

# **EU Manufacturing Industry: What are the Challenges and Opportunities for the Coming Years?**



**First tentative findings  
of a sector-specific analysis  
carried out in DG Enterprise and Industry**

**26<sup>th</sup> April 2010**

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**The aim of this paper is to provide a basis for discussion and development of the industrial policy initiatives that will be put forward as a “new industrial policy” in the context of Europe 2020** in the course of 2010. It is based on on-going analysis and monitoring by the EU Commission<sup>1</sup> and initial discussions with different industrial sectors through DG Enterprise and Industry’s extensive network of sectoral units. **This is not an official Commission publication.**

The paper is not intended to pre-empt further policy discussions, but rather it attempts to make a preliminary identification of the drivers and barriers which affect the competitiveness of industry in Europe, and the policy levers which can have an impact on the growth and job creation potential of industry. It is based on an analysis undertaken within DG ENTR on the strengths and weaknesses of individual sectors of manufacturing industry and related up- and downstream elements of the value chain at the NACE 2-digit and (where appropriate) at the NACE 3-digit level.

The Conference on the 26<sup>th</sup> April, and discussions with stakeholders in the coming months, will help to put forward an adequate response to the key issues and challenges facing industry in Europe.

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<sup>1</sup> See “EU Industrial Structure 2009: Performance and Competitiveness”, the “Sectoral Overview 2009” and the “Monthly reports on the impact of the economic crisis” available on [http://ec.europa.eu/enterprise/policies/industrial-competitiveness/documents/index\\_en.htm#monthly\\_notes](http://ec.europa.eu/enterprise/policies/industrial-competitiveness/documents/index_en.htm#monthly_notes).

## 1. THE CHANGING FACE OF INDUSTRY IN EUROPE

**EU industry has changed radically over the last 10-15 years**, not only in the new Member States, but also in EU15. It has seen high productivity and strong innovation, a considerable reorientation of its workforce and capital investment, the development of new products for new and emerging markets, and a major improvement in its environmental performance.

**It is unquestionable that manufacturing remains vitally important for the EU economy.** Before the present economic crisis, it contributed some 17.1% of GDP and accounted for some 22 million jobs (2007). However, the **industrial base** in Europe stretches far beyond the industrial core of manufacturing and represents a far greater share of the economy than these basic statistics imply. When the wider productive sector is factored in (power generation, construction) along with the associated business services the share of GDP is about 37%. Taking an even wider perspective, and accounting for the share of other market services on which industry depends and which depend on industry (transport, communications, financial services, real estate etc.), the “servo-industrial economy” accounts for close to half of GDP (ca. 47%).

**Manufacturing productivity is the motor driving EU wealth creation.** There has been a **massive increase in manufacturing labour productivity** by some 46% over 1995-2007 compared with economy-wide productivity growth of less than 20% over the same period. This productivity performance has been achieved through process and product innovation, and outsourcing of non-core manufacturing business activities (e.g. logistics, facility management, ICT) and an increasing use of a better qualified industrial workforce. The improvement in labour productivity is often matched by a significant improvement in the energy-efficiency of production over the past two decades, especially in energy-intensive sectors. Whilst output and labour productivity have increased, direct employment in manufacturing has continued to decline and there

is no indication that this trend will be reversed. Dynamic industrial growth is expected, however, to lead to wealth creation and a stabilisation of employment in the manufacturing sector while at the same time stimulating further employment growth in the business-related services sectors.

**Globalisation and the integration of the emerging market countries into the world economy have offered new markets for the European industry.** EU exports have expanded by 4.7% p.a. over 2000-2008, substantially faster than the growth of industrial production. Despite intensified international competition, the **European trade performance has held up notably well compared to the US and the Japanese performance.** In some sectors, and despite the appearance of new major global players such as China, the EU increased its share of world exports between 1996 and 2006, notably in chemicals, pharmaceuticals, and motor vehicles. In other sectors, the EU has better resisted the challenge of China than the US and Japan, particularly in metal products and electrical machinery. Further reciprocal trade liberalisation and the maintenance and improvement of its international competitiveness will remain essential for the European industry to be able to benefit from the further substantial expected growth in the emerging market economies, especially in Asia, Russia and Latin America.

**The process of globalisation has increasingly resulted in tightly interlinked international value chains.** As a result of the massive fall in both costs for transport (e.g. containers) and communication (ICT) and of transaction costs and risks traditionally associated with doing business across borders, previously integrated industrial operations have been sliced up into highly complex smaller manufacturing and service packages and have to some extent been geographically redistributed across continents. This trend towards a more intensive intra-sectoral (as opposed to an inter-sectoral) division of labour, both at the national and at the international level has led to a reorganisation and fragmentation of product and services value chains. This has shifted the role of the final producer, whose performance increasingly depends on the performance of upstream businesses, including those located outside the EU. This applies not only to manufacturing and

assembly operations, but also to previously internal service functions. The traditional view that treats industrial sectors as homogeneous, independent and national thus no longer seems to be an adequate basis for policy development. Excellence at all levels has become much more important and increasingly suppliers and innovation partners from different sectors, regions and with complementary competence are

needed. Clusters of mutually reinforcing industries and international cooperation have thus been increasingly attracting the attention of policy-makers. Moreover, the process of globalisation has exposed numerous subsectors much more to exchange-rate volatility, especially for those industries that mainly compete on costs as opposed to quality or service.

**Table 1: Value-added, employment and labour productivity in the EU-27**

NACE	Sector	Recent overview		Recent evolution		
		Value added breakdown 2007	Employment breakdown 2007	Labour productivity growth (1995–2007)	Value added growth (1995–2007)	Employment growth (1995–2007)
		in %	in %	in %	in %	in %
A	Agriculture, hunting and forestry	1.8	5.7	2.8	0.7	-2.0
B	Fishing	0.1	0.1	-0.3	-1.7	-1.4
C	Mining and quarrying	0.8	0.4	-0.1	-3.9	-3.9
D	Manufacturing	17.1	16.4	3.2	2.7	-0.5
DA	Food products; beverages and tobacco	2.0	2.3	1.3	1.1	-0.2
DB	Textiles and textile products	0.6	1.3	1.5	-1.2	-2.7
DC	Leather and leather products	0.1	0.2	0.0	-3.4	-3.4
DD	Wood and wood products	0.4	0.6	2.2	1.4	-0.8
DE	Pulp, paper and paper products; publishing and printing	1.4	1.2	2.5	1.5	-0.9
DF	Coke, refined petroleum products and nuclear fuel	0.4	0.1	2.5	0.4	-2.0
DG	Chemicals, chemical products and man-made fibres	1.8	0.8	5.2	4.2	-1.0
DH	Rubber and plastic products	0.8	0.8	2.3	2.9	0.6
DI	Other non-metallic mineral products	0.8	0.7	2.9	1.9	-1.0
DJ	Basic metals and fabricated metal products	2.5	2.4	2.5	2.7	0.2
DK	Machinery and equipment n.e.c.	2.0	1.8	2.9	2.5	-0.4
DL	Electrical and optical equipment	2.0	1.7	6.8	6.5	-0.3
DM	Transport equipment	1.8	1.4	2.4	3.0	0.6
DN	Manufacturing n.e.c.	0.7	1.0	1.9	1.7	-0.2
E	Electricity, gas and water supply	2.2	0.8	2.0	0.5	-1.5
F	Construction	6.5	7.4	-0.1	1.3	1.5
G	Wholesale and retail trade; repair of motor vehicles	11.3	15.0	1.3	2.6	1.3
H	Hotels and restaurants	2.9	4.5	-0.2	2.3	2.5
I	Transport, storage and communication	7.0	5.8	3.3	4.0	0.7
J	Financial intermediation	5.5	2.8	2.7	3.5	0.8
K	Real estate, renting and business activities	22.5	12.3	-1.0	3.4	4.5
L	Public administration and defence	6.1	6.6	0.3	0.9	0.6
M	Education	5.0	6.8	-0.2	0.9	1.2
N	Health and social work	6.9	9.2	0.3	2.1	1.8
O	Other community, social, personal service activities	3.9	4.5	0.1	2.3	2.2
TOTAL		100.0	100.0	1.4	2.5	1.0

Source: EU Industrial Structure 2009

**This process is also reflected in foreign direct investment and the high level of merger and acquisition activities**, transforming the scope and geographical distribution of many of the major industries, e.g. chemicals, pharmaceuticals, and steel. These restructuring efforts have triggered economies of scale and the exit of smaller players, while at the same time global markets have become wider and more competitive.

**The impact of the economic crisis on industry has been severe** with manufacturing output falling by around 20% and recovering as yet only slowly (by about 4% since the trough). However, in some industries labour-market adjustment has worked somewhat differently from earlier recessions, namely through the increased use of short-term working and labour hoarding. This emphasises the increased importance of a highly-skilled labour force to production and the conviction that the severity of the recession will be relatively short-lived. Nevertheless, labour market reactions have differed greatly between sectors and across countries.

Whilst it remains true that some sectors experience particular problems mainly triggered by structural excess capacities built up before the bursting of the financial market bubble in 2007/8, the stocktaking exercise of DG ENTR on which this note is based tentatively shows (as illustrated in Annexes 1 and 2) that **the most significant issues for industry today are common to many sectors:**

- the need to benefit from the opportunities of new **international markets** and respond to intensified global competition;
  - the key role of the **Single Market** and **better regulation**;
  - the importance of **technology and innovation** and in particular of key new technologies and ICT;
  - the need to improve **energy and resource efficiency** and to make the **transition to a low carbon economy**;
  - the importance of the **supply of raw materials**;
  - the need to **manage restructuring** and ensure **adequate access to finance**;
- the **shortage of adequate skills** in the workforce and the need to ensure **skill transitions** from professions with declining demands to emerging ones;
  - the increased role of **business services**;
  - the importance of a **favourable entrepreneurial and business environment**, especially for SMEs;
  - the need to respond to the emerging societal challenges such as **demographic change** and the requirements of **improved health and security measures**.

## **2. IMPACT OF THE ECONOMIC CRISIS AND SHORT-TERM OUTLOOK**

The impact of the financial and economic crisis on manufacturing industry has been severe with industrial output initially falling by around 20%, followed by a recovery in the second half of last year. The economic crisis in Europe was propagated through a steep reduction in investment and international demand, accompanied by a swift rundown in inventories. The impact on manufacturing employment has also been serious with a decline in the number of jobs by some 9.9% in the fourth quarter 2009 compared to the peak of employment in the third quarter of 2008. Overall hours worked have fallen somewhat more, through the extensive use of short-term working in a number of industrial sectors, particularly in motor vehicles, engineering, basic metals, and the paper and paper products. The overall rather modest labour-market reaction leading to a fall in productivity seems to indicate that enterprises expect a relatively swift recovery from the initial severity of the recession.

The current economic situation varies significantly across manufacturing sectors, also taking into account future perspectives for growth and challenges ahead. Generally speaking, though, there are some patterns and commonalities that allow grouping the sectors on the basis of their current situation.

The output of the technology-intensive investment goods, such as **mechanical and electrical engineering and ICT**, has fallen substantially as a consequence of the downturn with output initially falling some 20-30% below

its peak. The reduction was steep due to their relatively dependency on the investment cycle of their clients which turned into investment freeze in the wake of the threatening meltdown of the global financial system in late 2008, but also reflects relatively dynamic growth in output immediately preceding the economic crisis. Output in these sectors has begun to recover in the second half of 2009. According to surveys, capacity usage in these industries in the fourth quarter of 2009 was some 10-20% below average capacity utilization rates. On the whole, these sectors do not appear to have been characterized by serious structural difficulties such as excessive or structural overcapacities. These industries are crucial to the longer term growth prospects of the EU economy and should recover once more normal investment patterns reassert themselves. They play a crucial role in promoting technological advances, the shift towards a low-carbon economy, the further automation of production processes and the digitalization of the economy. They are thus potential drivers for the recovery. However, growth prospects are poorer in some subsectors, especially those directly supplying components to the motor vehicle industry. Firms in these subsectors might need to refocus and diversify their activities, following the current recession and future restructuring of car industry.

