stores or hotels in Beijing, Mumbai or Sao Paulo. Manufacturers, on the other hand, can generate jobs at home and sell their products worldwide. Building and retaining a strong manufacturing base is therefore important for both developed and emerging countries.

In the last 20 years, the 1,300 German Hidden Champions created over 1.5 million new jobs. Since 1995, they have been growing at annual rates of 10 percent and are now six times larger than 20 years ago. In terms of revenue, about 220 euro billionaires have emerged from this group. In spite of a much larger global market they increased their global market shares. At the same time, they stimulated a massive wave of innovations. And whether one likes it or not: a large share of innovation still comes from the manufacturing sector.

The strategies of the Hidden Champions

The key question is: what can entrepreneurs, companies, academics and politicians learn from the Hidden

³ See also "Deutsche Unternehmen investieren mehr als andere", *Frankfurter Allgemeine Zeitung*, 2 March 2012.

Champions? The following article presents seven important lessons that can benefit both large and small companies, as well as companies in developed and emerging countries.

Extremely ambitious targets

Hidden Champions set extremely ambitious goals for themselves related to market leadership and growth. The goal of Chemetall is "the worldwide technology and marketing leadership". Chemetall is a global leader in special metals like cesium and lithium. 3B Scientific, a small company and world leader in anatomical teaching aids, states its goal as follows: "we want to become and stay number 1 in the world". But leadership goes further, as is expressed in the following statement by Sick, a global leader in sensor technology: "we lead by anticipating our customers' expectations. Leadership means becoming the benchmark for others. We set the standards on the world market". Rosen Group, the global leader in pipeline inspection systems, states: "we want to create ultimate value for our customers as the world's undisputed leading supplier. It is our objective to be the world's most competitive provider. We go far beyond present market requirements. We envision the market's future needs". Each of these statements embodies utmost innovativeness as a condition sine qua non for delivering highest value-to-customer.

Lesson 1: Success always begins with ambitious goals. The Hidden Champions go for growth and market leadership. This is the fuel that drives them forward.

Focus and depth

"We always had one customer and will only have one customer in the future: the pharmaceutical industry. We only do one thing, but we do it right", says Uhlmann, the world leader in packaging systems for the pharmaceutical industry. Flexi states, "we will do only one thing, but we do it better than anyone else". Flexi makes retractable leashes for dogs and has 70 percent of the global market. But focus goes deeper. Winterhalter is a manufacturer of commercial dishwashing systems. About ten years ago, they analysed the market and found that there are many sub-markets like hospitals, canteens etc. In each of these segments Winterhalter had a market share of 3 to 5 percent. They reformulated their strategy, focusing solely on dishwashers for hotels and restaurants. The

new focus affected everything they do. They even renamed the company Winterhalter Gastronom (for Gastronomy). Since the quality of water has a strong effect on the ultimate results, they deepened their value chain by adding water conditioners. They sell detergents under their own brand name and offer 24/7 service – absolutely essential in this kind of industry. They have special dishwashers for high luster glasses. They recruit sales people with a hotel and restaurant background, who speak the language of their customers. They are clearly number 1 today, witnessed by the fact that McDonalds, Burger King, Hilton etc. use Winterhalter. Only focus leads to outstanding innovation and to world class.

Closely connected to focus is a deep value chain. An example is Wanzl, world leader in shopping carts and airport baggage carts: “we produce all parts ourselves, based on the quality standards we define”. The fact that carts at airports all over the world are made by Wanzl shows that airport operators are willing to pay high prices for superior quality. Even the Japanese in Tokyo Narita or the Koreans in Seoul Incheon have carts from Wanzl. Since it makes everything itself, Wanzl has total quality control, which is the foundation of its outstanding quality.

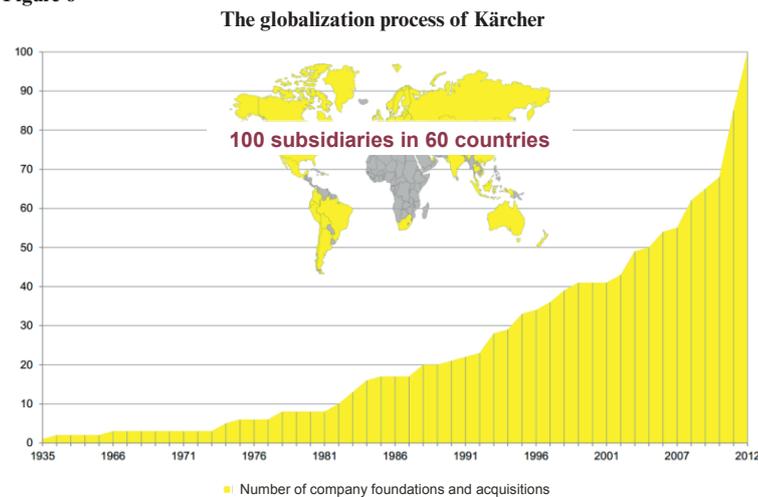
In order to achieve superiority in the end product, Hidden Champions entrench several steps deeper in the value chain to create innovative and unique processes, technologies and components. Uniqueness and superiority can only be created internally. If you buy something on the market, everybody else can buy it too. Hidden Champions are extremely hesitant about outsourcing core competencies.

Lesson 2: Only focus and depth lead to world class. Hidden Champions focus on narrow markets and are deep rather than broad. They tend to do things themselves and refrain from outsourcing core competencies.

Globalization

Focus makes a market small. But how do the Hidden Champions manage to make their markets big? They

Figure 6



Source: Kärcher.

achieve this by globalizing. Thus they combine specialization in product and know-how with global selling and marketing. As I initially mentioned, there are hardly any growth limits if you go out to Globalia. And go you must! The customers are not coming to you. Kärcher, the global leader in high pressure water cleaners, took its first serious steps towards globalization in the 1970s and never stopped, as Figure 6 illustrates.

But it is still a long journey. Kärcher has the ambition to be in all 206 countries of the world, which means that over 100 markets are still to be entered. Like Kärcher, the Hidden Champions globalize by establishing their own subsidiaries in all of the world's key markets. They practice direct customer relationship management instead of delegating their customer relations to intermediaries, agents or importers.

Lesson 3: The Hidden Champions combine specialization in product and know-how with global selling and marketing. Globalization is *the* growth booster for them. They serve the target markets through their own subsidiaries. They heavily invest in the markets of the future. This is also a form of innovation.

Product innovation

One does not become world market leader by imitation, but only by innovation. Innovation starts with spending on research and development. R&D spending by the Hidden Champions is twice as high as in the average industrial company. Even more important is their output. Hidden Champions have five times the

number of patents per thousand employees than patent-intensive large corporations (31 patents vs. 6 patents). The annual statistics of the German Federal Office for Patents (*Bundespatentamt*) show that among the 50 leading patent applicants in Germany, one third are consistently Hidden Champions. A company like Von Ardenne with just over 500 employees regularly registers over 100 patents per year. And one Hidden Champion patent costs only one-fifth of the patent of a large corporation. What is the driving force behind innovation? The markets, technology or both? 65 percent of the Hidden Champions state that these two forces are well-integrated, whereas only 19 percent of large companies say so. And yet this is the core challenge of innovation. As far as R&D costs are concerned, large companies throw big budgets at solving a problem, whereas the Hidden Champions devote very few dedicated people to it. That is why their costs per patent are much lower.

