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Perspectives for the Global Economy – The Aftermath of the Financial Shocks: Report on the 2009 CESifo International Spring Conference

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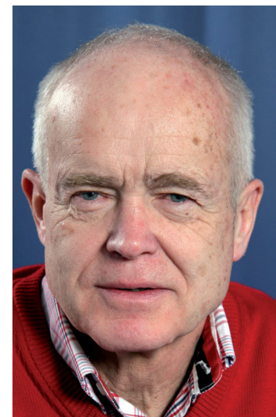
The Ifo Institute for Economic Research at the University of Munich held its annual CESifo International Spring Conference at the Academy of the Konrad Adenauer Foundation in Berlin on 19 and 20 March 2009.[1] The conference was entitled "Perspectives for the Global Economy: The Aftermath of the Financial Shocks". A distinctive feature of this conference was the bringing together of the views of experts of financial markets with economists and experts from the manufacturing sector.

The first day concentrated on two topics: the origins and lessons of the financial crisis and the global economic perspectives by regions. Despite progress in the rectification of the problems in the financial market, most of the speakers saw a bleak outlook not only for 2009 but also for 2010. This assessment was based on further existing global imbalances and the time needed for the readjustment of the financial system. Some relief is expected with the Chinese economy, which has some freedom of action to counter the negative effects. Only Jim O'Neill of Goldman Sachs pointed out a brighter outlook, as he saw improvements in the financial market that will support above all the US economy.

On the second day speakers examined the prospects for European manufacturing industries in the coming years. A prolongation of recessive trends into 2010 was the view of the majority of the sectoral experts. Most dismal were the views on the automotive and the engineering industries as well as on European housing construction, although there are major discrepancies between the EU Member States in the level of overheating in recent years. Even if a stabilization or a slight increase in output occurs next year, companies will have to reduce their staff to adjust to the lower capacity utilization.



World economy and financial crisis

After opening the conference, Ifo President *Hans-Werner Sinn* examined the causes of the financial crisis and its effects on the real economy. To understand the deeper economic reasons for the crisis, Sinn stressed the need to look beyond the record US current account deficit, the low US saving rate, subprime mortgages and the bursting of the real-estate bubble, and to focus on the aspect of limited liability.

Limited liability is essential for creating a joint stock company; one cannot make the individual shareholder liable for a company's business. Thus, limited liability helped make capitalism possible in the first place. However, one important cause for the financial crisis lies in the limited liability of the shareholders. American investment bankers took advantage of this limited liability to the maximum extent: they used less and less equity capital (4 percent or less) and borrowed more and more money. They distributed their profits in order to minimize losses in turbulent times, and they began to gamble knowing that the losses exceeding their equity capital would have to be borne by the creditors or the taxpayers. But not only Wall Street gambled. Main Street did so as well, and for a similar reason. Because banks gave them non-recourse loans, their liability was limited just like that of banks, and so they bet on house price increases, borrowing and buying excessively. The banks securitized the credits, created mortgage-

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[1] The next CESifo International Spring Conference will take place in Berlin, 18–19 March 2010.

backed securities and sold these to other banks in order to pass on the risk. The bank that bought the mortgage-backed securities bundled them into packages of good and bad claims and created new asset-backed securities of the Collateralized Debt Obligations (CDO) variety, which they resold. This procedure continued, so that at some point, the banks had lost the overview of the claims they actually had.

To overcome the crisis, Sinn demands stricter equity regulation of banks. In that way, banks have a buffer in case a crisis occurs, and, what is more, they have a lower incentive to gamble because they have more to lose in the case of failure. In order to avoid the competition of laxity among different jurisdictions, such a solution would have to be implemented jointly by all countries.

The world is currently in its deepest post-war recession, in fact in the deepest recession since the Great Depression of 1929. The magnitude of the banking crisis is even greater than at that time. The United States is facing tough times, the flow of loans has been interrupted and many people cannot borrow anymore. An already highly indebted government is borrowing even more. This is a continuation of an unsound development and it will take more than one presidential term to overcome the crisis.