The situation of the **automotive sector** is somewhat special. The sector initially faced a 40% collapse in output, before the implementation at national level of scrapping schemes helped stabilize consumer demand. Output however is still some 25% below its peak and there is evidence of serious overcapacity. According to producer confidence surveys, capacity usage in the fourth quarter of 2009 was still some 25% below average capacity utilization rates. Moreover demand is increasingly shifting towards more fuel efficient vehicles and vehicles with alternative power trains. Whilst anti-crisis policy measures targeted at the motor vehicle industry have alleviated the initial scale of contraction in the passenger-car segment, they also have tended to bring forward sales rather than stimulating increased or new demands. The issue of further restructuring in favour of more fuel-efficient vehicles and vehicles with alternative power trains still needs to be faced. Existing capacities thus feature significant structural weaknesses. Whereas most attention has been given to the

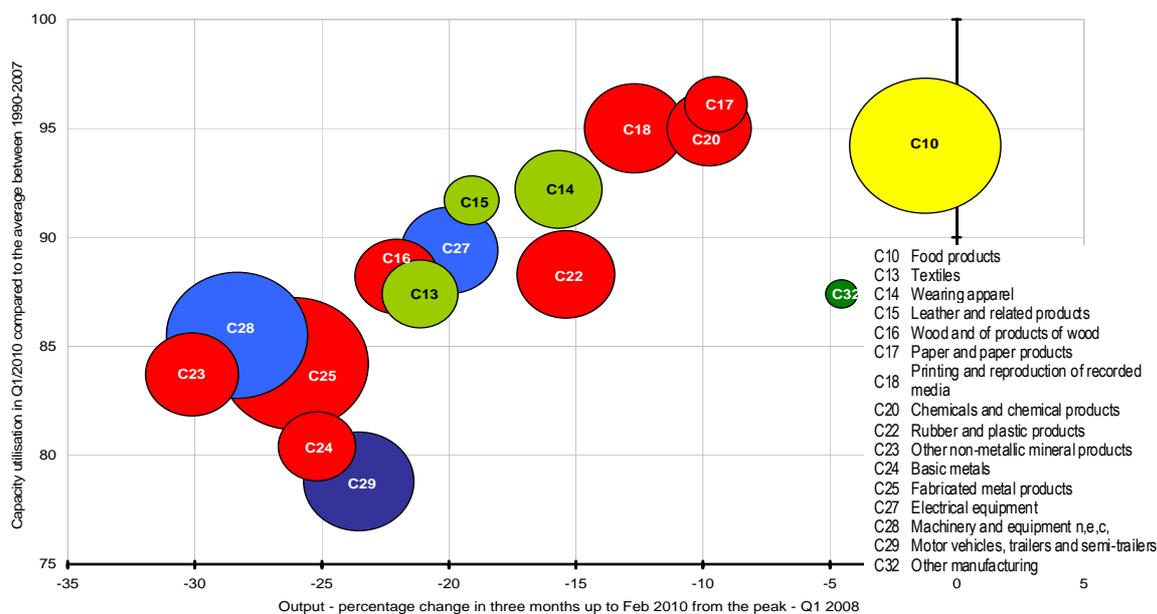
large passenger car manufacturers themselves, heavy-goods vehicle producers, suppliers and smaller firms are facing the most difficulty. There is also a risk that the widely used short-time working schemes and labour hoarding in automotive industry and its upstream suppliers could require further employment adjustments. Growing competition from third countries producing cheaper cars and limited access to emerging markets are key issues as well. The need to continually improve the environmental, energy and (active) safety performance of vehicles leads to both new challenges and new opportunities for the sector.

There are, however, a number of sectors that are relatively non-cyclical, notably **food and beverages and pharmaceuticals**. The current crisis has not significantly worsened the picture in these sectors and in the case of the pharmaceuticals the long term growth trend has been maintained. Reductions of employment in these sectors seem to have been limited. A key concern for these sectors however, is the impact of limited access to finance, in particular for small firms in the biotech and other high-technology industries. Furthermore the activities of national governments to curtail expenditure on pharmaceuticals which have become even more urging due to the worsening budgetary situation may have negative long-term ramifications for the healthcare industries' performance. In common with other sectors, continued innovation is crucial for the EU to be able to defend its market share in global markets.

Some sectors respond to economic cycles with a substantial time lag. For the time being, the crisis has mainly affected the order books of **shipbuilders** and to a lesser extent the production of ships. In the longer term, the shipbuilding sector will have to deal with huge global overcapacities and fiercer competition from Asian shipyards that might enter the niche and specialty markets currently occupied and dominated by European companies. In the case of **aeronautics**, order books have fallen, but global demand is expected to grow once the crisis is over and the sales should recover. In the meantime, it is important that production levels can be kept stable to avoid layoffs and a brain drain of highly-qualified experts. The **space and defence** industries, on the other hand, are highly dependent on public spending. Although the impact of the recession has been limited so far,

the tremendous consolidation needs of public finances might significantly reduce public and pre-commercial procurements and investments in R&D that both are vital for the competitiveness of these sectors.

**Chart 1: Impact of the crisis on output and capacity utilisation**



Source: EURSTAT and ECFIN Business Confidence Survey

The intermediate goods sectors, notably **wood, paper and paper products, chemicals, metals, and non-metallic mineral products** have also been significantly affected by the crisis. Facing a severe contraction in final demand and surging uncertainty triggered by the crisis on global financial markets, downstream industries quickly moved to eliminate stocks of intermediate goods, resulting in some very large initial reductions in demand and output for these sectors. At one point in the economic crisis, output of basic metals had contracted by some 35% and chemicals by some 20%. However, these industries have also experienced high cyclicality in previous downturns, and they are highly capital intensive. Employment has fallen by much less than output, mainly due to the extensive use of short-term working and some significant labour hoarding in the eve of a hoped-for quick recovery to old output levels. Indeed, some subsectors have already seen major recoveries in output compared to the trough: basic metals output is now some 27% below its peak, whilst output in chemicals is just 10% below its peak. Whilst recovery to pre-crisis output levels might take some time, many of

these industries had already extensively restructured in the past. This should enable them to return to stable growth already in the short-run. Longer-term factors such as globalization, technological progress and affordable access to energy and raw materials will to a large extent determine the future competitiveness of these industries, as will cumulating costly environmental and safety regulation.

Finally, a number of sectors, notably **textiles, clothing, leather, and furniture**, had been undergoing restructuring and downsizing already before the crisis. While output initially contracted by some 15 to 22%, some recovery has recently been experienced. These sectors have experienced the most severe employment adjustments, since the recent downturn has tended to reinforce the longer-term contraction of output. Future growth for these sectors lies in specialization in more technologically advanced niche markets and requires further modernization of products and processes. In particular, these industries will have to deal with the increasing competition from low-cost countries and the risk of delocalization to

regions with significantly lower production costs.

Overall, successfully overcoming the economic crisis will require substantial adjustments in a number of sectors. Firstly, in case of a lagging recovery, the implications of short term working and labour hoarding in industry will have to be dealt with. In particular, actions will be needed to facilitate re-skilling and re-employment. Secondly, the sectors that were undertaking restructuring or were in decline for some time in the past have been faced with an acceleration of the negative changes and stronger adjustment pressures as a result of the crisis. Further restructuring of these sectors will be necessary to reestablish competitiveness and profitability and re-orientate these sectors towards new and growing market opportunities. Thirdly, the recession exposed a serious overcapacity problem and a mismatch of product mix particularly in the automobile industry that will have to be dealt with in the near future. Other investment and durable consumer goods sectors have also been badly affected by the recession, although the degree of over-capacity in these industries appears to be smaller.

### **3. THE IMPACT OF THE CRISIS ON ACCESS TO FINANCE**

The financial market crisis and the ensuing economic recession have seen many banks reduce their lending to companies to repair their impaired balance sheets. Debt financing has become more expensive and difficult to obtain, so has financing through capital markets. Risk capital financing provided by business angels and venture capital funds has also dropped sharply. The availability of mezzanine financing for SMEs has suffered, in many cases, due to its heavy reliance on securitisation. Sectors characterised by long delays between the start and the completion of work, such as shipbuilding, aeronautics or the construction sector suffered from malfunctioning financial markets. The sharp fall in demand coupled with longer payment delays on receivables and an increase in enterprise insolvencies have only made matters worse for companies' liquidity situation. Member State governments and central banks intervened forcefully in late 2008 and 2009 to stem the fall in lending. The support

programmes have so far been successful in preventing a credit crunch in Europe.<sup>2</sup> However, the banking sector remains very weak in many countries and it is essential that the on-going problems experienced by SMEs in obtaining access to finance should be urgently addressed to ensure that the new investment essential for economic recovery and renewal is not unnecessarily delayed. Finance for innovative companies also needs to be addressed through the wider development of risk-capital markets and the preservation of a sound, liquid and efficient EU-wide capital market.

Euro area loans to non-financial enterprises have contracted over the last year by some 2.5%, with short-term credit contracting by 12.5% (February 2010 data, see chart). The January 2010 ECB bank lending survey pointed to a further decline in the net tightening of credit standards, although at a slower pace than in previous quarters. 83% of surveyed banks reported that credit standards applied to SME loans stayed the same. A turning-point in the tightening trend observed since the second half of 2007 has not yet been reached. Euro area banks expect some further tightening of credit standards on loans to companies in the first quarter of 2010. At the same time net demand for loans from enterprises remained negative in the fourth quarter of 2009 (at -8%), albeit much less so than in the third quarter (-20%). Banks expect net loan demand from enterprises to turn positive in the first quarter of 2010<sup>3</sup>.

A European Central Bank survey<sup>4</sup> of SMEs in the second half of 2009 showed a sustained deterioration in the availability of bank loans over both first and second halves of 2009. SMEs in the construction sector were the most negative with respect to the availability of bank loans. SMEs in all sectors expected the deterioration in the availability of bank loans to continue into the first half of 2010. Overall, 41% of the SMEs in the construction sector and 25% of the firms in the manufacturing sector reported a further deterioration in the availability of bank loans in the second half of 2009. Some 18% of the SMEs reported a rejection of their bank loan

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<sup>2</sup> OECD, *The impact of the global crisis on SME and entrepreneurship financing and policy responses*, 2010.

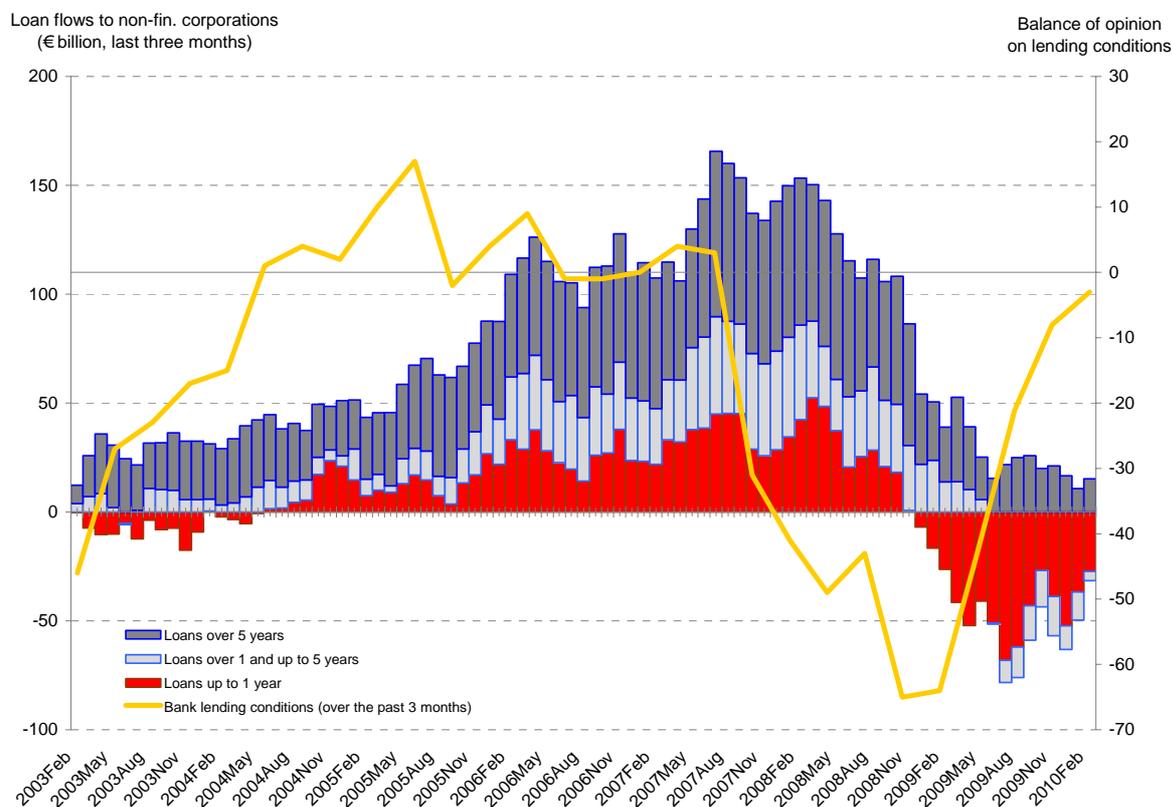
<sup>3</sup> ECB, *The Euro Area Bank Lending Survey*, January 2010.

<sup>4</sup> Survey on the access to finance of SMEs in the euro area: second half of 2009, ECB, February 2010.

application, while a further 18% received part of their request and 3% did not take up an offered loan considering the price too expensive. Reflecting the uncertain economic environment,

19% of SMEs mentioned access to finance as their most pressing problem facing them, as against 28% mentioning finding customers.

**Chart 2: Loans to non-financial corporations in the euro area (€billion, last three months)**



Source: ECB

As for European venture capital markets, they remain fragmented and underperforming compared to US. The bottlenecks continue at both ends: an underfunded early-stage segment and a difficult exit market. The weak performance of the sector and the current challenging exit environment is already affecting fund-raising and investment volumes. The current economic uncertainty has put investors and financiers on the defensive. Many angel investors and venture capital funds are shunning new investments and are attending to their current portfolio of companies. This attitude may change only once there is a lasting improvement in the economic outlook.