Lesson 4: The Hidden Champions are massive innovators. The effectiveness of their R&D activities beats that of large companies by a factor of 5. Their innovation processes are fundamentally different. Their innovations are both market- and technology-driven.

Closeness-to-customer and competitive advantages

The biggest overall strength of the Hidden Champions, however, is not technology, but closeness-to-customer. This is a natural advantage of smaller and medium-sized companies. An average of 38 percent of their employees have regular customer contacts, compared to only 8 percent in large corporations. Their closeness to top customers is especially pronounced. Grohmann Engineering makes systems for the assembly of micro-electronic products. CEO Klaus Grohmann says: “my market is the top 30 customers in the world”. Asked why he so desperately wants these leading companies as customers, he responds that it is because they are never satisfied. “They are extremely demanding and, thus, are driving us to ever higher performances”. Using top customers to drive your teams to ever higher levels of innovation and higher performance is a very interesting view of a company’s customer relationship.

The strategies of the Hidden Champions are value-driven, not price-driven. They usually command a price premium of 10 to 15 percent over the average market price. Value remains the most important factor. Price comes into the game only if you do not offer

differentiated value (Simon 2015). Another outstanding competitive advantage of the Hidden Champions is product quality. Two relatively new advantages with the biggest increase in importance are advice and systems integration. From a competitive point of view, they are different from advantages integrated in the product. They cannot be easily re-engineered because these advantages reside in employees’ brains and in the organization’s capacity to manage complexity. As a result, the barriers to entry are probably higher today than ten years ago. The Hidden Champions have truly out-innovated their competition.

Lesson 5: Closeness to customer is the greatest strength of the Hidden Champions – even ahead of technology. Their strategies are value-oriented, not price-oriented. The Hidden Champions hold strong competitive positions. Advice and systems integration are innovative advantages that create higher barriers to entry.

Loyalty and highly-qualified employees

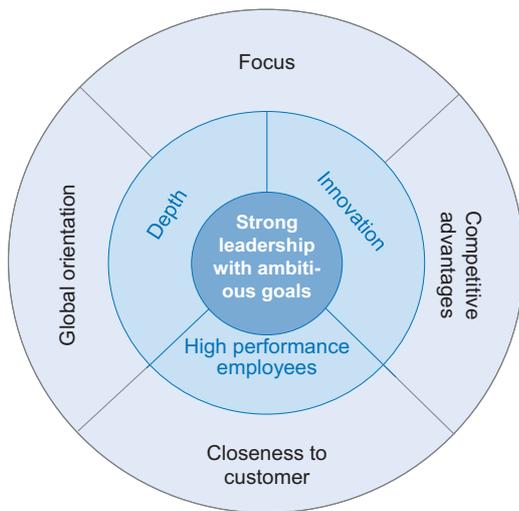
Hidden Champions have more work than heads, highly-qualified employees and low turn-over. They invest 50 percent more in vocational training than the average German company. The share of university graduates has more than doubled, from 9 percent of the workforce ten years ago to roughly 20 percent today. And competitiveness in Globalia is increasingly about qualification. If you hire, educate and train qualified people and top talent it is very important to retain them. The Hidden Champions have extremely low turnover rates: only 2.7 percent annually as compared to an average of 7.3 percent for Germany and almost 20 percent for America. They take with them, of course, their know-how, their experience and their customer relationships. Low turnover rates are more important than low sickness rates.

Lesson 6: The Hidden Champions have ‘more work than heads’ and high performance cultures. Employee qualification is very high. Turnover and sickness rates are extremely low.

Strong leadership

The ultimate explanation for the unusual success of the Hidden Champions lies in their leaders. They are characterized, first and foremost, by a very strong

Figure 7
The three circles of the Hidden Champions



Source: Author's conception.

identity of person and mission, meaning they totally identify with what they do. They mostly see innovation as their personal concern and responsibility. Their leadership is ambivalent. There is no discussion regarding the company's principles and values, but the employees enjoy great latitude and flexibility in the details of carrying out a job. The Hidden Champions have more women in top positions and a very high continuity level among their CEOs. The average CEO tenure is 20 years. In large companies it is only 6.2 years.⁴

Lesson 7: The secret of the success of the Hidden Champions lies in their leaders. They are characterised by total identification with their mission and a strong orientation towards innovation. Their leadership is authoritarian in its principles, but flexible in the details. Continuity is very high. Young CEOs and women play a more important role than in large companies.

A summary in three circles

I summarize the key lessons in the three circles in Figure 7. The core is strong leadership with ambitious goals. The inner strengths are depth, high performance employees, and continuous innovation. The outer circle comprises of a focus on a narrow market, closeness-to-customer, clear competitive advantages,

⁴ See "Booz & Company", *Frankfurter Allgemeine Zeitung*, 16 April 2013.

and all that with a global orientation. The Hidden Champions go their own ways towards Globalia, more decisively and successfully than ever. They do most things differently from the teachings of management gurus, from modern management fads, from large corporations. They are true role models of innovation, strategy and leadership in Globalia.

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PANEL

For Chairman **Quentin Peel** of the *Financial Times*, this panel marks the core of the conference: "it is getting innovation to happen that is the great challenge", he stated, "but are we too comfortable to achieve this?"

The first panel speaker, **Jan Mládek**, Minister of Industry and Trade of the Czech Republic, added a new angle to the discussion: the role of mid-income countries in global competition. The challenges these countries face are technical education and the absorption of R&D. For a country with a strong manufacturing base like the Czech Republic, technical education must have top priority. The absorption of R&D is a difficult matter, and his country is relying on the best-practice methods used elsewhere, with a special look at Israel's success. The Czech Republic in particular is faced with specific challenges from Germany: Industry 4.0 and the change in energy policy. The B2B orientation of Industry 4.0 is the future and his country is doing its best to catch up. Germany's change in energy policy is a big challenge, both for itself and its neighbours. For his country, this shift in policy has repercussions on grid security, and he hopes that the transmission problems in and through Germany will soon be solved.

Ken Hu, the second speaker, is Deputy Chairman of the Board and Rotating CEO of Huawei Technologies, a company with 170,000 employees worldwide, almost half of which are active in R&D, which is 'part of our

DNA'. Since its founding in 1987, Huawei has invested at least ten percent of its turnover in R&D, and in 2014 it was fourteen percent. For Ken Hu, competitiveness is based on innovation, and "innovation is not a sprint but a marathon". The company's long-term strategy is borne out by its patent activity: with 3,442 patent applications worldwide in 2014, Huawei topped the list of global corporate patent activity. Mr Hu also stressed that successful innovations are a response to consumer demands: "the needs of users are the sole driving force and goal of our innovations". In addition to its own R&D locations in China and Europe, Huawei maintains 28 joint innovation centres with its customers. Creating this 'eco system for innovation' helps them understand their customers' needs, lower the risk of failure and greatly enhance the efficiency of the innovation process. They also work together with their industry partners in developing the network technology of the future. Sharing strengths and offsetting weaknesses helps lower the costs of innovation. With this global platform they are able to 'leverage resources throughout the world'.