Kai Carstensen, Head of Ifo's Business Cycle Analyses and Survey Department, identified three obstacles to a quick recovery of the world economy. First, there are painful adjustment processes lying ahead for the United States. In particular, the current account is still negative and the consumption share in GDP is too high. To achieve sustainable growth, both consumption expenditures and economy-wide borrowing from abroad have to come down to a sustainable level. So far, the adjustment burden has mainly been on investment. This is typical for a business cycle downturn but it will not be sufficient. But if consumption falters, this will have strong repercussions on US production activities. Hence, the United States will not be the growth engine for Europe and the world economy in the coming years.

Second, the write-downs by banks and other financial institutions impede their ability to lend as documented by credit growth numbers and bank lending surveys. On top of this, the cyclical loan defaults are still to come and they will hurt banks even more in a situation of tight balance sheets. In order to prevent a credit crunch, it is therefore of prime importance for economic policy to quickly restore a healthy banking system.

Finally, it is likely that collateral constraints and risk premia will rise permanently above the levels seen during the recent boom. Inadequately low pricing of risk was one of the major causes behind the bubble in financial markets. Since the crash, most market participants have been extremely risk-averse, which is a natural reaction and usual from a cyclical perspective. However, the typical pattern according to which the risk-aversion would disappear again fairly quickly does not seem to be the most probable scenario this time. In contrast, it is likely that investors and regulators have learned their lesson. This, in turn, implies that credit conditions will remain relatively tight for a sustained period of time, in which capital formation is more costly and hence growth remains less dynamic than before.

Outlook for financial markets

Axel Bertuch-Samuels, Deputy Director of the Monetary and Capital Markets Department of the International Monetary Fund explored the outlook for financial markets and challenges for policymakers. In his opinion, risks to financial stability have intensified since October 2008. General macroeconomic as well as credit risks have risen, spreading in particular to emerging markets. Although market functioning toward the end of 2008 improved in a number of asset classes with extensive government support, the negative interaction between the real economy and the financial sector has intensified due to the credit crunch that extends globally. The recent shock to bank earnings and the global economic slowdown has put further downward pressure on bank equity prices and bank systemic risks are at the most elevated levels of the crisis. In spite of government interventions, many banks, as already mentioned by Hans-Werner Sinn, need to raise significant additional capital to overcome a deep global economic downturn.

Due to the increasing size and amount of write-offs borne by financial institutions, accompanied by continuing funding pressure, policymakers are facing considerable challenges in dealing with the crisis. In addition, the lack of credit intermediation and confidence has barred financial institutions from attracting private investors. Not only the banking system

but also the insurance companies and pension funds have been hit severely on the asset side. Especially in Britain and the United States the pension crisis is a major problem that is looming.

So far, banks have managed to obtain sufficient capital to offset existing write-downs, but funds have come increasingly from the public sector. Due to the worsening credit conditions, estimates of potential financial sector write-offs on US assets rose from 1.4 trillion US dollars in October 2008 to 2.2 trillion US dollars in January 2009. But expected losses will continue to rise and banks will need even more capital. According to the IMF estimates, expected write-downs of European and US banks during 2009 and 2010 could result in a net capital shortfall of at least half a trillion US dollars. Hedge funds and mutual funds have also been hit badly with losses and heavy redemptions. Only during the last quarter of 2008, hedge fund assets halved in value.

The impact on emerging markets has been enormous. Syndicated lending to emerging markets has declined more than half from the second quarter of 2008 to first quarter of 2009 and bond financing has contracted by two-thirds in the same period. Deterioration in asset quality in emerging Europe may, in turn, be transmitted back to several banking systems in Western Europe.

Bertuch-Samuels concluded his speech addressing the challenges for policymakers. The IMF calls for a three-pronged approach to resolve the crisis: (1) the provision of adequate liquidity and term-funding support from central banks, (2) the recapitalization of viable financial institutions, and (3) measures to address problem assets. To be effective the financial policies need to be comprehensive and internationally coordinated. Most important – according to Bertuch-Samuels – is a comprehensive and coordinated approach framed in a strategy with the following elements:

- More emphasis on recapitalization and measures to deal with distressed assets. A “bad bank” could be one element.
- Short-run policies need to be consistent with a long-run vision for a more resilient financial system.
- Rules governing procedures should be clear and comprehensive.
- International cooperation should receive high priority.