Finally, the more general availability of consumer and industrial financing remains important for several durable and capital goods

industries, such as autos, aerospace, and shipbuilding. The impact of the financial crisis on such financing still remains significant in the majority of Member States. Although the capital markets have now reopened for companies with high credit ratings, borrowing margins remain high and many companies have seen downgrades in their credit ratings. Indeed, the temporary undershooting of economic activity in 2008/9, mainly in manufacturing industry has by now also triggered a (temporary) undershooting of the balance sheets of the companies in the affected sectors and, subsequently, of their credit rating. Policy answers to this problem must be urgently found so as to avoid that the present recovery will be brought to an end by this mechanism.

## 4. TRADE AND GLOBAL COMPETITION

World trade is a major driver for the growth and competitiveness of the European industry. Over the last two decades, the integration of the emerging market economies of Asia and Latin America into the world economy, falling transport and communication costs, on-going trade and investment liberalisation, and a more predictable and accountable and market-supporting institutional framework in emerging economies have paved the way for a higher degree of global economic integration, and an intensifying global division of labour. The resulting acceleration in world trade has been a motor for economic growth at the global scale as well.

Economic forecasts suggest that Asia will be the major growth area for world trade over the next decade. For example, the IMF projections<sup>5</sup> indicate growth of 8.2% p.a. for GDP in developing Asian economies over 2010-2014, compared with growth of 1.9% p.a. for EU GDP over the same period. It is essential that European industries continue to actively engage with these markets, that policy ensures full and non-discriminatory access for trade and direct investment, and at the same time industry secures the protection of its intellectual property rights, after all a key driver for innovation and competitiveness.

Increased economic integration enabled the rise of emerging economies as relatively low cost and potential high demand markets. Also owing to the effects of EU enlargement, the EU's share of world trade has remained relatively stable over the last decade, despite the rise of China and the other emerging market economies. The machinery and equipment, other transport equipment, and chemicals industries were the major sectors contributing to the EU's strong export performance. The initial effect of the economic crisis on EU exports was of comparable magnitude to the overall contraction in world trade. However, EU exports have not yet correspondingly benefited from the subsequent recovery of world trade in Asia since the middle of 2009.

The EU's economic strength depends crucially on our ability to remain globally competitive. The EU imports in order to export - around two-thirds of EU imports are used as inputs in the production process and turned into higher value added products, much of which is then exported.

In addition, the rise of China, India and Brazil and other emerging market economies in Asia and Latin America as major exporters provides additional challenges for EU industry in the internal market and in third markets. The impact of this competition on labour-intensive industries has already been seen in the substantial falls in production over the last two decades in the textile and clothing industries, also as a result of the abolition of the Multi Fibre Agreement in 1994 and the 2004 Agreement on Textiles and Clothing. Recent evidence from the Competitiveness Report 2009 suggests that China in particular is now beginning to also compete with the EU on technology-driven products.

### Competition from emerging economies

Emergence of global value chains not only led to efficiency gains and a geographical fragmentation of production processes by fabrication of components in different location around the globe but also moved some of the relevant know-how and services into these locations. The development of global value chains facilitated the rapid integration of developing countries into the global economy by the transfer of capital, technology and knowledge. Consequently, by using available low cost resources and by building on the acquired know-how, the emerging countries have turned into strong competitors for developed countries. In particular, China, India and Brazil have recorded very high growth rates of manufactured exports. Over the 1999-2008 period the share of EU imports from these countries has gone up from 17 % to 32%.

Statistics show that China has increased its world market share almost in all sectors in the 1996-2006 period. During the same period, the EU trade performance has held up notably well compared to US and Japanese performance. The EU has broadly maintained its share of the world market over the last decade and in 2009, the EU was still the world's largest exporter of goods, with a 16.2% share of global exports. The

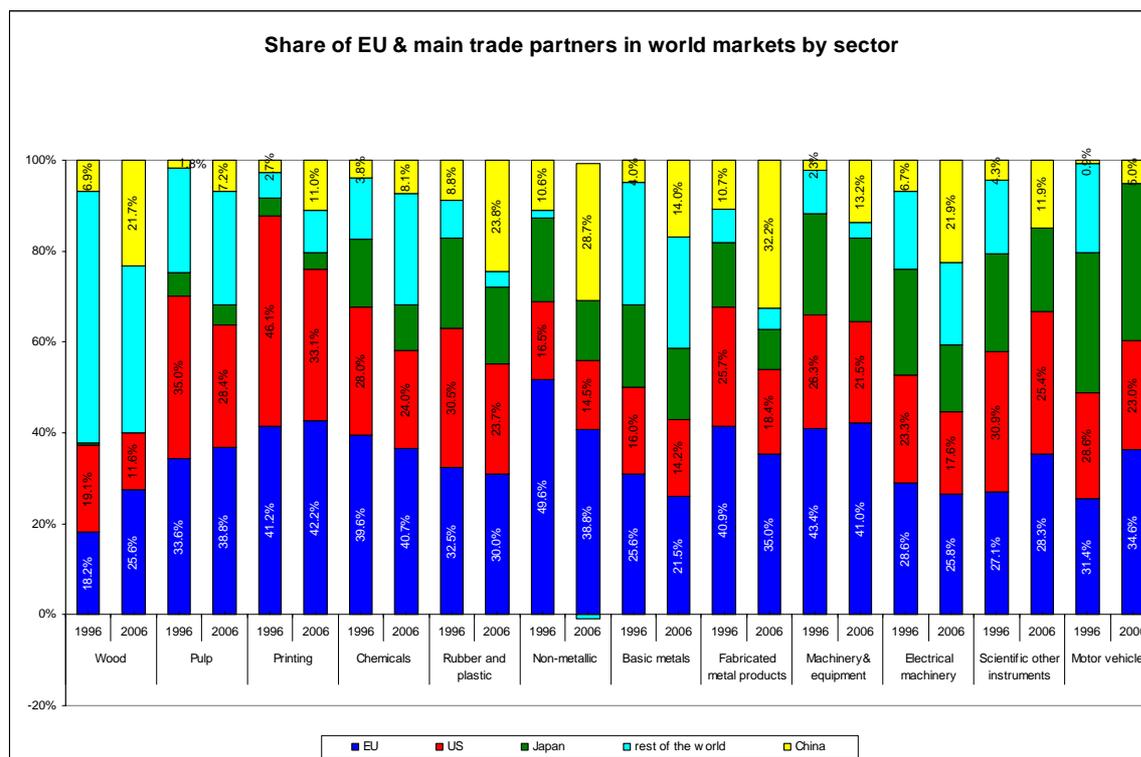
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<sup>5</sup> IMF World Economic Outlook database, October 2009.

European industry maintained, and in some sectors even increased its market share. Particularly, in the chemicals – including pharmaceuticals, woodworking, pulp and paper products, printing, manufacturing of scientific and other instruments and in the motor vehicles sectors the market share of European industry increased. The figures show that China has increased its market share in sectors such as office machinery, radio and TV equipment; electronic components in which Japan and USA

used to be the market leaders. The EU lost much less market share in other sectors compared to the USA and Japan. In other sectors, the EU has better resisted the challenge of China than the US and Japan, particularly in fabricated metal products and electrical machinery, and was less vulnerable to a loss of market shares in office machinery (computers).

**Chart 3: Share of EU and main partners in world markets by sector**



The EU's strong overall performance is due to an upgrading of the quality of its exports, combined with the ability of EU companies to sell products at premium prices because of quality, branding and related services, i.e. its focus on producing products with high value-added. EU trade in this production segment represents 30% of world market for these products (as much as USA and Japan combined) and half of EU exports.<sup>6</sup>

### Market Access

Most of the industrial sectors in Europe encounter difficulties in accessing third country markets. To illustrate the scale of the problem:

DG Trade lists 203 key barriers for 32 countries in its Market Access Database<sup>7</sup>. These are just the most important and persistent barriers to accessing the markets of the EU's main trading partners. But in reality, European companies face many more obstacles on third country markets. In terms of measures restricting free trade tariffs and, duties as well as non tariff barriers affect the competitiveness of EU industry. For some particular sectors investment barriers and intellectual property barriers are also important. The data in DG Trade's Market Access Database shows that by far the main problem is non-tariff barriers (NTBs). These range from burdensome registration and customs

<sup>6</sup> CEPII-CIREM, The Evolution of EU and its Member States' Competitiveness in International Trade, January 2009

<sup>7</sup> <http://madb.europa.eu/mkacddb2/indexPubli.htm>

procedures to technical standards, sanitary specifications, trade-distortive subsidies, and discriminatory government procurement legislation. In some cases, third countries try to circumvent WTO rules by claiming that the NTBs are necessary to protect health, consumer safety, or to protect natural resources.

As regards sectors, automotive, pharmaceuticals, leather and textiles, electronics, machinery, iron and steel, ceramics, and wines and spirits sectors are particularly suffering from market access barriers and their competitiveness is hindered by these measures. Notwithstanding the sharp reduction of the use of tariffs as a result of the WTO commitments, a significant number of tariff measures are still in place in the automotive sector. In some industries, such as shipbuilding, aerospace and semiconductor manufacturing the level of state aid granted by a number of players in these global markets is perceived by many as problematic.

In sectors such as space and defence where institutional demand is the main player, European industry is often faced with prohibitions or restrictions by emerging economies such as the need to produce in the third country and to integrate new suppliers from this country in the supply chain in order to access these markets. Restrictions on foreign direct investment are a problem in a number of countries, including China, Canada, and Mexico.

Intellectual property rights (IPR) and their enforcement are an important issue for many industries which compete on innovation and quality. Significant sector-specific trade barriers related to IPR exist e.g. for the pharmaceutical and wines and spirits sectors, and for the ICT sector regarding royalty payments e.g. in China. Lack of IPR enforcement, of adequate exclusive data protection, or delays in granting patents are some examples for the problems encountered by e.g. the pharmaceutical sector.

### **Internationalisation of value chains**

Manufacturers' search for new markets and increased efficiency and low-cost production has led them increasingly to invest in non-EU countries leading to the development of global value chains. Most foreign direct investment (FDI) is currently motivated by market expansion: e.g. investment by European car

manufacturers in China to serve the Chinese market. This creates new jobs overseas while maintaining or even creating jobs in Europe. Some other FDI continues to be motivated by the motive of exploiting economies of scale and competitive advantages of non-EU locations, increasing the complexity of the value chains: e.g. the sourcing of chips used in mobile telephones from production sites in Canada. Such offshoring is partly a result of the increasing complexity of products and production processes. In the face of global competition, such specialisation is increasingly important to maintain the competitiveness of EU products and firms. Strong clusters of co-located industries and services that bundle specialised firms, high-skilled workers and talents and other important economic actors and institutions have shown too to be more competitive and innovative.<sup>8</sup> Internationalisation of industry can be further strengthened by expanding trade and investment in business related services sectors, in order to allow service suppliers to "move" with their clients.

The EU is the world's biggest investor and the principal host of foreign direct investment. When intra-EU stocks are excluded, the EU owned 36% and hosted 29% of world investment stocks in 2008.<sup>9</sup> At the end of 2006, cumulative EU FDI stock in the rest of the world is valued at €3.3 trillion, whilst cumulative FDI by the rest of the world in the EU was €2.4 trillion.<sup>10</sup> Industry sectors in Europe differ greatly in their degree of internationalisation. Within manufacturing, the petroleum, chemical, rubber and plastic products, metal products, motor vehicles, and other transport equipment represent the highest concentration of outward stocks. The EU is a net investor in all manufacturing industries except in textiles and woodworking sectors<sup>11</sup>. However, in business services inward investments exceed EU investment in the rest of the world.

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<sup>8</sup> See Commission Staff Working Document SEC (2008)2637 "The concept of clusters and cluster policies and their role for competitiveness and innovation: Main statistical results and lessons learned", available at <http://ec.europa.eu/enterprise/policies/innovation/policy/clusters/>

<sup>9</sup> Eurostat and UNCTAD

<sup>10</sup> Data from European Union Foreign Direct Investment Yearbook 2008. The sectoral breakdown is available only for end-2005.

<sup>11</sup> Sectoral Growth Drivers and Competitiveness in the European Union

OECD countries continue to be the main recipients of EU FDI outflows. For example, the latest data on FDI stocks from 2008 show that some 37% of EU FDI is located in the US and in Canada and 23% in Europe outside the EU. In comparison, only 14% of FDI stocks are located in Asia, with some 1% in China. Nevertheless FDI flows to China have increased dramatically over recent years, and many European companies have invested in China in order to have access to and serve this large and rapidly growing market.

## 5. SINGLE MARKET FOR GOODS AND BETTER REGULATION

One of the most important achievements of the EU is the free movement of goods, services, capital and labour between the Member States. The single market for goods is particular is a major growth driver for EU industry.

The successive enlargements of the EU have created a market of over 490 million consumers. The market enables firms to access and sell across the entire EU market, thus reducing trade costs, stimulating competition, and enabling economies of scope and scale. Moreover, the single market enables the building up of an integrated network of production sites under common ownership allowing the accessing of local markets and taking advantage of local supply differences.

Over the period 1999-2007, intra-EU trade flows increased at an annual rate of 7.6%, compared with overall manufacturing production growth of 2.3% per annum over the same period. In most sectors, the difference in growth rates was substantial, particularly in investment and intermediate goods.