Sami Mahroum, Academic and Executive Director of INSEAD's Innovation and Policy Initiative in Abu Dhabi, agreed with Quentin Peel that we view the panel topic, 'Out-Innovating the Competition', too much in European terms. The underlying question is how to capture value from innovation wherever you are. With the iPhone, for example, "the value capture goes far beyond the US", with companies in Japan, China and Europe also profiting from the device. Policy-makers must realise that the business model has changed with "companies having become more like football clubs with players from different countries". Google, Microsoft and Apple were the biggest acquirers of European high-tech companies in 2014. With its highly skilled workforce, high level of culture and most importantly its work ethic, Europe has both a competitive and a comparative advantage. With this, it is important to tack into global value chains wherever they are. "Google is a global company and we should all try to make value from it". Also in terms of German exports, everyone should think of how to capture value from this.

The last speaker, **Hans J. Langer**, CEO and founder of the EOS Group, a company in the high-end Additive Manufacturing, 3D printing world. He also started the company Scanlab, with a high market share in laser manufacturing applications. Last year they sold more than 30,000 scan heads for industrial production

throughout the world. In Additive Manufacturing their largest customer is General Electric, which uses his technology to develop and build a fuel injector for the standard GE aerospace engines, yielding a two percent savings in fuel. The work was done in fact by a start-up that GE eventually took over. EOS's customers are three American start-ups. They have also created a 3D printing cluster in Munich, which has led to several start-ups. This new technology is extremely disruptive because it allows them to build parts that could not have been built with conventional methods. The company, although global, is quite happy to have its R&D and headquarters in Bavaria, in 'Isar Valley', with its infrastructure and skilled workforce. EOS is able to find skilled engineers because it has an innovative culture that people want to be a part of. "If I can find a start-up entrepreneur who has failed, this is my first choice when I hire", Mr. Langer observed, because this is the kind of venture atmosphere his firm is creating.

In the discussion **Birgit Potrafki** of Bosch GmbH asked Mr Hu to assess the innovation potential in China itself, since Huawei has much of its R&D outside the country. Mr Hu commented first on the innovation potential in Germany. Munich is the home of their 5G R&D in Europe, with 300 engineers from many different countries. China too has a great potential for technological innovation. Two years ago the government published a White Paper on a ten-year reform programme that identifies areas of technological innovation, also for global companies. Quentin Peel mentioned that the European awareness of the surge in patent registration in China is much too low. Mr Hu added that intellectual property protection has improved a lot in China in recent years, which has also been a boost to Chinese SMEs.

John Kornblum, who works with start-ups in innovation, observed that Mr. Langer's assessment may be true for Bavaria but not for the rest of Germany, not even for Berlin. "What can Germany do to stimulate innovation throughout the rest of the country?" Mr Langer observed that not all start-ups are alike. When he invests in a start-up he always looks at the sustainability of their business model, especially if they can eventually change the business model of a large company. "We have to encourage the large companies to look into these start-ups". The big companies also need to acquire the culture of the start-ups they buy.

Mr Simon referred to 'start-up plus scale up', that is the successful start-ups need to grow. Germany has

many different clusters, and the country's strength is its decentralisation. With regard to low-income countries, innovation should be seen on a global scale, and a small company can be global with the Internet and air transportation, so a company in Tunisia should be encouraged to go to Europe or the United States. Mr Langer added that his company built a factory 'around the corner' for Additive Manufacturing in South Africa and other countries could also be considered. With mobile phones and the Internet, countries are able to jump ahead two generations in telecommunications. Mr Simon observed that an app-based company could become more labour intensive than manufacturing-based companies, which are highly automated.

Ellen Comberg of Global Female Leaders mentioned the problem of access to finance – Silicon Valley has a venture capital scene that is very mature, but Germany lacks this culture of venture capital. Mr Simon admitted that Germany has a bottleneck here, but that it has improved, especially in the second phase of development when millions are needed. Mr Mládek commented that finance is one of the biggest problems in his country, especially venture capital. On the basis of the start-ups he has studied, Mr Mahroum did not think that venture capital was a problem because it can be raised anywhere in the world. "If you have a strong business proposal, you can raise the money from global investors who are looking for good ideas".



Panel 3

Introduction

ECONOMY AND CIVIL SOCIETY: HOW INNOVATION DRIVES CHANGE

DIETMAR HARHOFF

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Introduction

The panel assembled here will discuss how innovation drives change, and which role innovation has in a social dimension. To be more precise, we will talk about ‘social innovation’ and ‘social entrepreneurship’. Doing so, we will walk somewhat off the beaten path along which the role of research and development, of knowledge externalities, and the impact of institutions like universities and public research organizations are discussed as major drivers of innovation and thus of change.

The time is too limited to give a detailed academic introduction to the topic. Let me focus instead on two aspects. First, I will try to challenge some notions of innovation that are used widely, especially in policy circles. Second, I will try to give a brief characterization of innovation activities in Germany in order to describe the context within which ‘new’ approaches now emerge. And finally, I will comment on the emergence of social innovation and social entrepreneurship itself.

Innovation defined

‘Innovation’ is probably one of the most abused terms in today’s political language. The term is typically em-

ployed to describe something genuinely positive and desirable, and many politicians are delighted to bask in the glow of this connotation. If one goes back to reasonable definitions of innovation, one quickly finds out that they are tricky. Innovations are something novel – be it technical, organizational or social – that is actually being applied. Hence, the beautiful thought, *der ‘schöne Gedanke’* (Thomas Mann), alone is not enough. But new to whom? Suppose we consider a new process for producing some artefact. Clearly, its first-ever introduction in any production environment on this planet deserves to be called an innovation. Later attempts to bring the same new concept to other firms may be called ‘imitations’. However, to a mid-sized company that pursues such imitation the pains of introducing the novel approach may be the same as in the first-ever introduction. Taking a strict view on novelty is only appropriate when we seek to identify the very small group of ‘first-ever’ approaches. If diffusion of novel concepts is being studied, ‘new to the adopter’ would be the appropriate definition to work with. In between these polar cases are many more that may be of practical or theoretical interest.

Innovation ambivalence

Some of the business press and some not-so-thoughtful executives (*‘Innovation ist, wenn der Markt Hurra schreit!’*) use the term innovation naively to describe purely positive outcomes. That is deceiving for two reasons. First, innovation is ambivalent. Second, it is highly risky. Let me discuss these aspects in turn.