Is the end of global crisis foreseeable?

When will the world recover from the global crisis, was the question tackled by *Jim O’Neill,* Head of Global Economics, Commodities and Strategy Research for Goldman Sachs in London. After the collapse of Lehman Brothers, a crisis indicator was developed by Goldman Sachs to measure the evolution of the crisis in the financial system. Goldman Sachs looked at money and credit market variables and created an index out of four variables, among them the spread between mortgage and government repay and the ratio of money market deposits compared to equity markets. This index reacted dramatically during the breakdown of Lehman Brothers. O’Neill underlined that he is not yet sure if the index has any forward-looking capabilities, but it would suggest that there are some grounds for optimism.

He believes that many policymakers are too pessimistic. In his opinion, trend growth, both upwards and downwards, does not change as much as everybody claims. From 2004 through to 2008 trend growth was not rising, as many economists assumed. The cycle growth was going above the trend. He is confident that the world growth trend is still between 3 and 3.5 percent, and the average world growth rate of the past 25 years is about 3.2 percent. Due to a growth rate of 5 percent in the past four years, many investors and economists believed that the world’s growth trend had risen to 5 percent, but this never really was the case. According to O’Neill it is close to 3 percent. Following his view, the absence of finance from over-leveraged Western banks does not mean the end of the world growth trend. What is most important for restarting growth again is confidence in the financial system. Furthermore, the global inventory shredding must be stopped and an offensive monetary and fiscal policy stimulus should be applied to support consumers. As to when the world economy will recover, Goldman Sachs sees for the first time in nearly two years some indication that the US consumption may stabilize in the second half of this year.

Specific aspects for transition economies

In the second panel the financial market and economic situation of various regions of the world were presented. *Jeromin Zettelmeyer,* Director for Policy Studies at the European Bank for Reconstruction

and Development (EBRD) started with an overview of the challenges and prospects in Eastern Europe and Central Asia. Unlike the advanced countries, the transition economies barely felt the crisis in the first half of 2008. At that time the Central European Economies still experienced GDP and credit growth. But the crisis hit hard in the beginning of October 2008. As a consequence, the costs of external financing went up and commodity prices weakened sharply. Economic activity contracted unexpectedly rapidly. By November 2008 most countries of the CEE region experienced sharp drops in industrial production, a weakening domestic credit growth, a decline in capital inflows and inward FDI. Russia, for instance, suffered a 16 percent decline in industrial production in mid-February 2009 compared to January 2008.

In the past few months the global outlook has deteriorated further and a recovery in the international financial markets is not expected until 2010. Therefore, in January 2009, the EBRD forecast for emerging Europe and Central Asia an average growth of about zero for this year, with significant downside risks. In general the EBRD has predicted stagnation for these countries. Yet, a significant cross-country heterogeneity is expected. Less economically integrated countries like those in Central Asia will experience a much lower but still positive growth. A recession is likely to occur in most better-integrated countries as well as in some commodity-dependent countries. Twin currency and full-fledged banking crisis have not appeared yet in any of the countries, but some countries are extremely close to it. Such an event could provoke a major distortion of these countries' economic development.

What are the domestic policy challenges? As for the financial sector policies, Zettelmeyer states that the main focus should lie on the stabilization of the core banking system. This includes the maintenance of a credit deposit insurance scheme as well as to combine liquidity support with a framework for orderly consolidation or liquidation of non-viable, non-systemic institutions. In some countries refinancing of foreign currency debt and recapitalization will be necessary. Concerning the monetary and fiscal policies there is no one-size-fits-all policy. Whether a country is able to afford expansionary fiscal and monetary policies or not depends on factors such as the strength of the public balance sheet, the credibility of monetary and fiscal institutions, the currency composition of debt, domestic inflation dynamics and external and public financing constraints.