**Table 2: The Single Market for Goods**

Nace 1.1	Sector	Annual intra-EU trade growth 1999-2007	Annual output growth in EU27 1999-2007*
D	Manufacturing	7.6	2.3
DA15	Food & beverages	6.6	1.5/1.3*
DB17	Textiles	1.6	-2.7
DB18	Wearing apparel	4.2	-4.6
DC19	Leather	4.3	-5.8
DD20	Wood & of products of wood	6.2	1.7
DE21	Pulp, paper & paper products	4.7	1.8
DE22	Publishing & printing	1.1	0.2
DG24	Chemicals & chemical products	10.0	2.1/4.9**
DH25	Rubber & plastic products	7.4	2.2
DI26	Other non-metallic mineral products	5.1	1.3
DJ27	Basic metals	13.7	1.7
DJ28	Fabricated metal products	8.0	2.8
DK29	Machinery & equipment n.e.c.	7.1	3.6
DL30	Office machinery & computers	-1.3	4.0
DL31	Electrical machinery and apparatus n.e.c.	7.8	2.6
DL32	Radio, TV and communication equipment	5.2	
DL33	Scientific and other instruments	8.6	
DM34	Motor vehicles	7.2	3.5
DM35	Other transport equipment	4.5	1.8
DN36	Furniture; manufacturing n.e.c.	6.6	0.0

Output growth is calculated for the corresponding NACE2 categories

\* 1.5 - Manufacture of food products / 1.3 - Manufacture of beverages

\*\* 2.1 - Manufacture of chemicals and chemical products / 4.9 - Manufacture of basic pharmaceutical products and pharmaceutical preparations

The single market has also successfully allowed the integration of the New Member states into the EU-wide economy. EU 15 investment flows into the new Member States increased from € billion in 2003 to €37.5 billion in 2005, and stayed at the same level in 2006<sup>12</sup>. As a result of enlargement, growth in NMS averaged 5.6% from 2004-2008 compared to 3.4 % in 1999-2003. But this has not been at the expense of old Member States, whose growth was around 2.2% annually from 2004-2008, with a similar figure for 1999-2003. Over almost a ten year period from 1998 to 2008 the GDP of the NMS increased by 145% and reached at €886 billion, making it comparable in size to that of Brazil, India or Russia.<sup>13</sup>

The Commission has also improving the framework of regulation for the single market through its Simplification programme and Action Programme for Administrative Burdens in the EU by 25% by 2012. The latter Action Programme should deliver savings of almost € 40 billion. The Commission through the Simplification Programme has proposed the re-codification and simplification of some 1600 acts, representing around 14% of the total EU acquis.

These are major achievements. Looking to the future, it is necessary to maintain and expand the single market in goods and extend and continue the better regulation initiative. The further development of the single market through the implementation of the Goods Package and improving cross-border consumer protection and electronic flows will be essential.

## **6. ENERGY AND RESOURCE EFFICIENCY**

One of the most pressing challenges facing Europe and the world is the need for a transition to a low carbon, energy- and resource-efficient economy. European leadership in this transition should not be seen foremost as a burden on industry, but rather as an opportunity for

sustainable growth and gaining a competitive advantage. As the world economy begins to recover, there is a high likelihood of a strong resurgence in energy and raw material prices. Improving energy and resource efficiency is therefore also an important commercial necessity. Likewise, assuring the supply of critical raw materials, energy security, and well-functioning, competitive, and inter-connected internal energy and transport markets will become increasingly essential for the competitiveness of EU industry.

Improving the energy and resource efficiency of production processes and meeting the EU's ambitious goals of greenhouse gases reduction constitute significant long term challenges for European industry. Markets in the EU and globally will increasingly demand products and services with increasingly low-carbon and resource-efficient characteristics. Important parts of EU industry have already adjusted their output to meet these demands, for example, sectors such as automotive, mechanical and electrical engineering, and the chemicals industry. These sectors supply products with improved energy-efficiency and reduced carbon emissions and have high potential for greater innovation for competing in future markets. The energy-intensive industries have also made substantial progress in reducing their carbon emissions. The key issue – as with the achievement of other environmental goals - is to ensure that EU industry makes this transition smoothly and proportionately.

A considerable part of the EU manufacturing sector is highly dependent on energy and even more so in new Member States than in EU15. Energy efficiency and costs are thus crucial for the competitiveness of the European Industry. Much progress in improving energy intensity has already been made. The overall intensity of final energy consumption by industry has fallen by some 30% since 1990, faster than in any other sector of the economy<sup>14</sup>. However, energy efficiency differs greatly across industries and manufacturing processes, and across countries, with new Member States being typically still much less energy efficient than the old ones.

The **high energy-intensive manufacturing sectors** include iron, steel and non-ferrous

<sup>12</sup> EU-15 Foreign Direct Investment in the new Member States, Eurostat Statistics in focus 71/2008

<sup>13</sup> Goldman Sachs Economic Research, Global Economic Paper No:173, New EU Member States- A fifth BRIC?

<sup>14</sup> EEA (2008) Final Energy Consumption Intensity Monitor [http://themes.eea.europa.eu/Sectors\\_and\\_activities/energy/indicators/EN21%2C2008.11](http://themes.eea.europa.eu/Sectors_and_activities/energy/indicators/EN21%2C2008.11)

metals, pulp and paper, chemicals, non-metallic mineral products, and textiles. Not surprisingly, these sectors have already heavily invested in energy efficiency and have substantially reduced their energy intensity since 1990, especially in the wake of rising energy prices. Further investment in R&D and innovation would be essential to enable further progress on energy-efficiency and to reduce carbon dioxide emissions.<sup>15</sup> This makes it all the more necessary that measures aiming at combating climate change (e.g.ETS) properly take into account efforts already made by them and that the economic burden placed on these industries preserves their ability to invest.

There is greater scope for improving energy-efficiency in the **less energy-intensive sectors** of industry. In many of these sectors, there are substantial differences in the energy-efficiency of plants across the EU. In particular, the potential role of ICT in reducing energy usage through better control, smart metering, and smart grids etc. could have a substantial impact on energy-efficiency<sup>16</sup>. Moreover, the Electra report suggested that an energy saving potential of between 30% and 65% could be achieved in some processes, providing that low consumption and high efficiency equipment (lighting systems, motors, power capacitors, transformers, cables....) are utilised with appropriate automation & controls for their optimisation, together with procedures and tools to monitor performance and maintain systems<sup>17</sup>. A major stumbling block for turning this potential into reality is, however, the budget constraint of the would-be investors, being aggravated by present-day access-to-finance problems.

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<sup>15</sup> In particular, it will be necessary to provide the right technology-specific framework conditions for substantial private sector investment in demonstration projects. Moving beyond research to commercialisation requires investments of a higher order of magnitude. For example, the R&D costs for steel plant carbon capture and sequestration have been €80 million; establishing a demonstration project would cost €300-400 million; the investment costs of installing the process in steel mills across the EU will be of the order of tens of billions of Euros. European Steel Technology Platform "Steel-a key partner in the European low-carbon economy of tomorrow", May 2009.

<sup>16</sup> See e.g. SMART 2020: Enabling the low carbon economy in the information Age: [www.smart2020.org](http://www.smart2020.org) and DG INFSO: "ICT and Energy Efficiency", February 2009:

[http://ftp.cordis.europa.eu/pub/ftp7/ict/docs/micro-nanosystems/smart-manufacturing\\_en.pdf](http://ftp.cordis.europa.eu/pub/ftp7/ict/docs/micro-nanosystems/smart-manufacturing_en.pdf)

<sup>17</sup> ELECTRA report

[http://ec.europa.eu/enterprise/sectors/electrical/files/electrereport\\_a\\_nnex2\\_en.pdf](http://ec.europa.eu/enterprise/sectors/electrical/files/electrereport_a_nnex2_en.pdf)

## Carbon leakage

Carbon leakage occurs when the compliance cost of the carbon constraint imposed, for example, through the European Emissions Trading Scheme (EU ETS), leads industries or industrial production to move outside the EU and thus fails to reduce global emissions. A number of manufacturing sectors have been deemed to be exposed to a significant risk of such carbon leakage<sup>18</sup> if the revised system that will enter into force in 2013 is not accompanied by equivalent initiatives at the international level. These industries are estimated to account for around a quarter of total emissions covered by the EU ETS and around 77% of the total emissions from manufacturing industry in the EU ETS. Under the amended Emissions Trading System (ETS) Directive<sup>19</sup>, sectors deemed at risk of such carbon leakage will get free emissions allowances up to a performance-based benchmark<sup>20</sup>. For other industries, the free allocation will be progressively substituted by buying the allowances, starting with free allowances of 80% of benchmarks in 2013, reaching 30% of those benchmarks in 2020 and with a view to zero free allowances by 2027. The risk of carbon leakage and competitiveness concerns are also addressed through the use of international credits and the possibility of financial compensation for costs related to greenhouse gas emissions passed on in electricity prices.

In addition, there is a need to develop appropriate strategies and initiatives to help manufacturing and process industries to cope with the challenges of a low carbon economy and to maintain their competitiveness by investing in innovation and already existing technologies. Such initiatives should also build on the development, transfer and uptake of sustainable solutions resulting from eco-innovation initiatives in other fields (e.g. new technologies, demand-side measures, etc) and would thus require an integrated approach. There is also a need to continue monitoring whether the industries in certain economic sectors are at

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<sup>18</sup> Commission Decision of 24 December 2009

<sup>19</sup> 2009/29/EC, amending 2003/87/EC

<sup>20</sup> Performance-related benchmarks are set based upon the 10% most efficient installations or take into account significant differences in efficiency levels when alternative approaches are used. The majority of firms emitting more than the benchmark will have to purchase allowances to cover emissions in excess of these benchmarks.

significant risk of carbon leakage. This may necessitate the development of a monitoring tool or mechanism that might incorporate data from a

range of sources and build on existing work to ensure the use of sound and solid data.

**Table 3: Sectoral energy intensity**

Code	Sector	Energy/Production (%)	Energy/Value added (%)
E	Electricity, gas and water supply	12.9	46.6
DJ27	Basic metals	5.6	24.8
DE21	Pulp and paper	5.8	20.8
DF23	Refined petroleum	1.5	17.4
DI26	Non-metallic mineral products	6.0	16.8
DG24	Chemicals	3.1	10.5
DB17	Textiles	3.1	10.3
DN37	Recycling	2.3	9.5
DA15	Food and drink	2.1	8.7
DD20	Wood and wood products	2.4	8.0
DH25	Rubber and plastics	2.4	7.5
C	Mining and quarrying	2.3	5.8
DC19	Leather and footwear	1.4	5.4
DB18	Clothing	1.3	4.5
DJ28	Metal products	1.6	4.4
F	Construction	1.3	4.0
DN36	Furniture; other manufacturing	1.2	3.7
DM34	Motor vehicles	0.7	3.5
DK29	Machinery n.e.c.	1.0	2.8
DL31	Electrical machinery	0.9	2.8
DM35	Other transport eq.	0.7	2.5
DL32	Radio, TV & communic. eq.	0.7	2.3
DE22	Printing and publishing	0.8	2.2
DA16	Tobacco	0.3	1.7
DL33	Scientific and other instruments	0.7	1.7
DL30	Office machinery	0.3	1.6

*Definition: Average value of energy inputs to production value or value-added 2003-06*

Source: EU Industrial Structure 2009.

### Energy security and the internal energy market

A well-functioning, competitive, and inter-connected internal energy market, as well as energy security, is crucial for EU manufacturing. Improving the reliability of (external) energy supplies and their diversification will be essential in this context. The third internal energy market package adopted in July 2009 will strengthen the regulatory framework to make the

electricity and gas markets more inter-connected and functioning. Concerning the internal market, the European Energy Programme for Recovery is helping to secure and speed up gas and electricity interconnection through a €2.4 billion programme. Several challenges remain, notably the untapped potential for improving the energy efficiency of electricity production and transmission, and very high concentration ratios in energy supply, transmission and distribution, and the limited retail price responsiveness to

falling global energy prices. In the retail electricity market, the share of the largest three producers was above 80% in 14 Member States. Moreover, there is some evidence that last year's fall in wholesale energy costs was not fully reflected in end-user electricity prices<sup>21</sup>. Improving energy efficiency of electricity production, transmission and distribution would underpin sustainability of manufacturing in the EU. Using more renewable electricity and less reliance on fossil fuels would mean that European companies are also less exposed to volatility on global fossil fuel markets.

### **Resource efficiency**

Resource efficiency involves both managing material resources and natural resources, such as clean air, land and water. Account needs to be taken of resource use throughout the life cycle, so as to assess overall economic and environmental impacts. As well as the increased international competition for raw materials, increased pressure on the EU's own natural resources have potentially significant effects on future competitiveness. For example, the availability of water is increasingly becoming a constraint in some EU countries, particularly in the light of climate change, depletion and contamination of groundwater. It is estimated that investments to improve resource productivity could yield significant cost savings for industry<sup>22</sup>. Moreover, improving resource efficiency will be a major focus of future R&D and innovation. In order to reduce the EU's dependency and exposure to changes in resource markets, resource productivity would need to increase faster than economic growth. Assessing the feasibility of such progress needs to be achieved taking into account the investment horizons and costs of industry, as well as sector-specific adjustment flexibility.