Innovation outcomes are strikingly ambivalent. Even some of the most admired innovations have had some consequences that were dubious, to say the least. Let us take the well-known example of movable type printing, developed by Gutenberg in the mid-15th century. First of all, we need to apologize to our Chinese and Korean guests today, since Gutenberg was not the first to discover such a system. The world’s first-ever (known) movable type system with ceramic types probably emerged in China around 1040, and around 1380, almost 100 years prior to Gutenberg’s work, Korean inventors developed a system with me-

tallic types. Gutenberg was not aware of these pioneering attempts, nor were they nearly as successful as his concept which relied on type made from an alloy of lead, tin and antimony (which became the standard for centuries to come). One of the contemporaries of Michelangelo and Leonardo Da Vinci, Pietro Aretino, was a well-known, but somewhat dubious character of the age. He employed the new technology to print news – he is actually called the ‘first journalist’ by some historians – and many other texts which had hitherto been ‘manuscripts’. But mostly, he copied material we would consider nowadays *pornographic*. Thus, our solemn notion that Gutenberg’s innovation enabled Western civilization to print holy texts may be correct, but many more texts – not so holy – were printed as well. In modern start-up lingo, one would even say: the latter use was the killer application of the day. The innovation by itself was not uniformly, but some uses of it were highly beneficial. Nonetheless, even this celebrated innovation was ambivalent.

Innovation-related risk

Innovation is also highly risky, and if we exclude all failed innovation attempts from the definition, risk in innovation can no longer be discussed. The innovation research literature shows that a large share of innovation projects undertaken in established corporations (and thus likely to be incremental) will fail either for technical or market reasons. Even among the successful outcomes, there is tremendous heterogeneity. A number of years ago, Mike Scherer and I started a research project to study the value distribution of patented inventions. We found that in a typical patent portfolio of, say, one hundred patents, ten percent of these patents represented ninety percent of the value of the portfolio. Similar distributions are found in the portfolios of venture capitalists, in sales at the box office, and in many other areas of creative activity. Hence, innovation generates highly skewed outcomes, even if we consider only the successful cases. Based on this insight we praised Chairman Mao Tse Dong for his policy rule ‘Let many flowers bloom’. In other words, if you want innovation, you may need many experiments in order to generate a sufficiently large group of highly valued innovations.

Research and innovation in Germany

The production of knowledge is at the core of research and development (R&D). But there are impor-

tant forms of market failure that lead to an undersupply of knowledge in market systems. All industrialized countries and most threshold and developing countries are, therefore, embarking on government support for science, research and innovation. Most countries have – over time – developed specific national innovation systems which consist of a number of complementary elements and institutions. A simplified and very pragmatic view which takes five dimensions into account has been developed by the OECD: public sector science and R&D, private sector innovation, technology transfer, entrepreneurial innovation and governance of the overall system. In brief, the current German innovation system can be characterized as follows along these dimensions:

1. Public sector science and R&D. Germany’s universities saw a long time period after World War II and in particular after the 1968 student revolts in which they were beset with bureaucracy and a complete lack of competition. An important impetus was brought into the system by the German Universities Excellence Initiative of 2005/06. A competitive funding mechanism has distributed a total of 2.7 billion euros (1.9 billion for 2007–2012), based on a meritocratic assessment of universities’ performance in research and strategic outlook. The Excellence Initiative yielded a striking result – the distribution of funding was highly concentrated among a few locations. If anything, the results have demonstrated the tremendous heterogeneity among German universities. The impact of the initiative is largely seen as positive – many German universities were able to raise their international visibility.
2. Private sector innovation in Germany is strong, but highly specialized. The three most successful export sectors – chemicals, automobiles, and machinery – are also the main contributors to research and development. Information and communication technologies (for which a strong scientific base existed) have slowly lost importance and public support. Still, R&D expenditures in Germany rose from about 2.5 percent of GDP to almost 3 percent in the time span from 2007 to 2012. Given that almost two thirds of the bill is shouldered by industry, this indicator carries a lot of weight and points to renewed strengths in the classical sectors of German industry.
3. Technology transfer has been strong in some sectors of the German economy, such as chemicals and mechanical engineering. The Fraunhofer Soci-

ety with its institutes focusing on applied R&D has been a highly successful promotor of innovation in some areas. In other fields, especially the new science-based sectors such as the life science, digital technologies and nanotechnology, there has been less success, partly because there is no strong established sector in Germany that could pick up research results and turn them into commercial value creation.

4. At the same time, the German innovation system has had – for decades – a lamentable Achilles heel: its lack of support for growth-oriented start-ups. In the 19th century, Germany had been a hotspot for entrepreneurial activity. After World War II, there was another burst of entrepreneurship. But Germany did not develop a venture capital industry of much importance in the 1970s and 1980s, and it has lagged other countries (among them Scandinavian and other continental European countries) in start-up finance and entrepreneurial culture. The German tax code still heavily favours large corporates with tangible capital over fast-growing small firms with nothing else to show for their efforts than intangible assets and accumulated losses. Restrictions on the use of loss carry-forwards by later-round investors persist, and venture capitalists do not find very conducive conditions for setting up their funds in Germany. Given that VC financing is mostly done in the (geographic) backyards of the funds, this translates into a lack of equity capital which has become a major stumbling block for the new digital sector as well as for start-ups in the life sciences. This has partly been covered up by an admirable development in Berlin which is now Germany's premier location for digital start-ups (despite discontent in Munich). But even Berlin start-ups find it hard to obtain the larger amounts needed for a B-series financing round. Seed-stage financing support provided by the government is in ample supply. But incentives for private financiers to step in and bring scientific results and early-stage start-ups to the next level are dampened by these impediments.
5. Governance. In Germany, the Federal Ministry of Education and Research is in charge of federal programs to support science, and to some degree innovation. The Federal Ministry for Economic Affairs and Energy runs support programs and other measures that seek to bolster innovation in the private sector, as well as technology transfer and entrepreneurship. Other ministries have domain-specific agendas and initiatives pertaining to

innovation. There is an obvious need for coordination among these players. But the situation is complicated further by the federalist structure of Germany where the states have their own, significant initiatives for supporting innovation. And finally, the various programs of the European Commission – currently in its 8th framework program, called Horizon 2020 – add to the complexity of the overall setup. In 2006, the German federal government decided to embark on a new attempt of coordination at the federal level. It tried to develop a comprehensive research and innovation strategy ('Hightech Strategy') which has been continued by two other coalition governments since then. The start of the Hightech Strategy was accompanied by the creation of a governance body (*Forschungsunion*) which brought representatives from industry, academia and government together to plan and watch over the budget increases and new initiatives started in 2006/07. Contrary to expectations (including those of this author), the *Forschungsunion* (and its successor councils) appears to have had the desired effect at least in parts. The council was able to reduce duplication of activities among the various public sector players supporting innovation. Moreover, it led to a new form of dialogue between the various players in the German innovation system and included for the first time new types of players, among them individuals from non-government organizations and the venture capital sector.