Due to external financing constraints and exchange rate pressures, the scope for domestic policy action has become very limited in the last few months. Again, this is why a decisive and coordinated international policy response is indispensable. To help the Central and Eastern European Countries (CEE), Western Europe has to respond with the following instruments:

- Non-discriminatory domestic crisis response packages in the West, because if Western European countries help themselves it is good for the CEE but only as long as aid packages do not discriminate across borders, e.g. by requiring businesses to produce domestically.
- Refinance and, if needed, recapitalize CEE banking systems; some support can be provided by multilateral development banks, but the most support must come from parent banks and their home governments.
- A strong direct role of European institutions; the European Commission can help coordinate national governments and the ECB can provide targeted Euro liquidity support outside the Eurozone.
- Scaling up of the crisis funds at the disposal of the European Commission and the IMF.

A common initiative in support of CEE banking systems was already announced in February 2009 by the EBRD, the European Investment Bank and the World Bank Group with support from the IMF and the European Commission – the so called "Joint IFI Action Plan". The core elements of this initiative are:

- a common needs assessment, both at the level of CEE banking systems and at the international bank group level,
- a coordinated approach to refinancing and recapitalization, with burden sharing across IFIs, home and host countries, and parent banks, and
- a contribution to the CEE banks amounting to 25 billion euros.

Lastly Zettelmeyer pointed out the opportunities the crisis can offer. Crises sometimes spur reforms and make it possible to improve governance and the structure of financial sectors, especially in economies with weak and relatively large domestic banking sys-

tems. In addition, the crisis could help improve and integrate the European financial architecture.

What about China?

China, a country which many experts, at least until the fall of 2008, felt would successfully avoid the global financial crisis, was then examined by *Sonja Opper,* Professor of International Economics at Lund University in Sweden. She observed that this optimism soon weakened. But has the dragon really been brought to its knees?

Since the fourth quarter of 2008, export and growth rates in China declined rapidly. In December 2008 export growth was down to 2.8 percent. Considering an export dependence of 40 percent of GDP, which is comparable with Germany and Korea, this is clearly a real threat. However, China's export decline is not only a domestic problem. Around 60 percent of China's exports originate from foreign funded firms operating in China. Consequently, the effect of the crisis will vary greatly across export commodity groups. Whereas technical commodities like TV sets and cameras experienced an extreme decline in October 2008, the export of clothing or textiles increased. Due to shrinking domestic spending, imports are currently declining fast, too. But the import decline can still offset the decline in export growth, so that China's overall trade surplus remains largely unaffected. In addition, China's domestic demand has not yet fallen off. On the contrary, retail sales increased by 21 percent in 2008. But the strong domestic demand has not been able to stop the dramatic slowdown of industrial production, which grew as little as 4.8 percent in December 2008.

The global crisis also poses a social challenge for China. In the first quarter of 2009, the official "urban" unemployment rate increased up to 5 percent. Pessimists also forecast lay-offs of rural migrant workers between 20 to 50 million. Based on these assumptions, China could face a social crisis, but luckily most rural migrants have family farms to fall back on.

How can China respond to the financial crisis? With foreign-exchange reserves of 1.95 trillion US dollars by the end of 2008, a budget surplus of 1 to 2 percent of GDP and a total public sector debt of a moderate 20 percent of GDP, China has optimal preconditions to respond to the crisis. In addition the government can rely on a state-controlled banking system to increase lending in investment projects.

Already in November 2008, China responded to the global crisis: the government announced an economic rescue package of 585 billion US dollars. To a large extent, this package will be used for the modernization of the infrastructure. In addition, the package will help returning migrant workers who wish to start up their own businesses, as well as for job training programs. A sum of 125 billion US dollars of the package will go to social welfare expenditures and tax reductions.

Despite these measures, the general business outlook is still affected by the crisis. And, although China's policy response was very fast and financially broad, critics point out that the efforts to support domestic demand are insufficient. Since 2000, domestic demand has experienced a rapid decrease as a share of GDP, due to lagging wage increases and high saving rates as a result of the weak social welfare system. To overcome the crisis, China still has much homework to do. It has to boost domestic consumption by improving property rights security to avoid easy expropriation of land owners. Furthermore, the social safety net and education funds need to be extended to stimulate domestic demand.