### **Eco industries**

Eco-industries<sup>23</sup> produce goods and services to measure, prevent, limit, minimise or restore environmental damage to water, air and soil, and deal with problems concerning waste, noise and

ecosystems. Europe's core eco-industries, including the large sectors waste management and water supply, have a turnover in excess of €300bn and provide nearly 3.5 million jobs - around 1.5% of all employment.

Global markets for products and services linked to improving resource use and reducing environmental harm have grown at a rate seen in very few other markets and are predicted to continue to do so. The global market is currently estimated at €trillion and is estimated to reach €3trillion world-wide by 2020. Annual growth of the eco-industries in the EU has averaged 8% for the last 5 years. The EU industry is very competitive and has global market shares ranging from 30% - 50% in the water management, renewable energy, recycling and waste management sub-sectors but these are under threat from rapidly expanding industries in the US and Asia in particular.

Pollution control technologies avoid or reduce the amount of contaminants entering the air or ground. Demand for "end-of-pipe" equipment has grown out of environmental regulations such as the IPPC Directive on Industrial Pollution Prevention and Control, but in recent years industry in general is trying to move away from such an approach that focuses on the symptoms rather than the cause of the pollution and is taking a more holistic, integrated approach. Air Pollution control is the biggest part of this subsector and it has an estimated turnover of more than €15bn generated by approximately 120,000 employees. It is mainly concerned with measuring, analyzing and monitoring pollutants in the air or in flue gases and providing equipment for their control and treatment.

The EU has already begun to show that it can create new green jobs and gain first-mover advantages by exploiting the potential of its eco-industries. But more could be done to foster and exploit the potential of these sectors. For example, the EU could explore ways and means to market its technology and expertise in this sector abroad. Finally, the EU must continue to work to deliver an industrial base which is modernised to use and produce environmental-friendly technologies. However, the risk of the first-mover advantage being eroded at an accelerating pace should not be underestimated either, as has been shown e.g. in the context of the development of the global photovoltaic

<sup>21</sup> Commission Communication "Report on progress in creating the internal gas and electricity market" COM(2010)84

<sup>22</sup> UK BIS "Potential for Resource Efficiency Savings for Businesses" March 2010

<sup>23</sup> Study on the competitiveness of the eco-industries (Ecorys, 2009)

[http://ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?ite\\_m\\_id=3769&tpa\\_id=203&lang=en](http://ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?ite_m_id=3769&tpa_id=203&lang=en)

market. The timely development of the low carbon economy will be essential to secure long term job prospects in the EU.

## 7. RAW MATERIALS

The competitiveness of European industry depends on secure and reliable supply of raw materials, as well as on their affordability. Whilst price is a key issue, it is also vital to avoid a disruption of supply or a significant risk thereof. Raw materials are essential for the basic and fabricated metals, chemicals, paper, wood, leather, food and construction sectors, and are also needed in the production of medium and high-tech goods in the electrical and mechanical engineering, motor vehicle and other transport sectors. In addition, most of the key enabling or future technologies to be used in ICT, energy efficiency and environmental applications will rely on smooth and affordable supply of raw materials.

Raw material prices remain a considerable part of industry costs. For low-to-medium tech use, the main drivers of price (and availability) is growing demand from emerging countries as well as continued growth in demand in OECD countries. For high tech goods, the challenge is procuring rare metals for application in areas such as electronics, ICT and eco-technologies.

It is important to differentiate between raw materials used in relatively low quantities and those used in bulk. For example, lithium will be a key raw material required in batteries in hybrid cars while tungsten is a vital metal in high-tech steel. Other metals like gallium are required for mobile phones and platinum for catalysts in cars. Forecasts of the Fraunhofer Institute indicate that, for example, the anticipated annual demand for gallium could rise by 2030 to 6 times the total production of 2006.<sup>24</sup> In many cases these metals are not substitutable in the short-to-medium. Other – more available – metals such as copper cannot be considered 'rare', however, they are still one of the main components in car manufacturing; a fact which will continue with hybrid car production.

Raw materials can either be obtained via extraction or production in Europe (e.g. mining), via import of raw materials from third countries and finally via recycling (also known as 'secondary raw materials'). In geographical terms, most primary raw materials are concentrated in a few specific regions outside the European Union, namely in other OECD countries (e.g. Canada, US, Australia) and in emerging countries (e.g. China, India, Africa). Whilst there are considerable deposits available in Europe, the EU's position in world mining is relatively small. Indeed, Europe is and will remain import dependent for a number of materials. Overall, it can be said that Europe is disadvantaged vis-à-vis other regions of the world. It is also important to achieve the right balance between the sometimes conflicting goals of maintaining a competitive industry and achieving ambitious environmental goals.

The recycling industry in the EU has a turnover of around €42bn and employs nearly 140,000 people in more than 15,000 companies. The industry involves the processing of used materials into new products to prevent waste and reduce consumption, energy use and pollution. The EU has a global market share in recycling of nearly 50%. Turnover has been growing at a rate of more than 10% in recent years with much improved productivity. In terms of materials being recycled, ferrous and non-ferrous metals are very important along with paper and to a lesser extent, textiles, plastics and rubber. Others materials such as glass and wood are also recycled but on a more local level. Much of the growth of the recycling industries has been dependent on the legislative framework which has stimulated the creation of recycling infrastructures, technological development and assisted in the development of supply of recycling materials and market demand. There is great potential for increased recycling in the EU. Greater increases in the output of secondary raw materials in the EU remains constrained by limited Single Market flows, the loss of recyclable materials to landfill and incineration, and the lack of infrastructure and public capacity.

Recent price increases in these commodities have gone hand-in-hand with increased trade (export) restrictions, namely from several emerging countries. Hence, trade rules in this area are vital. A further external access issue is

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<sup>24</sup> Rohstoffe für Zukunftstechnologien, Fraunhofer Institut System und Innovationsforschung (15.Mai 2009)

that many deposits are only or are mostly found in the least developed countries, especially in Africa.

Although much of the world's commodities are found in non-OECD countries, most of the largest companies are owned or controlled by OECD based firms. The mining industry is moderately concentrated on a company basis compared to other industries. Out of the top 15 companies world-wide only 3 have their headquarters in the EU.

The mining sector is facing increasing difficulties in accessing resources. This is mainly due to geographical difficulties and/or remote locality such as the Arctic / Antarctic or deep-sea-mining. Exploitation of these resources requires eco-sensitive and efficient mining management. Advanced mining engineering and drilling technologies such as directional and extended drilling is a modern field of applied research and development. Hard rock mining might benefit from the technologies developed by the oil and gas sectors. New technologies and methods also need to be developed in the field of ore processing (e.g. bioleaching or flotation) in order to extract the maximum amount of required raw materials and to minimise the environmental footprint.

At present the EU is facing an increasing number of trade distortions on international markets including restrictions on exports by several resource-rich third countries. In order to create a level playing field for European companies, an effective trade policy must aim to ensure undistorted supply of raw materials and to fight mercantilist approaches of some non-EU competitors. This issue is increasingly being set as a key priority in the EU's external relations.

As the majority of main mineral reserves in the world are located in developing countries, there is also a need for development policy to create win-win situations focussing on promoting good governance, transparency and capacity building as well as, when necessary, mobilising resources for infrastructure development. This has often been seen as within the realm of external or development policy, but as with energy, it is very much in the interest of European industry to promote a sound extra-EU investment climate in mining, be it in the OECD or in emerging countries.

A specific area where industrial policy can add value is in the promotion, through research, of new extractive technologies and skills. Such research would help dispel the image of dangerous and labour-intensive mining. Indeed, mining has gone a long way since both in social and environmental terms, not to mention technology and efficiency. Synergies should be sought with the oil and gas industries which have experience in the area of offshore and remote controlled mining. Furthermore, as much knowledge and expertise is shared between EU and US firms – in particular mining and drilling engineering – solutions could involve transatlantic sharing of research and innovation in this area.

## 8. TECHNOLOGY AND INNOVATION

### Research Performance

Investment in research and innovation is crucial to European industry's ability to remain globally competitive. The 2009 "EU Industrial R&D Investment Scoreboard" analyses information on the top 1000 EU companies and the top 1000 non-EU companies ranked by their investments in research and development (R&D). The Scoreboard shows that **corporate investment in R&D continued to grow in 2008** albeit at a lower pace than in the previous year.

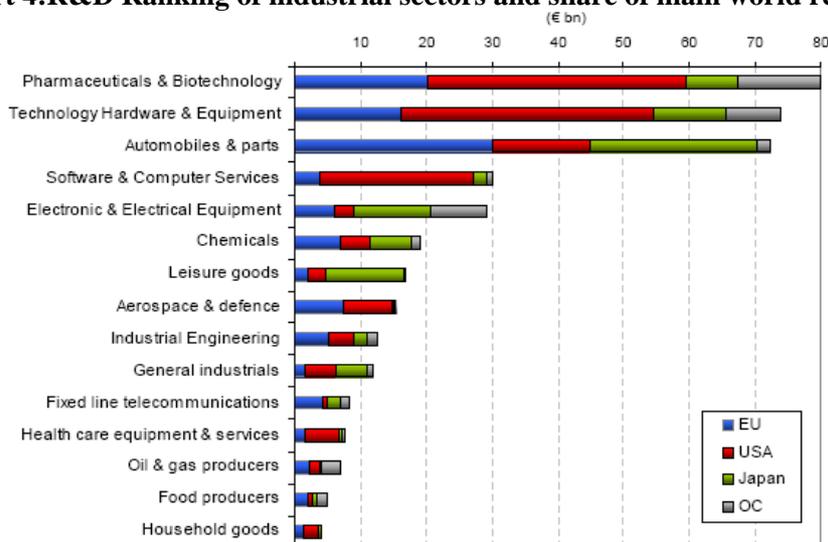
The 2009 Scoreboard shows that the **growth in R&D investment of EU companies is higher than that of non-EU ones**. This represents a trend break given that in the previous 6 years the R&D growth of EU companies was lower than that of non-EU firms. The total investment of EU based companies amounted to € 122 bn compared to €159 bn in the US.

In the US, over two thirds of the total R&D investment comes from high R&D-intensity sectors (mainly pharmaceuticals, biotechnology and ICT) whereas in the EU, only one third comes from those sectors. In the EU 49% of the R&D investment takes place in medium-high R&D-intensity sectors (mainly automobiles and parts, electronic and electrical equipment, chemicals, aerospace and defence) compared with 27% in the US.

However, the weight of individual sectors within each economy is important for understanding their actual contribution to overall R&D expenditure and growth. With respect to R&D intensity (ratio of R&D to net sales) EU companies rank slightly higher than those in the US not only in high R&D intensity sectors

(12.7% compared to 11.6%) and medium R&D intensity sectors (4.2% compared to 3.2%), but also in the medium and low intensity sectors.

**Chart 4: R&D Ranking of industrial sectors and share of main world regions**



Note: Based on world's top 1350 companies ranked on R&D investment

Source: 2009 EU Industrial R&D Investment Scoreboard

### Innovation Performance

Based on the Community Innovation Survey and other data, sectors have been ranked<sup>25</sup> by their **innovation performance based on an index constructed from 12 indicators**, including R&D but also taking account of the other factors such as the use of patents and other forms of intellectual property protection, the share of sales from new products, and the share of employees with higher education. On this scale, the sectors which lie above the value for manufacturing as a whole are electrical and optical equipment, ICT hardware and services, chemicals, motor vehicles, and electrical and other machinery.

It should be kept in mind, however, that the service sectors, which are generally not R&D intensive, as well as manufacturing sectors with a medium to low R&D intensity, play a very important role in terms of GDP and value added.

Overall productivity gains within the economy are strongly dependent on innovative capabilities of those sectors, particularly through the uptake and modification of innovations developed by other firms through a process of diffusion.

Moreover, using data from the third European Community Innovation Survey, firms can be classified<sup>26</sup> by their **mode of innovation**, ranging from **strategic innovators**, who regularly introduce new products and services and continually undertake R&D, **intermittent innovators**, **technology modifiers** and **technology adopters** who depend on adopting and diffusing technologies developed by others.