It is probably fair to say that the new form of governance has played a positive role during the time period since 2007 which saw an increase in R&D activity in Germany, and an improvement in the international visibility of its universities and research institutions fuelled by the Excellence Initiative and other programs. While the majority of activities, e.g. in the *Forschungsunion*, followed a traditional model of academia generating new knowledge which is then turned into innovation by private players, a shift became visible in 2009 when the German government began to emphasize 'mission orientation' and started to organize its innovation policies as a response to major societal challenges (such as health, mobility, security, etc.). A number of other countries had undertaken this step earlier. The 2013 coalition government added a notion of citizen participation in innovation to its policies. This brings us now to consider some gaps in the classical view of innovation, and to the main topic of our panel, social innovation.

Sources of innovation reconsidered

One of the most prevalent, though often only implicitly stated notions in economics is that innovation is typically pursued by some private-sector manufacturer or service provider who – by means of innovation – improves about the own product or service. We can run through the usual modelling exercises and find optimal research and development investments. Empirically, these models have found some support, but there is also opposition from researchers who have in-depth knowledge of real-world innovation processes.

We also know from a large number of studies that innovation in equipment and processes will often be undertaken by the firms employing the respective machinery and production processes. Eric von Hippel has shown that this form of innovation is not limited to firms, but that individual users are a frequent source of innovation in a range of fields. What makes a user's innovation, at least in many contexts, superior to innovation by manufacturers? The view that emerged in a series of studies in the user innovation literature is that users have better insights into the context in which the innovation will be used. Information on the user's needs and the context of use are hard to replicate, since the respective information is 'sticky', i.e. difficult to transfer. Solution-based information or solution capabilities may be easier to muster than the sticky information describing the context of use. While early studies had focused on industrial processes and equipment, subsequent research also demonstrated that consumer products were not exempt from the user innovation phenomenon. If anyone is in search for examples to see the impressive breadth of the phenomenon, consider the examples of medical innovation at *patient-innovation.com*. It is important to note that to some degree, innovation activities are undertaken not at the work place, but at home. Some of these activities are now considered under terms like 'household innovation' or 'citizen innovation'. For Britain, a 2009 household survey found that 6.1 percent of UK consumers had undertaken consumer product innovation during the prior three years. Consumers engage in projects that are complementary to the innovation efforts of producers. These innovations are rarely protected by intellectual property rights, but in some cases, commercial actors actively search for these contributions and include them in their product portfolios. While these innovations – coming from private individuals, mostly not seeking to maximize their

profits – are not the same as social innovations, they have similar features. In particular, these phenomena demonstrate that innovation is not confined to industrial laboratories.

The promise(s) of social innovation and social entrepreneurship

The panel assembled here will discuss various forms of social innovation and deliberate over its role and impact. I do not have the hope that we can find a generally accepted definition of social innovation. If innovation is difficult to define, social innovation creates real headaches for researchers trying to do so. Attempts may range from a limited application of the classical definition – something new that is being applied, in this case to social matters – to far-ranging classifications that call anything social innovation that is deemed beneficial to society and not seen before.

All innovation has social implications. The removable type printing machine mentioned before changed the distribution of knowledge and made all sorts of texts more accessible to the population at large. It created important incentives for education, prepared the ground for the emergence of school systems, and had a number of other – ambivalent – implications as well. The social implications of technical innovation have often been a mere consequence, an afterthought to the process of creating a technological breakthrough or improvement. The new quality of social innovation as it emerges now is that it aims to tackle social aspects directly, such as lack of access to education or to medical treatments. There is a wide range of related phenomena, starting from philanthropy, and ranging over various forms of corporate social responsibility to social entrepreneurship that are relevant in this context.

The organizers have demonstrated great timing to have the panellists discuss this topic. To start the discussion, let me distinguish two aspects in the current discussion. One focuses on social innovation coming from the state. Some may argue that the process of coming up with novel social policies is as much impacted by externalities as is the process of generating technical breakthroughs. I would argue that the argument may be justified, but care should be taken not to generate a justification where any government action becomes a social innovation. I do not view this as a major force in the current debate.

The other, more relevant view focuses on social innovation coming from private citizens or corporations who seek to bring about social change. Economists are usually sceptical when such claims are made, but there may be good reasons for them to listen and watch the developments carefully. The usual objection – that such activities may crowd out markets – does not apply when the projects only receive initial funding, but are sustainable in the long run.

Just to make this tangible – consider two examples. A particularly positive one is *Ashoka*, a global platform which has supported to date about 3,000 entrepreneurs in a wide range of projects. Let me also point your attention to a Munich-based example which was initiated by four universities: the Social Entrepreneurship Academy (SEA), a consortium of the entrepreneurship centers of the four Munich universities (LMU, TUM, the University of Applied Sciences, a polytechnic, and the *Bundeswehrhochschule*). The SEA seeks to support students in pursuing social innovation projects. These are just two examples from a space that is getting crowded quickly.

Summary

To summarize, there is good reason to believe that the classical view of innovation is in need of extensions. The world is greatly enriched by concepts of social innovation and social entrepreneurship. Some of the examples – e.g. developed at *Ashoka* or at some of the entrepreneurship centers of the universities – are truly impressive and deserve to be praised for their vision, courage, and – in many cases – positive impact. But to pour some water into the wine, the economic importance of this movement is probably still limited at this point. And innovation, even if pursued for worthy social objectives, will remain risky and ambivalent. Social innovation projects are no more immune against these dangers than the conventional innovation projects pursued for monetary gain. Nonetheless, it is hard to object to a model of social innovation and entrepreneurship where talented citizens start new, self-financed and sustainable initiatives that make the world a better place.

PANEL

“Innovation for what? Why are we doing all this?”
“Can we harness this change to improve our planet?”

This is how **Katinka Barysch**, Director of Political Relations, Allianz SE, Munich, introduced this panel.

Followed by the introduction made by Dietmar Harhoff, Ms. Barysch asked **Bill McDermott**, CEO of SAP, to comment on his focus when he took charge of SAP five years ago. When he started, he replied, they made an honest assessment of their strengths and weaknesses. SAP was very good at application and analytic software, but they needed to adapt to the immense growth in data and their software had to be ‘made beautiful’. They also needed to help companies collaborate in line with the development of social networks. His first two weeks were devoted to their vision: “to help the world run better and improve people’s lives”. The ‘run better’ part involved the technology; the ‘improve people’s lives’ part meant that the consumer would be the ultimate decider. An example of improving people’s lives is the health care industry. Here information technology must be used to access and analyse the vast amount of research to find personalised solutions for individual needs in real time. In terms of Industry 4.0, companies are rethinking the whole value chain using modern technology – their value added comes more from making the machines reliable than from the machines themselves. Their vision drove their entire R&D cycle and the way management had to think. “Had we not spent the two weeks working on our vision, we would definitely not be the company we are today”.

Hedda Pahlson-Moller, founder and CEO of Omnisource International, is a proponent of the unorthodox sources of innovation, working from the bottom up. As an entrepreneur and investor, she uses the services that some of the panel members provide. For her, social innovation means ‘using an entrepreneurial mindset to tackle societal problems’. Civil society is beginning to have a stronger voice since entrepreneurs are often unable to scale their solutions to tackle the real problems. Consumers are also becoming more discerning, preferring brands that project a more sustainable living vision. They want socially responsible companies that provide products that are environmentally viable and that treat their employees fairly. “There is now a convergence of the unorthodox innovators coming together with standard companies and creating fantastic solutions”. The ‘social revolution’ is coming and connecting these two worlds.