In conclusion, Opper predicted that the current crisis will be broader in scope and deeper in impact than the Asian financial crisis. Due to China's financially and institutionally favourable situation, however, the outlook is slightly optimistic. The current adjustment problems, whether it is the weak domestic demand or the country's strong export dependence, have been problems for China's policy for several years now. But if China uses the current crisis to speed up necessary reforms, "then we might see the Dragon re-emerging from this crisis stronger than it was before".

Effects of current crisis on major industries

Real estate sector

Tobias Just, Head of Sector and Real Estate Research at Deutsche Bank Research, started the second day of the conference by presenting the situation in the real estate sector. Regarding house prices, the US real estate market reached – after a long boom – its peak at the end of 2006. Since then, house

prices have fallen by about 20 percent and housing-starts have declined by more than 50 percent. Not only the US real estate market but also the real estate markets particularly in Ireland, Spain, Britain and now also in Eastern Europe have collapsed. The overall slowdown in economic activity has had negative effects on commercial real estate markets. In 2008 alone, the overall transaction volume on the European real estate investment markets decreased by over 50 percent.

However, not all countries are affected the same way. Especially Spain and Ireland had too much new construction in the years before 2008. In the last few years the supply of new housing units in Spain exceeded the number of new households by 300,000 units per year. In Ireland, 90,000 new homes were built, although it is a country of only 4 million residents. On the contrary Britain, France and foremost Germany, which is currently producing 180,000 housing units a year, do not have such a new-housing oversupply and will therefore be less affected. Another important fact is that especially in Spain, Ireland and Britain commercial property prices were at a very high level in 2007. The drop in prices for office and industrial properties is now heightening the pressure from the housing market. Also the recession results in more vacancies and significantly lower office rents as well as less demand for new housing. Regarding office rents in European cities, Tobias Just expects a drop of up to more than 20 percent from peak to trough – in Britain, Ireland, Spain and some Eastern European countries the drop will be even significantly larger.

When will the real estate markets bottom out? According to Just, the US housing markets will bottom out within a year. In Europe, in contrast, there will be a prolongation for at least a year, varying for each country. Especially with the strong correction in Spain and Ireland, it will take at least 3 or 4 more years for housing, as well as the commercial real estate markets, to bottom out, construction will stay muted and house prices will fall further. Germany will not be affected to the same extent, however. With a current production of 180,000 housing units, Germany has merely a problem from the demand side caused by the decline in disposable incomes. Germany, however, is confronted with a supply-side corrective. If the economy stays in recession in 2010, Germany will also face declining house prices, because the income variable will then become more important and people will start to move due to rising and persistent unemployment. But even in this downside scenario, Tobias Just only expects a moderate decline of about 2.5 percent for 2010; regional differences, though, will remain pronounced. Hence, considering rental yields, Germany would still have a positive total return from real estate, which, in times of crisis, is good news.

Oil industry

The oil industry has also been greatly affected by the global crisis, as demonstrated by *Enno Harks,* Political Adviser for BP Germany. The six years of boom from 2003 to July 2008 turned to a bust phase for the oil industry and the price of oil. Demand, the prime driver of the price increase, which peaked at 147 $/bbl, weakened, causing the oil price to collapse. The lower income and lower industrial production in the recession has had a direct impact on the demand for private and industrial transportation and petrochemical feed-stocks; further price elasticity of demand proved surprisingly high in 2008. Consequently, global oil demand fell in 2008. Due to lower demand, energy prices have fallen in the short term but could increase in the medium term if investment recovers too slowly to meet demand during an economic recovery. With regard to the environmental impact, this could lead to lower emissions in the short term, but reduced investments in low-carbon energy could lead to higher emissions in the long term. The near-term oil demand expectations are very difficult to gauge, but it is conceivable that over the next three to six months oil demand will recede even more, as imploding chemical and petrochemical industries show no sign of immediate recovery. Likewise, industrial road and air transportation are heavily dependent on GDP growth: another oil price cannot be ruled out in a prolonged recession. However, oil price scenarios are also heavily dependent on the extent to which OPEC's quotas are met, and currently they seem to be surprisingly effective.