### ICT

ICT is an important contributor to the growth of the European economy: while representing 5% of GDP, it drives 20% of overall productivity growth. Its manufacturing sector is responsible

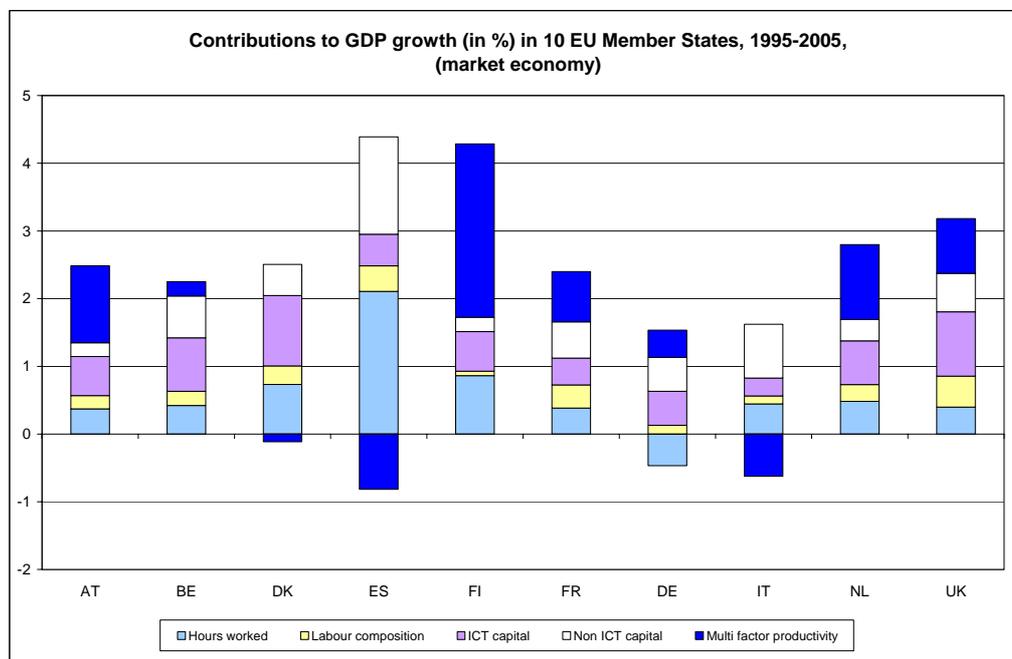
<sup>25</sup> Hollanders and Arundel, European sector innovation scoreboards (European trend chart, Dec. 2005)

<sup>26</sup> Hollanders, Strategic innovators drive innovation performance at the sector level (Europe Innova, April 2008)

for one quarter of total business R&D investment. Together with ICT investment and take up by enterprises, the sector has continued

to drive half of productivity growth also in the run up to the recent economic crisis.

**Chart 5: Contribution to GDP growth**



ICT business R&D represents a share of 25% of total business R&D reflecting the high R&D intensity of the ICT industry - the largest R&D investing sector in the EU economy and the equipment sector the largest investor. Although impressive, the contribution of the European ICT industry to total BERD is much lower than in Japan and the US. ICT explains most of the business R&D gap between the US and the EU. This gap can largely be accounted for by the size and the composition of the ICT industry. Improving the ICT infrastructure could make industry more efficient through increasing productivity, lowering operating costs, spurring innovation and opening up new markets, both B2C and B2B.

### Key Enabling Technologies

Key enabling technologies (KETs) play an important role in the R&D, innovation and cluster strategies of many industries and are regarded as crucial to ensure the competitiveness of European industries in the knowledge economy. These technologies enable the development of new goods and services and the restructuring of industrial processes needed to

modernise EU industry and make the transition to a knowledge-based and low carbon resource-efficient economy. Whilst the EU has very good research and development capacities in some key enabling technology areas, it has not been as successful at translating research results into commercialised manufactured goods and services. In order to contribute to those strategic areas it is also essential to invest in the development of human resources dedicated to research and in particular to broaden the skills of researchers by ensuring their exposure to the industrial sectors.

Key enabling technologies are knowledge intensive, associated with high R&D costs, rapid innovation cycles, high capital expenditure and highly-skilled employment. They are multi-disciplinary, cutting across many technology areas of systemic relevance. Therefore, we need to put in place the right framework conditions and support instruments to strengthen EU's industrial capabilities and deploy these key technologies. Building upon Member States technology reviews, notably in Germany, France and the UK, the Communication on Key

Enabling Technologies<sup>27</sup> identified a number of promising examples of such technologies including nanotechnology, micro- and nanoelectronics, advanced materials, biotechnology, photonics, and advanced manufacturing systems.

Advanced materials for instance make possible new applications and products and can facilitate recycling and reduce energy demand, as well as limiting the need for scarce raw materials. Photonics has exceptional properties such as high power and focusability at the speed of light, allowing optical transmission of information, new medical and lighting applications, and alternative energy sources. Advanced manufacturing technologies include both robotics and computer-integrated manufacturing and have enormous potential to increase the speed, efficiency, and reliability of production. These technologies can contribute greatly through integration with other enabling technologies. They provide the basis for the development of new industries and business models that can enhance the EU's competitive strength and provide new goods and services.

The technologies are currently at different stages of development and commercialisation. Micro- and nano-electronics is already a well established industry, with applications in semiconductors, electronics, telecommunications, autos, aerospace, and engineering. Industrial biotech is likely to have increasing impacts on in the food, chemicals, energy, pharmaceuticals, and textiles industries. An initial patent analysis of nanotechnologies suggests that they will be particularly important for chemicals, pharmaceuticals, metals, engineering and electronics.

## EU Member State performance

**R&D intensity** measured as a percentage of GDP<sup>28</sup> varies widely from one MS to another, with some MS investing well above the overall EU target of 3%, namely Sweden (3.75%), Finland (3.73%), with Denmark (2.72%), Austria (2.67%) and Germany (2.63%) close behind. The overall figure of 1.9% for the EU as

a whole (1.9%) compares very unfavourably with that of the US (2.76%). The impact of the recession is likely to reduce – at least temporarily - both public and private R&D expenditure. In general, business expenditure on R&D accounts for around two thirds of the total R&D expenditure, the rest being contributed by government, higher education, and the private non-profit sector.

The latest edition of the European Innovation Scoreboard<sup>29</sup> provides an assessment of the growth in innovation performance for each country and for the EU27 as a block using data over a five-year period. This calculation is based on absolute changes in the indicators. All countries show an absolute improvement in the innovation performance over the period. Romania has experienced the fastest growth in performance.

Within the four identified country groups growth performance is very different. Within the “innovation leaders”, Switzerland is the growth leader but also Finland and Germany show a growth performance clearly above that of the EU27. Cyprus and Estonia are the growth leaders of the “innovation followers”, followed by Iceland and Slovenia. Of the “moderate innovators” eight countries have grown faster than the EU27, but three countries have shown a slower progress: Italy, Norway and Spain. The growth leaders here are Czech Republic, Greece, Malta and Portugal. All “catching-up” countries have grown at a faster pace than the EU27. Bulgaria and Romania are the growth leaders also showing the overall fastest rate of improvement in innovation performance.

The average growth rates for the four country groups show that there is between-group convergence with the innovation followers growing at a faster rate than the innovation leaders, the moderate innovators growing faster than the innovation followers and the catching-up countries growing at a faster rate than the moderate innovators. The overall process of catching up, where countries with below average performance have faster growth rates than those with above average performance, can also be observed at the level of most individual countries.

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<sup>27</sup> Communication on “Preparing for our future: developing a common strategy for key enabling technologies in the EU” COM(2009)512.

<sup>28</sup> Eurostat, latest figures for 2008.

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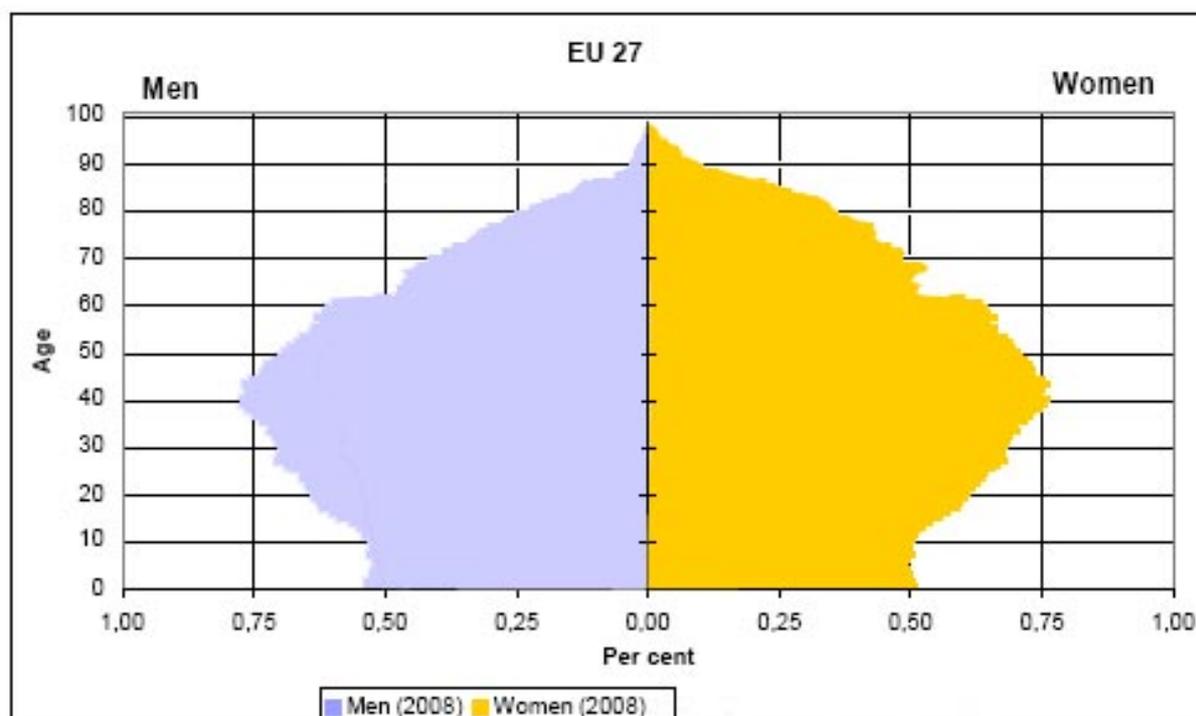
<sup>29</sup> <http://www.proinno-europe.eu/sites/default/files/page/10/03/I981-DG%20ENTR-Report%20EIS.pdf>

## 9. SKILLS CHALLENGES

Skills problems can arise because of skills shortages or skill gaps. Skill shortages refer to labour-market shortages when there are not enough individuals with the required skills within the economy to fill existing vacancies. Skill gaps occur when skill levels in the workforce are below those desired by employers or when job requirements do not match precisely

the content of the knowledge and abilities of individuals. Those who are skilled do not always have the right skills for employers, thus creating mismatches on the labour market. Skill mismatch is a widespread phenomenon in Europe, with over-education incidence averaging around 30 % and a substantial share of the population undereducated. These concepts point to the difficulties employers are faced with attracting sufficient labour of the right quality.

Chart 6: EU27 Population pyramid, 2008



Source: Eurostat

The employment trends by level of qualification show that the “skill intensity” of jobs in Europe has been rising in recent years and is expected to continue doing so<sup>30</sup>. As a result, the proportion of jobs employing high qualified people is expected to increase to over a third by 2020, whereas the proportion of jobs employing low qualified people is expected to decrease to 15%. Those requiring medium level qualification will constitute half of all jobs. However at present much of Europe is not sufficiently skilled: nearly one third of Europe’s population aged 25-64 have none or only low formal qualifications, whereas only one quarter of Europe’s population aged 25-64 have high level qualifications.

<sup>30</sup> CEDEFOP, “Future skills needs in Europe”, 2010.

The skills problem is made more urgent by rising unemployment and the demographic challenges. Demographic trends will have a major impact on labour supply. Eurostat estimates that the EU working age population (15-64 years) will peak in 2012 and then start shrinking as the “baby-boom” cohorts retire. As the participation rate of women and of older workers will continue to increase until 2020 the effective labour force should continue to grow slowly. Thereafter the “ageing effect” will outstrip the increase in participation rates, resulting in a slight but continuous decline of total EU labour supply.

Moreover, the current crisis is accelerating the pace of economic restructuring, which will have a lasting structural effect on the volume and

pattern of skills demand. Restructuring<sup>31</sup> was however an issue already before the crisis and it has accelerated developments and the need for anticipation of future changes and impacts on human resources. According to recent estimates, some 80 million job opportunities are expected to arise in the next decade.<sup>32</sup> Among these jobs, almost 7 million jobs will be new and most of those will require a more highly-skilled workforce.

Many manufacturing sectors (such as electrical and mechanical engineering, automotive, textiles, wearing apparel and leather products sector, basic metals and non-metallic materials, furniture, building and repairing of ships and boats sector, chemicals, pharmaceuticals, rubber and plastic products, printing and publishing, defence industry, computers, electronic and optical products, and construction) are facing skills challenges. In the EU, four common paths of sectoral developments as regards evolutions of skills needs can be identified:<sup>33</sup>

- Many sectors in the EU are experiencing increased competition from neighbouring countries and Asia. This has resulted in the **relocation** of many (so far mostly basic processing and assembling) functions towards the east and the south during the last 10 years. This movement increasingly also includes more knowledge intensive activities. In the beginning, many functions were moved to the New Member States. However, this movement now increasingly includes neighbouring EU countries, Asia and other emerging economies. The evolution is most prevalent within sectors such as, **textiles, defence, and automotives**.
- As basic processing, assembling and service functions are offshored and moved out of Europe, focus is put on high-end value and more knowledge-intensive activities, for example, connected to R&D, testing, marketing, sales, value chain management and financial management. This generates higher added value and increases the need for **high skilled labour**. Global competition

is also increasing within these activities, but in this evolutionary paradigm Europe will withstand competition and maintain its position as a world centre of excellence of technology and know-how. The evolution is most prominent within sectors such as, **furniture, automotives, computer, ship building and electromechanical**.