Charles-Edouard Bouée, CEO of Roland Berger Strategy Consultants, agreed that “the power lies at

the base". The smartphone is not only 'the remote control of your life' but also a link between corporate innovation and social change, between the top and the bottom. Social change also goes beyond technology – "it is how we want to shape the world of tomorrow". When we look at the future, in a world of exponential technologies that affects every area of our lives, we must actively shape this development and assure, for example, that the new technologies do not destroy jobs because "otherwise we will have a world in which none of us want to live".

Arko van Brakel, CEO of deBaak training institute and a 'serial entrepreneur' feels that once again "he is on a wave that may change the world". The effect of the exponential growth of digital technology is that information also grows at the same rate, which leads to new business models and a new leadership style. Anyone who uses Google as a search engine contributes to making the product better and is 'a co-developer of Google'. The same applies to Facebook: "if you are not paying for the product, you are the product". Solar energy is also a technology that is exponential and that will make energy affordable for large groups of people. This will enable us to make fresh water from salt water at low costs, creating agriculture in new places. This will lead to an unprecedented innovation and wealth boost to the world. Unfortunately, old thinking still stands in the way. Hence, the key questions: "how can you adapt your leadership style to freely embrace the full opportunity of the world of abundance?"

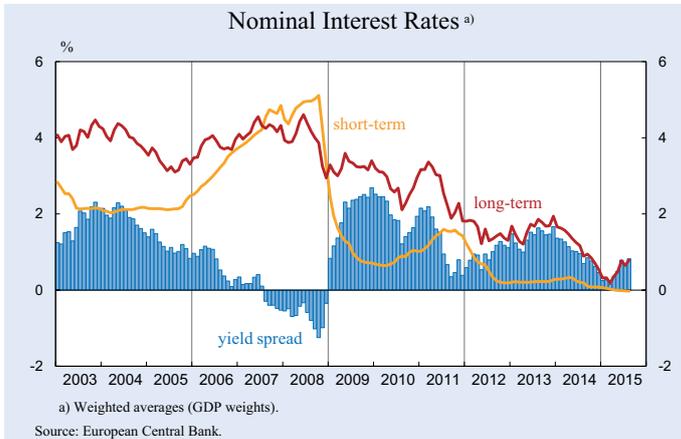
In the discussion among the panel members, Dietmar Harhoff pointed to the difference between start-up and established companies. When a company encounters its first difficulties, innovative management practices are often the first to go. Arko van Brakel responded that companies follow an S-curve, value-driven at the slower beginning phase followed by periods of rapid growth and then stagnation. To start a new S-curve, companies need to return to their original values. Bill McDermott agreed with the S-curve analogy and added that leaders need the courage to change in order to 're-invent the S'. You also have to keep the company 'full of youthful exuberance' but to learn from the 'seasoned veterans' as well. Acquiring young companies also helps to energise a larger enterprise.

In the discussion, **Peter-Alexander Wacker** of Wacker Chemie asked how can we promote fresh thinking and prevent creative young people from becoming frus-

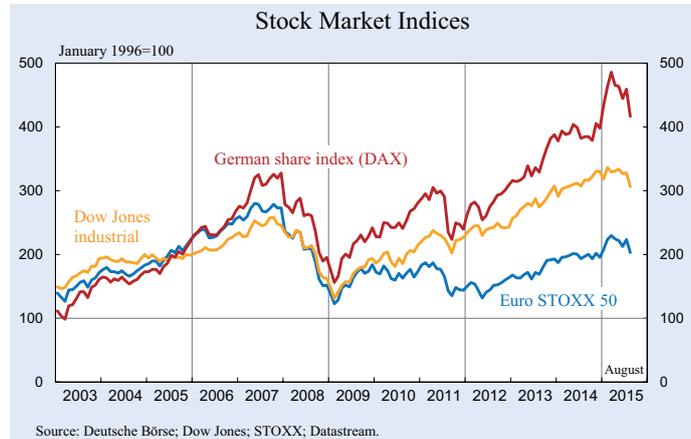
trated when they enter the workforce. Mr van Brakel replied that frustration arises when talents are not used optimally. **John Kornblum** himself was frustrated with some of the weaknesses in the panellists' own Websites. Mr van Brakel partly agreed, but for his company their social media presence is more appealing and more important. **Ulrike Reisach** of Neu-Ulm University of Applied Sciences referred to the need for a comprehensive approach to integrate the wave of asylum seekers in Europe and to utilise this new talent potential. Hedda Pahlson-Moller added that there are two ideas that are driving social innovations: sharing is the new owning and poverty or exclusion is a waste of human capital, the last point applying especially to the new migrants.

Clare Pearson of DLA Piper UK LLP, a law firm based in Shanghai, asked what skills are necessary for leaders to create an 'eternal spring' in their multinational companies. Bill McDermott replied that young people want leaders who are innovators, intellectually curious and open to new ways of thinking. "And you cannot just hire young people, you have to train them". Mr Bouée added that "innovation is not sheer luck" but comes from passion and hard work. **Horst Krumbach**, founder of a social entrepreneurship, was glad that corporate social responsibility (CSR) was being discussed and suggested that governments, companies and foundations work together in a joint venture to help social entrepreneurs become self-sufficient. Mr Harhoff agreed that we can do a lot more to help finance these endeavours, by means of social impact bonds, for example. "We need to enable young people to be either social or commercial entrepreneurs – that decision is theirs – and universities should help them".

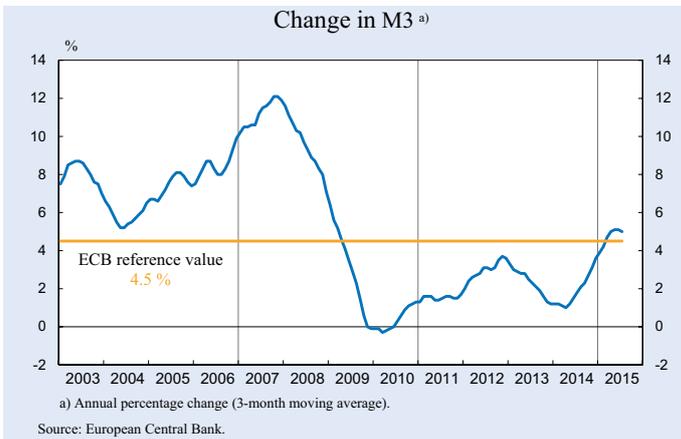
FINANCIAL CONDITIONS IN THE EURO AREA



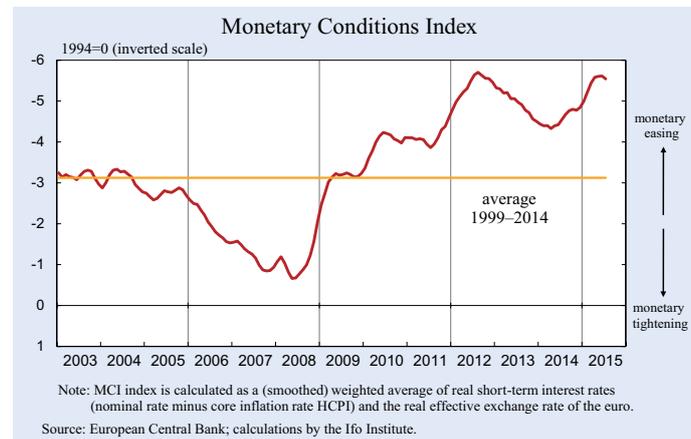
In the three-month period from June 2015 to August 2015 short-term interest rates decreased: the three-month EURIBOR rate declined from -0.01% in June 2015 to -0.03% in August 2015. On the other hand the ten-year bond yields slightly increased from 0.77% to 0.79% in the same period. The yield spread reached 0.82% in August 2015, up from 0.78% in June 2015.