A big concern for a medium-term oil supply in Europe, Enno Harks observed, is the decline in Russian oil output in 2008, which is set to continue in 2009. Most of the reduction is due to the high taxes in Russia, both on exports and on extraction. In the last quarter of 2008 most oil companies exported at a negative profit. This was not due to resource problems but mainly because of the tax system in Russia.

While the government has brought the export tax more in line with market reality, the so-called mineral extraction tax hampers investment in new oil fields – risking production declines in the long run. Obviously, in a crisis, when the Russian government is in need of revenues, any reform of the tax system becomes more difficult.

Investment cycles in the oil market, Harks pointed out, are very different from those in other industries, owing to the fact that only 15 percent of global oil production originates from (western) private/listed companies, the so-called international oil companies (IOC), the rest being produced by state-held national oil companies (NOC). For the latter, investments in upstream projects depends on many variables: societal needs for the generated oil revenues, policies to avoid resource downsides, a national optimal depletion path, OPEC quota obligations, etc., they depend only to a lesser extent on the market balance or the price. A lower reaction profile to the current recession can thus be expected. At the same time, privately held companies show reductions in their 2009 investment planning, albeit at differing degrees. While among the IOCs, the oil majors peer group are holding steady or slightly decreasing their investment portfolio, the small and mid-caps are strongly reducing their investment budgets.

Chemical industry

With 29.5 percent of total sales, the EU is a key player in the world chemical industry. But the global financial crisis has seriously affected the EU chemical industry as well, as *Igor Magdalenic,* Senior Advisor for Essenscia, the Belgian Federation of Chemical and Life Sciences Industry, pointed out in his presentation. In December 2008 the confidence climate index in the chemical industry reached its lowest level since January 1991. In 2008, for the first time since 2003, production of chemicals (excluding pharmaceuticals) declined. In October 2008, output in the EU chemical industry (excluding pharmaceuticals) dropped by 6.3 percent compared to the previous year. Almost all of the key industrial consumers of chemicals have landed in recession, generating less demand for chemical products. Figures of capacity production utilized by chemical companies suggests a rapid fall in production: in the beginning of 2009 chemical industries operated only at 77 percent of their capacity, compared to 81.5 percent in the last quarter of 2008 and to 82 percent as the long-term average level.

Concerning the outlook for the chemical industry, Igor Magdalenic expects a bottoming out not before the third or fourth quarter of 2009 and a slight recovery in 2010. No major improvement is expected before 2011. Overall, over the next 15 years a growth of 1.6 percent per year is expected for the European chemical industry (excluding pharmaceuticals). However, the development of the last ten years shows that the EU has continually lost ground against the emerging countries such as China and India. Europe's share of global output has declined from 32.2 percent in 1997 to 29.5 percent in 2007. The European chemical industry is also at a disadvantage concerning the high costs for energy, labour force and feedstock. But the EU chemical industry has also widened its competitive edge with a high pace in innovation accompanied by a qualified workforce. The challenge for the European chemical industry is to prevail against emerging competitors, improve access to international markets, employ energy policies that take into account the needs of energy intensive industries and to work for a reduction of the regulatory burden.

Engineering industry

The business situation in the engineering industry was presented by *Anders Rune,* Chief Economist at the Association of Swedish Engineering Industries in Stockholm. As expected the economic situation for the European engineering industry, which mainly includes metal goods (30 percent), machinery (35 percent) and electrical machinery (15 percent) does not look any better than other industries. The business cycle in this industry is more pronounced than that of other manufacturing industries: compared with the level in 2005 the production of the European engineering industry grew by nearly a quarter until mid-2008. In the second half of last year new order bookings abruptly started to plummet and the breakdown did not lose momentum until the first quarter of 2009. In other words, production contracted already in the last quarter of 2008, although the annual production of the European engineering industry recorded a slight increase in production for the year as a whole. The decline of production has, however, continued in early 2009, while the capacity utilization has reached record lows. It is expected that, on average for 2009, production will shrink at a double digit rate as compared with the preceding year. The expectations for 2010 are bleak for the engineering industry. Even if there is a recovery in

new orders, it will take some time until production gets under way.