- Several sectors report on rising skills needs together with a steady need for low skilled manual workers (elementary occupations). Some functions are still highly manual and are at the same time place bound (they can not be offshored). At the same time internationalisation, market segmentation and new complex consumer demands creates increased need for highly professional managers expert technical and administrative staff specialised service managers, staff, workers, etc. Another trend belonging to the **polarisation of skills needs** is the decrease in the share of skilled workers. This trend is prominent within most sectors but especially within service sectors. The decrease in workers is however most prominent **within manufacturing sectors**. Also, existing language barriers make it difficult for European companies, and here especially SMEs, to fully exploit the whole potential of the European Single Market of more than 500 million citizens.
- The increased focus on climate change and the need to cut down CO2 emissions and energy consumption is generating a rising need of skills and jobs related to climate and environmental friendly solutions, technology and services. Today Europe is among the world leaders when it comes to green skills and technology, so the future opportunities are promising. The **greening of skills** and jobs is prominent within all sectors but political pressure, which is a lead driver within this area, has especially been put on sectors with high direct impact on climate and environment, such as transport, electricity, and **automotives**.

The implications of these cross-sectoral trends on future skills needs could be multiple:<sup>34</sup>

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<sup>31</sup> For more info on restructuring and skills go to:

<http://ec.europa.eu/social/main.jsp?catId=782&langId=en>

<sup>32</sup> Estimate according to the latest projections by CEDEFOP, the EU's reference centre for vocational education and training.

<sup>33</sup> Source: Final Report - Transversal Analysis on the Evolution of Skills Needs in 19 Economic Sectors, European Commission 2010.

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<sup>34</sup> Source: Key findings from "Final Report - Transversal Analysis on the Evolution of Skills Needs in 19 Economic Sectors, European Commission 2010."

- The increasing polarization of the demand for skills and competencies. On the one hand, the efforts of European industry to sustain competitiveness through quality improvement results in a strong demand for high skilled professionals. On the other hand, the growth of service industries drives a steady demand for both high skilled and low skilled workers.
- At the same time the growing off-shoring of higher-skilled production activities is lowering the number of skilled jobs in Europe.
- However, despite the level of skills and competencies, there is a need for continuous up-skilling of the labour force among others driven by internationalisation, specialisation, rising climate concerns, ICT and new technological possibilities. Improving ICT skills is also essential to increase productivity and improve labour market inclusion.
- To deepen the skills challenges even further, many sectors also forecast a loss of know-how and shrinking supply of labour available due to the ageing of the European labour force, and due to the "dirty" and "low-pay" reputation of blue-collar jobs in industry as compared to the "clean", "effortless" and "well paid" reputation of white-collar jobs in (financial and administrative) services.
- Significant job growth will predominantly be in service sectors.

## **10. SECURITY, DEMOGRAPHIC CHANGE AND HEALTH**

### **Security**

To a large extent, the market for security products and services is driven by institutional expenditures on defence, police, coastguard, ambulance and fire services. However the heightened threat of terrorist attacks in recent years has also greatly increased the demand for security provided by private providers. Airports are under constant pressure to ensure the security of operations and that of passengers and cargo. In maritime transport the vast increase in maritime transport of containerised cargoes has led to a strong increase in the use of inspection systems designed to detect drugs and dangerous chemical, biological, radiological, nuclear or

explosive substances. In addition, the physical protection of buildings, factories etc. has greatly increased demand for equipment and guarding services.

The scope of the private security services market in Europe varies considerably from country to country, depending largely on public policies regarding the appropriate role of the private security services sector and on the national regulatory frameworks regulating private security at national level. The market for security products is highly diversified, ranging from sensors, cameras, etc., to complex scanners and systems. The equipment manufacturers, systems integrators, service providers and large end users have to work closely together to ensure the integrity of complex systems which in turn on secure information and communications technology infrastructures. Furthermore, the issue of cybersecurity is crucial to the operation of government, financial services, retail, and almost all industrial and service sectors.

### **Demographic change and health**

As the baby-boom generation retires, the EU's active population will start to shrink as from 2013/2014. The number of people aged over 60 is now increasing twice as fast as it did before 2007 – by about two million every year compared to one million previously. Industry is confronted with the problem of maintaining growth, whilst at one end of the spectrum losing know-how through retirement of experienced staff, and at the same time smaller younger cohorts entering the labour market, and not having appropriate qualifications.

Besides the challenge to industry, the combination of a smaller working population and a higher share of retired people will place additional strains on our pension and welfare systems. It will also have implications for consumption patterns due to changes in life style. Although there seems to be a general consensus that the ageing of societies will have significant implications for the demand for healthcare services and products in general (care, pharmaceuticals, medical devices, telemedicine etc) and the financing of these goods and services, the exact effects are difficult to assess at this point in time. One assumption is however undisputed: ageing – or more precisely the combination of ageing societies, scientific and

technological progress in the treatment of diseases will lead to higher health-related expenditure. However, new technologies have a great potential to control costs, insofar they allow a reduction of hospital stays (through telemedicine and telemonitoring services) and a rationalisation of data management systems (through electronic health records).

## 11. BUSINESS RELATED SERVICES

European industry depends heavily on inputs from the service sector, but also provides advanced technologies and products on which new and innovative services are built, for example in the fields of telecommunication and healthcare. In this respect, industry and large parts of the service economy are tightly interlinked. In other words, policies affecting the one will also have an impact on the other. The statistical dichotomy between industry and services does not reflect the reality of the modern business world. Many industrial companies also derive substantial shares of their revenues from service provision, but there is little quantitative information in this field. For example, in addition to traditional services such as maintenance, companies in the capital goods sector frequently arrange financing for their clients, and many automobile manufacturers provide extensive financial services (leasing, banking, insurance).

Business services consist of many different activities. These include professional business services such as legal services, consultancy services such as management consultancy, technical services such as engineering consultancy, and marketing services such as advertising or market research. These Knowledge Intensive Business Services (KIBS) are frequently the source of know-how and innovation which gives industry its competitive edge. In addition, temporary work agencies and operational services such as cleaning and security services are also heavily used by industry, as well as transport and logistics, and ICT services. Many of the emerging service industries such as creative industries tend to cluster around other traditional industries and provide an important source of new ideas and

creativity for new products and services for the European industry.<sup>35</sup>

Many of these services could be provided in-house by enterprises themselves, but by purchasing (outsourcing) them from service providers they can focus on core activities and take advantage of the specialisation offered by service providers. Industrial SMEs generally do not have the option of providing these services in-house and are even more dependent than larger companies on the ready availability of high quality and affordable business services. The implementation of the Services Directive will facilitate the EU wide procurement of most of these services<sup>36</sup> and allow industry to obtain better value for money<sup>37</sup> for the services it requires. Further improvements in comparability of cross-border services could be provided through establishing adequate quality standards. The productivity of business services needs to be monitored and improved.

Services now account for 55.5% of value added and 60.8% of employment in the non-financial business economy<sup>38</sup>. In the period 1995 – 2007 employment in manufacturing has declined by 0.5% p.a. compared with an annual growth rate of 4.5% in business services (including renting and real estate). As there is no indication that this trend is likely to go into reverse, industry's contribution to the Europe 2020 agenda will be in generating economic growth, but it will largely contribute indirectly to employment creation through generation of increased demand for business related services.

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<sup>35</sup> See the Amsterdam Declaration and relevant mini studies available at <http://www.europe-innova.eu/creative-industries>

<sup>36</sup> Temporary work and private security services are excluded from the Directive

<sup>37</sup> It is estimated that European manufacturing industry buys in services worth more than €200 bn from providers of engineering, computer related and logistics services, as well as private security, facility management and temporary employment services.

<sup>38</sup> Eurostat: European Business 2009 (Figures for 2006)

## 12. THE SME DIMENSION

SMEs play a key role in European industry even though enterprises of different sizes are distributed unevenly over sectors of industry. In 2007, SMEs contributed directly to 45% of the value added and 59% of the employment in manufacturing. Their contribution is particularly high in the construction industry (with respectively 83% and 88%), according to the EIM 2008 Annual report. There has been no significant change in the contribution of SMEs to value added and employment in the manufacturing and construction sectors since 2002 (respectively 46% and 58% in manufacturing; 83% and 88% in construction). In addition, SMEs contribute also to the EU industry output as subcontractors (16% of manufacturing SMEs and 36% of construction SMEs are involved as subcontractors). 92% of SMEs are micro-enterprises, employing less than 10 people. These account for 95% of newly created companies across the EU and employ some 30% of workers in the private sector.

Although most of SME concerns are common to all economic sectors and policy response should be addressed in the framework of the Small Business Act for Europe (SBA) some of them are specifically related to industrial sectors. A sector by sector analysis clearly shows a number of horizontal issues that present particular problems for SMEs across a wide range of sectors, but have **also been identified as affecting companies of all sizes**, namely **access to finance**, the need for **skills**, particularly technical and scientific, and the need to improve R&D, in particular the access to EU-funded programmes. Micro-firms and the self-employed running them are particularly exposed to those challenges. Additionally, with education being one important factor in developing the entrepreneurial mindset, the other necessity is the willingness to take risks.

**Table 4: Value added and employment by size-class and sector of industry, EU-27, 2007**

		<i>value added</i>			<i>employment</i>			<i>labour productivity*</i>		
		<i>SME</i>	<i>large</i>	<i>total</i>	<i>SME</i>	<i>large</i>	<i>total</i>	<i>SME</i>	<i>large</i>	<i>total</i>
		%			%			1,000 €		
c-i, k	non-financial business economy	58	42	100	67	33	100	39	59	46
by NACE section										
c	mining and quarrying	33	67	100	30	70	100	127	112	117
d	manufacturing	45	55	100	59	41	100	39	69	51
e	electricity, gas and water supply	21	79	100	21	79	100	128	130	129
f	construction	83	17	100	88	12	100	37	56	39
g	wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	70	30	100	73	27	100	34	41	36
h	hotels and restaurants	75	25	100	82	18	100	19	28	20
i	transport, storage and communication	34	66	100	47	53	100	41	71	57
k	real estate, renting and business activities	72	28	100	68	32	100	54	44	51

\* Gross value added at factor cost, per occupied person.

Source: EIM on the basis of EUROSTAT.

Moreover, there are three important **additional issues that are particularly relevant to SMEs**: subcontracting, internationalisation, and access to environmental technologies and markets. Around 3.7 million SMEs in the European Union are engaged as **subcontractors**<sup>39</sup>, representing 17% of all SMEs in the EU. There are relatively more SME subcontractors in the 12 new Member States (20% of all SMEs) than in the 15 old Member States (16%). The economic sector most involved in subcontracting activities is the construction sector: 36% of the SMEs are involved as subcontractors. Other economic sectors with many subcontractors are: transport & communication, business services, and manufacturing with 30%, 18%, and 16% of subcontractors respectively. Major problems can be identified for SME subcontractors such as the existing **power asymmetries in the client-supplier subcontracting relationship**; too much **dependency on main contractor(s)**; **late payments**, etc. On the other hand, SMEs can benefit from their involvement as subcontractors. Examples include; expansion of business opportunities, indirect access to larger markets, access to external knowledge and technology transfer coming from main contractors, better use of the installed capacity and financial benefits.

**Internationalisation** supports business sustainability in the long term. According to a recent study on SMEs and Internationalisation<sup>40</sup>, internationalised SMEs show better performance, i.e.: are more competitive, than non-internationalised SMEs. This effect is further compounded by the fact that, at company level, internationalisation and innovation go hand in hand, one reinforcing the other. This may already point to the need to combine both aspects when designing government support. Manufacturing and wholesale trade have a very high share of exporting SMEs (just above 50%). In personal services and the construction industry this is 10% or lower. Also for importing, manufacturing and wholesale trade are the most important, but here wholesale trade scores much higher than manufacturing. Public support can play a role in the promotion of greater internationalisation. The effect of public support is relatively important as shown in the

study. About 50% of the users report a positive effect in policy terms, i.e. would not have internationalised without the support, internationalised earlier or had more international business because of the support received.

Access to environmental technologies and markets is becoming essential for SME growth. Lack of information, insufficient expertise, scarcity of resources, administrative costs, and other compliance costs of EU environmental regulation make it difficult to SMEs to comply with environmental legislation. This also prevents them from fully exploiting the opportunities for increased efficiency, competitiveness, innovation and growth offered by sound environmental management. Fostering SMEs' market share into eco-industry and increase SMEs' eco-efficiency are key challenges for achieving a greener EU economy.

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39 EU SMEs and subcontracting. Final Report – DG Enterprise and Industry, October 2009

40 Internationalisation of European SMEs, Final Report – DG Enterprise and Industry, December 2009.

### 13. SOME CONCLUSIONS

This paper is not to pre-empt discussions on the future direction of EU industrial policy, but to examine the drivers and barriers affecting the competitiveness of industry in Europe. Specific policy measures to address the challenges facing industry across the board, as well as taking account of the specific situation in some sectors, will be the subject of a Commission Communication on industrial policy later in 2010.

Industry has been hit by the most severe crisis in living memory. Fortunately many companies entered the current crisis leaner and fitter than they have ever been, but the dramatic fall in industrial output means that it will take time to recover to the pre-crisis peak. Industry in Europe has been undergoing substantial change for years, but in sectors where this change has not been fast enough or radical enough some painful adjustment may still be needed. The industrial base in Europe remains vital to the economy, and its importance stretches far beyond the core activity of manufacturing.

Despite the gloom, EU exports have increased faster than the overall growth of production, and EU trade performance has held up well in comparison to the US and Japan. European industry has invested heavily outside the EU in order to participate in the growth in other regions and to benefit from economies of scale and competitive advantage of non-EU locations.