The German stock index DAX decreased in August 2015, averaging 10,259 points compared to 11,309 points in July 2015. The Euro STOXX also declined from 3,600 to 3,270 in the same period of time. The Dow Jones International decreased as well, averaging 15,528 points in August 2015, compared to 17,690 points in July 2015.

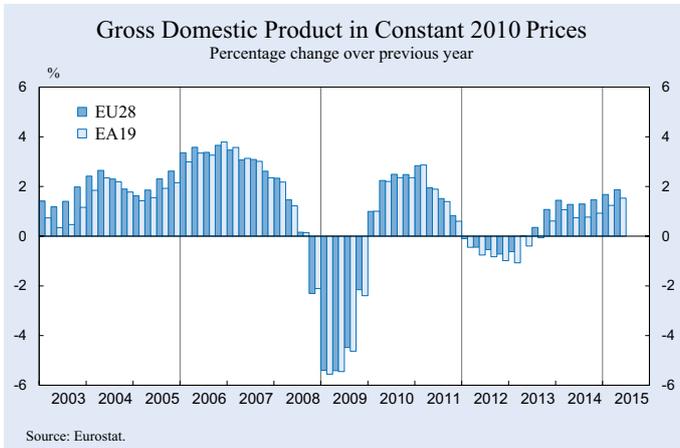


The annual growth rate of M3 decreased to 4.8% in August 2015, from 5.3% in July 2015. The three-month average of the annual growth rate of M3 over the period from May 2015 to July 2015 increased to 5.1%, compared to 4.6% in the period from February 2015 to April 2015.

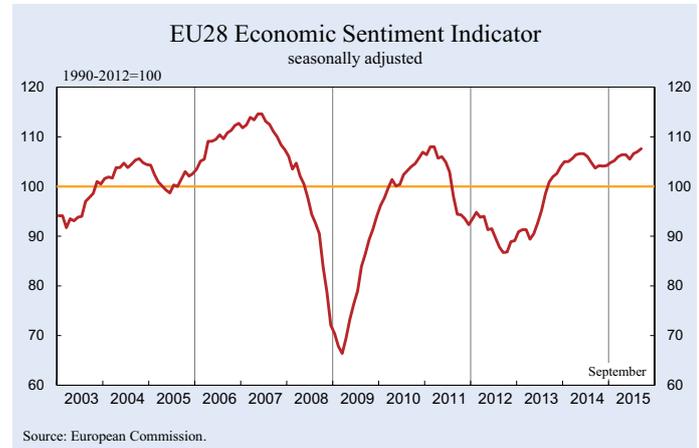


Between April 2010 and July 2011 the monetary conditions index remained rather stable. This index then continued its fast upward trend since August 2011 and reached its peak in July 2012, signalling greater monetary easing. In particular, this was the result of decreasing real short-term interest rates. In July 2015 the index stopped its upward trend which had been initiated in May 2014, and started to decline.

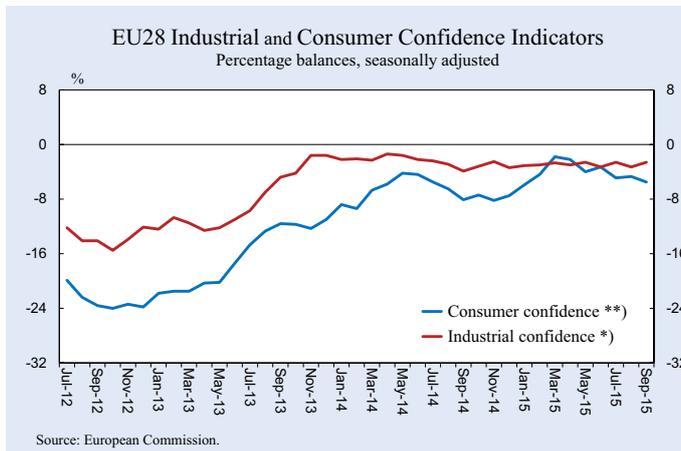
EU SURVEY RESULTS



According to the second Eurostat estimates, GDP grew by 0.4% in both the euro area (EA19) and the EU28 during the second quarter of 2015, compared to the previous quarter. In the first quarter of 2015 the growth rates had been 0.5% in both areas. Compared to the second quarter of 2014, i.e. year over year, seasonally adjusted GDP rose by 1.5% in the EA19 and by 1.9% in the EU28 in the second quarter of 2015.



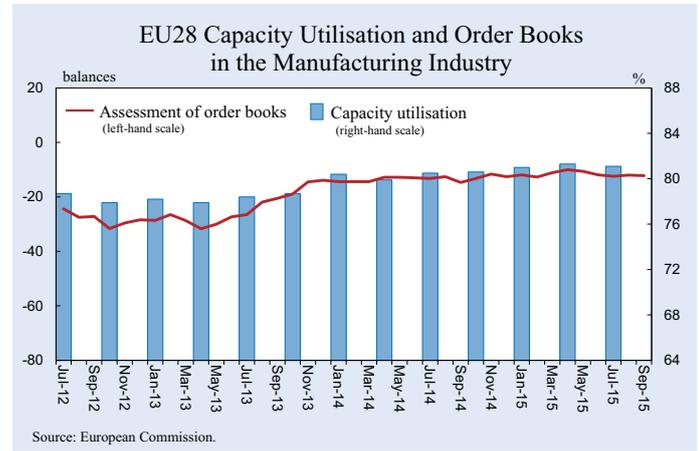
In September 2015 the Economic Sentiment Indicator (ESI) improved in both the euro area (by 1.5 points to 105.6) and the EU28 (by 0.6 points to 107.6). In both the EU28 and the EA19 the ESI stands above its long-term average.



* The industrial confidence indicator is an average of responses (balances) to the questions on production expectations, order-books and stocks (the latter with inverted sign).