Automotive industry

The automotive industry has been hit by its worst crisis since 1945. The current situation and the outlook were presented by *Christophe Chabert,* who is responsible for strategy and business development at Renault headquarters in France. In February 2009, the Japanese automobile market had its seventh negative month, which is the biggest drop in 35 years. In the same month, the US automobile market was at its lowest level since 1982. Europe as a whole experienced a decline in new car sales of almost 20 percent in February 2009. Spain had a downturn of almost 50 percent, whereas Germany had an increase of more than 20 percent, primarily induced by a massive car-scrapping scheme. Western European car production, which ranged between 14 and 16 million from January 1990 to January 2008, dropped sharply down to 10 million cars at the beginning of 2009.

The automotive industry is now "under fire". There are rapidly deteriorating markets in both advanced and emerging countries with a global shrinkage of the total industry volume. The industry also currently faces external and internal pressures. Environmental regulations and pressure on households' disposable incomes can be characterized as the external pressures; the supply chain optimization (e.g. inventories and shut-downs) are the internal pressures.

In many countries, public automotive schemes have already been implemented, for example national CO_2-based "bonus-malus"-type regulations and state grants (including loans on preferential terms, loan guarantees and other government guarantees), but these remain highly uncoordinated. According to Chabert, sales are still declining in Europe and there is no sign of consolidation. Throughout Europe there is an average annual production capacity of 11 to 12 million cars. In order to be profitable, the car industry needs a utilization rate of at least 80 to 85 percent. The average utilization rate in Europe is now below 65 percent. Since this is just an average, the rates of some car makers are even lower than 50 or 40 percent.

The future recovery, Chabert observed, will not only be about new products and services. It is also about new business models and reconceiving the value chains between the different actors of the industry. And even though the figures are frightening, the future of the automotive industry could be bright, because people will still need individual mobility. In addition, climate change and CO_2 regulations offer a great opportunity to benefit from new technology and there is still room for an improving the classic thermal internal combustion engine technology.

Electronics

The last industry on the second day of the conference was the electronic industry analyzed by *David Enu,* Senior Consultant of DECISION in Paris. The electronic industry, with total sales of 1,138 billion euros in 2008, is a crucial industry, since most other manufacturing and service industries need its products as drivers for innovation and productivity. Together with China (with 27 percent), Europe (with 21 percent) enjoys a leading position in world electronic production.

Since 2000 the electronic "mass" market has grown strongly. It represents about 50 percent of the industry value and includes consumer goods that are manufactured in millions of units. Between 2001 and 2006 its volume tripled to 800 million. Now we have passed the 1 billion unit mark. By 2012 further growth of up to 3.5 billion units is expected, in spite of the current disruption induced by the financial and economic crisis.

From the 1970s until the 1990s, electronic equipment was largely produced for government and enterprises. Nowadays, the electronic industry has new driving forces: the individuals and social needs, which includes power efficiency, health and comfort and security. The electronic industry is characterized by a high pace of innovation. Especially the semiconductors industry followed an upward trend with an average annual growth rate of around 11 percent between 1963 and 2007. Thanks to massive R&D expenditures, electronics has permanently penetrated new application areas. However, the European share of the global semiconductors production dropped from 15 to 11 percent between 2000 and 2007.

As all other industries, the current economic instability is causing major uncertainties in the electronic industry. To demonstrate the impact of the crisis, David Enu presented some medium-term scenarios.

Assuming that there had not been a global crisis the growth rate for 2009 and 2010 was estimated at 5.0 and 5.5 percent respectively. An average annual growth rate of 6.1 percent was calculated up to 2012. The scenario "crisis and a fast recovery (in the fourth quarter of 2009)" would result in an average medium-term growth rate of 3.1 percent. The most pessimistic scenario "crisis and slow recovery (in the fourth quarter of 2010)" would result in an average growth rate of 1.2 percent. For the less-likely fast recovery forecast, the electronic market in important regions is as follows: for Europe the market will stagnate in the period from 2007 to 2012 and not grow at an average annual rate of 3.1 percent as in 2003 to 2007. Enu reckons with an average growth rate of 5.6 percent for China and 3.1 percent for the world. The respective figures for the preceding period were 15.8 and 7 percent, respectively.