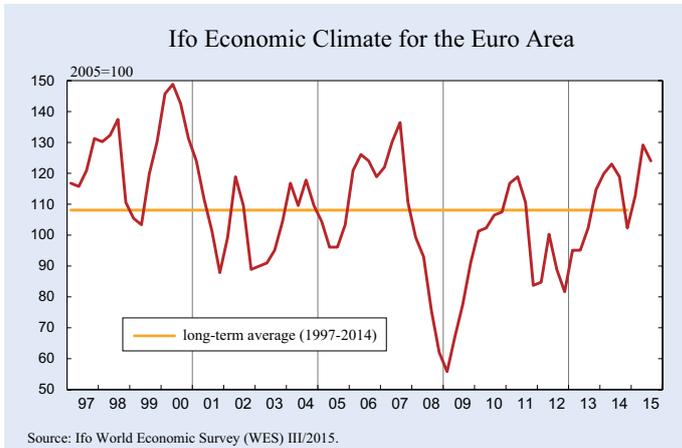
** New consumer confidence indicators, calculated as an arithmetic average of the following questions: financial and general economic situation (over the next 12 months), unemployment expectations (over the next 12 months) and savings (over the next 12 months). Seasonally adjusted data.

In September 2015, the *industrial confidence indicator* increased by 0.7 in the EU28 and by 1.5 in the euro area (EA19). On the other hand, the *consumer confidence indicator* decreased by 0.8 in the EU28 and by 0.2 in the EA19.

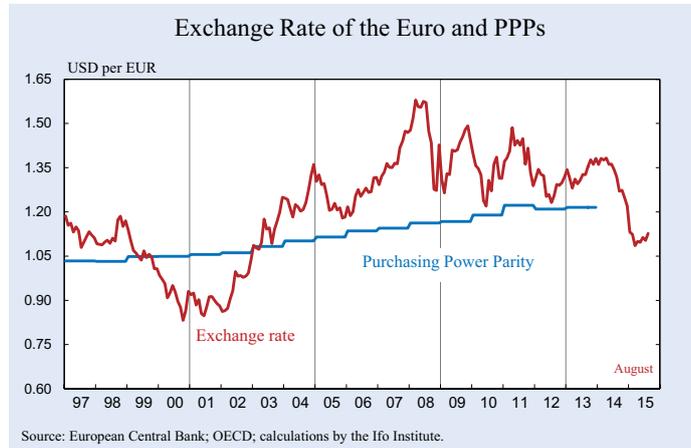


Managers' assessment of *order books* reached – 12.2 in September 2015, compared to – 12.0 in August 2015. In July 2015 the indicator had amounted to – 12.4. *Capacity utilisation* reached 81.1 in the third quarter of 2015, slightly decreased from 81.3 in the second quarter of 2015.

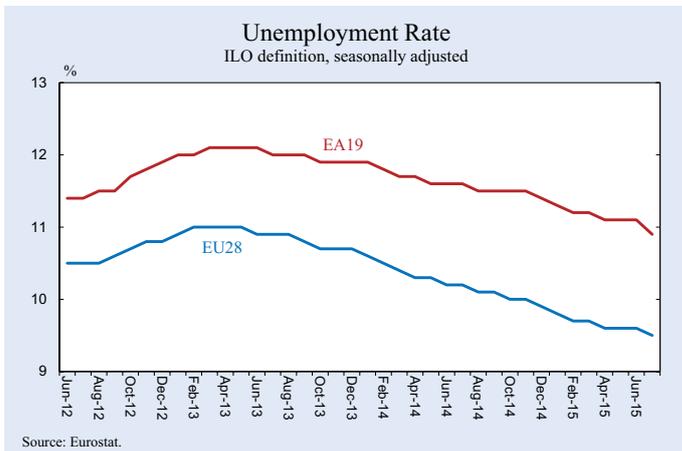
EURO AREA INDICATORS



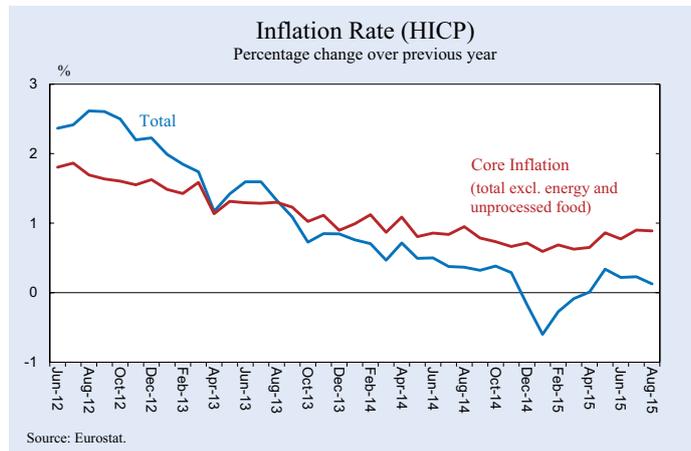
The Ifo Economic Climate Indicator for the euro area (EA19) edged downwards in the third quarter of 2015 and dropped to 124.0 points from 129.2 points last quarter. While assessments of the current economic situation brightened slightly, the six-month economic outlook clouded over markedly. The economic recovery in the euro area economy will lose momentum.



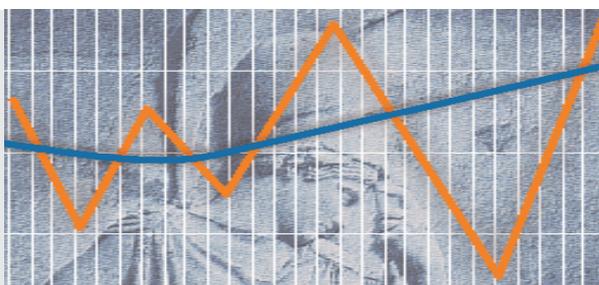
The exchange rate of the euro against the US dollar averaged approximately 1.11 \$/€ between June 2015 and August 2015. (In May 2015 the rate had amounted to around 1.10 \$/€.)



Euro area (EA19) unemployment (seasonally adjusted) amounted to 10.9% in July 2015, down from 11.1% in June 2015. EU28 unemployment rate was 9.5% in July 2015, down from 9.6% in June 2015. In July 2015 the lowest unemployment rate was registered in Germany (4.7%), the Czech Republic and Malta (both 5.1%), while the rate was highest in Greece (25.0%) and Spain (22.2%).



Euro area annual inflation (HICP) was 0.1% in August 2015, down from 0.2% in July 2015. A year earlier the rate had amounted to 0.4%. Year-on-year EA19 core inflation (excluding energy and unprocessed foods) slightly decreased to 0.89% in August 2015, from 0.90% in July 2015.



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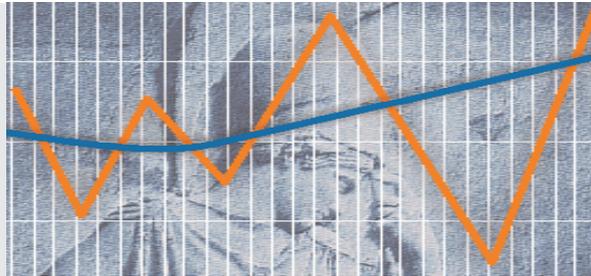
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