Whilst some sectors experience particular problems the most significant issues for industry today are common to many sectors:

- the need to benefit from the opportunities of new **international markets** and respond to intensified global competition;
- the key role of the **Single Market** and **better regulation**;
- the importance of **technology and innovation** and in particular of key new technologies and ICT;
- the need to improve **energy and resource efficiency** and to make the **transition to a low carbon economy**;

- the importance of the **supply of raw materials**;
- the need to **manage restructuring** and ensure **adequate access to finance**;
- the **shortage of adequate skills** in the workforce and the need to ensure **skill transitions** from professions with declining demands to emerging ones;
- the increased role of **business services**;
- the importance of a **favourable entrepreneurial and business environment**, especially for SMEs;
- the need to respond to the emerging societal challenges such as **demographic change** and the requirements of **improved health and security measures**.

However globalisation and tighter integration within the Internal Market also increases complexity. Competitiveness depends more and more on the performance of other players in different sectors and locations. A particular consequence of this interdependency for policy makers in the EU is that policy measures in one Member State have significant spillovers to others.

Policy actions fostering industrial competitiveness are partly carried out at Community and partly at Member State level. The Commission's proposal for the Europe 2020 strategy includes a flagship initiative on an Industrial Policy for the Globalisation Era. This will provide a good opportunity to strengthen the interactions and synergies between the two governance levels. The Commission will work together with the Member States with a view to identifying and spreading good practice. This will enable the Commission to better integrate the national dimensions of policy making in the horizontal and sectoral initiatives undertaken as the basis for an integrated European industrial policy. At the same time, it should also allow Member States to better take into account the European dimension when devising their policies.

## 1. ANNEX 1: STOCKTAKING OVERVIEW

	<b>Economic Crisis and Restructuring</b>	<b>Research and innovation</b>	<b>Trade and investment</b>	<b>Energy Intensity</b>	<b>Environmental and other issues</b>	<b>Access to raw materials</b>	<b>Skills</b>	<b>Business Services Linkages</b>	<b>Societal challenges</b>
Food products		KETs	Mkt access, BRICs*, FDI, IPR		Waste	Access to materials	Skills		Food safety, health, ageing
Textiles	Restructuring	R&D, KETs	Mkt access, BRICs, IPR	Energy intensive	Waste		Skills	Textile services	
Clothing	Restructuring	KETs	Mkt access, BRICs		Waste		Skills	Textile services	
Leather and footwear	Restructuring	R&D	Market access		Waste	Access to materials	Skills		
Woodworking	Temporary and permanent closures		BRICs	Energy intensive sub-sectors	Volatile organic compounds, IPPC	Access to materials	Skills		Ageing
Pulp and paper	Short-term working: Closures	KETs, new reading habits (ICT)	BRICs	Energy intensive	Waste/ recycling, IPPC	Access to materials		Transport	Ageing
Printing	Restructuring: Substantial fall in investment	R&D, new reading habits (ICT)	BRICs				Skills	Upstream/ downstream services	
Chemicals		R&D, KETs	Mkt. Access, BRICs, FDI	Energy intensive	REACH	Access to materials		Transport	Health , Ageing
Pharmaceuticals and Biotech		R&D, KETs	Mkt access, IPRs				Skills	Healthcare	Health , Ageing
Glass and ceramics		R&D, KETs	Mkt access, BRICs, IPR	Energy intensive	Waste and recycling, Green Technology	Access to materials	Skills	Transport, maintenance, financial and ICT services	
Other non-metal. mineral products		KETs		Energy intensive	Waste and recycling, Green Technology	Access to materials	Skills	Transport, maintenance, financial and ICT services	
Iron steel	Short-term working	R&D, KETs	Mkt access, BRICs	Energy intensive	Waste and recycling, Green Technology	Access to materials	Skills	Transport, maintenance, R&D, financial and ICT services	

Non ferrous metals	Short-term working	R&D, KETs	Mkt access, BRICs	Energy intensive	Waste and recycling, Green Technology	Access to materials	Skills	Transport, logistics, supply of energy	
Metalworking and Metal Articles Industry	Short-term working	R&D, KETs	Mkt access, IPR, market surveillance	Energy intensive	RoHS, IPPC, REACH, recycling	Access to materials, steel price.	Skills (engineers, high-skilled technicians)	Engineering, finance	Aging
Mechanical engineering	Short-term working	R&D, KETs	Mkt access, BRICs, IPR		Energy-saving products		Skills	Engineering, finance	
Electrical engineering	Short-term working	R&D, KETs	Mkt access, BRICs, IPR		Product policy smart grids	Future access to materials	Skills	Engineering, finance	Ageing, Security
ICT		R&D, KETs	Mkt access, BRICs, IPR		Control of energy-use		Skills	ICT services	Security
Motor vehicles	Restructuring, Short-term working	R&D, KETs	Mkt. access, BRICs, FDI		Low carbon vehicle		Skills	Finance, lease, repair	Ageing
Shipbuilding	Restructuring Short Time working	Innovation	Mkt access, BRICs, IPR		Low emission vessels		Skills	Finance	
Aeronautics		R&D, KETs	Market access, subsidies		Reduction of aircraft CO <sub>2</sub> , NO <sub>x</sub> , noise emissions		Skills	Air transport, Maintenance of aircraft	Security
Defence	Restructuring	R&D, KETs	Market access			Future access to materials	Skills	Security	Security
Space		R&D, KETs	BRICs						Security
Security equipment and Technology		R&D, KETs	Market access, IPR			Future access to materials		Transport, security	Security, Health
Furniture							Skills		
Recycling		KETs			Waste and recycling	Access to Materials		Waste disposal	
Eco industries		R&D, KETs	Market access		Waste		Skills	Waste, water, energy	
Construction	Short-term working	KETs	Market access		Energy-saving Products		Skills	Architects, engineers	Ageing, health

\* BRICs – significant competition from emerging market economies (including China, Russia, India, and Brazil)

## 2. ANNEX 2: IMPACT OF THE CRISIS

Sectors	Impact of the crisis	Effects of policy response	Restructuring need/ long term trend
Food products	The current financial and economic crisis has not significantly worsened the picture. However, food and drink companies of all sizes have been experiencing increasing cash-flow problems.	No specific measures for the sector were envisaged as a response to the global economic downturn.	In the last decade, the European food industry has been suffering from a loss of competitiveness in comparison with its international competitors. In order to assure the competitiveness of the food supply chain, it is necessary to address the economic and social sustainability of the operators of each level of the supply chain.
Textiles	The spinning, weaving, knitting industries (mainly in the cotton chain) and finishing are the most affected parts of the textile industry. There are sub-sectors that are resisting to crisis and even performing better e.g. cordages and ropes, technical textiles, non-woven and carpets.	The sector has not benefitted from specific sectoral measures. Some isolated cases of state aids to textile companies have been examined within the normal procedures.	The sector has experienced substantial falls in production during the last two decades as a natural consequence of the liberalisation process, the increasing role of outsourcing of production to cheaper producers (India, China etc.), and technological progress driving the sector to restructure and reposition in the market. Consequently, the EU textile industry is characterised by a state of permanent restructuring and modernisation. It is expected that the crisis will accelerate the segmentation of the textile sector into niche markets and a shift in production towards faster growth products and specialisation of operations.
Clothing	Although the financial crisis affected the sector, the main determinants of the clothing sector evolution are linked mainly to the on-going global redistribution of work. It is expected that the crisis will accelerate outsourcing and/or delocalisations in the clothing standard products.		The clothing sector has undergone a long period of restructuring and modernisation during the last 20 years. Delocalisation to low cost countries and price pressures from them has determined the evolution of adjustment.
Leather	The current crisis hit at a moment when leather trade was showing signs of improvement and business for European tanners was improving. In difference to earlier downturns, this time a significant drop in demand is combined with an increasingly difficult access to credit due to the problems of the banking sector.		The leather sector has undergone considerable restructuring over the past decades and there have been significant numbers of job losses and company closures. This has been due to intense competition from low-cost third country producers, restructuring and modernisation, and technological progress but also to acute crises that have affected in particular the sector. The leather sector is very export oriented and therefore recovery will not only depend on developments in the internal market but also on export markets. Developments in the leather tanning sector are closely linked to developments in its outlets, such as the footwear, garment, furniture, automotive and leather goods industries.
Footwear	The current economic crisis came at a moment where EU production was still declining but at a lower pace than in previous years. The reduction in EU	There were neither state aid measures nor sectoral specific support measures put in place at EU level for the mitigation of the	Due to increased competition and subsequent restructuring and modernisation processes, the European footwear sector has registered very significant drops in production and employment over

	production is substantial and accompanied by an unprecedented decrease in consumer spending and in world trade exchanges, and most importantly a severe credit crunch affecting in particular SMEs and micro enterprises	effects of the crisis in the footwear sector.	the years. A large part of the industry is still in an early stage of changing business model and still needs more time to complete the process.
Woodworking	The woodworking sector overall has suffered very badly from this recession.	Woodworking does not have any sector-specific support measures at EU level	About 70 % of total EU wood consumption is used in construction, mostly public infrastructures. Nonetheless, housing accounts for up to 15 %, so the speed and level of recovery in home construction will be vital to all sub-sectors. In the medium to long terms, exports should see sawn softwood wood remaining buoyant and also the newer wood-based panels such as OSB and MDF.
Pulp and Paper	Most pulp and paper grades have seen their markets deteriorating, with a fall in demand, followed by a fall in production, prices and exports. Part of the decline was due to a massive inventory drawdown throughout the supply chain, partly also caused by concerns about underlying consumption that have been confirmed. SMEs in particular in the EU paper converting subsector, are suffering reduced access to financing for both working capital and investment.		Export markets are more and more competitive, especially as low-cost producers, such as China, increasingly compete for them. Employment has continued the decreasing trend from the last decade, with several temporary or permanent production facilities closures, translated in lay offs and job cuts.
Printing	All the subsectors have been confronted by now to the effects of the crisis. Compared to previous recessions, the decline in investments during the current recession was particularly huge. It is unlikely that the printing industry returns to a “business as usual” situation after the crisis.	The printing industry did not benefit from specific State Aid aiming at mitigating the effects of the crisis.	Printing companies continue exploring restructuring developments for their business: the medium and large size companies continue a merging and acquisition process, which have started several years ago. SMEs develop further efforts towards specialization and niche markets, where they have a significant advantage due to their flexibility and adaptability.
Chemicals	The chemicals sector has been one of the manufacturing sectors most affected by the economic crisis, largely due to the severe downturn in its most important customer sectors, such as construction, automotive and machine building. The impact of the crisis has been quite different in the chemical subsectors.	The chemicals sector has neither required, nor received any sectoral specific measures to overcome the current downturn. Since most of the EU chemicals industry is at the beginning of the value chain, measures benefiting some of its most important customer sectors are bound to have a positive effect on chemicals demand.	The current economic crisis needs to be considered within the context of major long term trends. The emergence of new strong competitors, namely in the BRIC countries, the shift of economic and market growth to Asia, megatrends (climate change, water supply and treatment, shift towards renewable raw materials, Ageing and more affluent population worldwide), shape the development of the global chemicals industry. Until now the European chemicals industry has been able to remain a strong and successful global player with a 29% share of the world market. The global chemicals market is bound to grow throughout the foreseeable future.
Pharmaceutical	Companies in the pharmaceutical and biotech sectors are likely to be less affected than most other sectors since the demand for healthcare is relatively independent of the present problems troubling the wider economy.		Globalisation has widened the number of potential competitors and increasingly emerging economies target life science-based industries as strategic high value-added sectors. Another trend which has given rise to concerns is the significant decrease in innovation which is reflected in a lower number of new medicines.

			Industry is currently restructuring (in particular "big pharma"). Access to finance for SMEs which was a concern in the past has become even more problematic as a result of the increased risk-averseness of investors. Healthcare budgets are under pressure due to the decreasing public revenues resulting from the economic crisis.
Non metallic mineral products	The financial crisis has exacerbated an already bad situation, and has led to closures and lay-offs in many areas. It is not clear at this stage whether all the plants that have been mothballed will ever re-open.	The sector is facing a high and increasing amount of (mainly environmental) regulation. The cumulated impact as well as their interplay with a global level-playing field has not been examined in depth.	As traditional, mature industries, all these sectors have seen a great amount of restructuring in recent years, with significant job losses and plant closures, for reasons given ranging from intense competition from non-EU producers; to the increasing burden of environment-related legislation. A major side effect of the closures is that once the situation begins to improve, the sectors will have lost a significant part of their skilled workforce and its know-how.
Iron and Steel	Macroeconomic conditions and restricted credit availability have been having an impact on the sector since the last quarter of 2008. The situation in steel using industries is affected by the decline in investment and private consumption resulting in lower construction and automotive demand. Significant reductions in production and employment have been announced by all major steel groups.	No state aid or sectoral measures designed specially for the steel industry are in place in the EU. However, measures such as introduction of car scrapping schemes and export credit insurance schemes in some Member States temporarily supported the demand from steel consuming sectors.  The sector is facing a high and increasing amount of (mainly environmental) regulation. The cumulated impact as well as their interplay with a global level-playing field has not been examined in depth.	During 80's and early 90's the steel sector in the EU went through a period of extensive restructuring which was characterized by reduction of capacities accompanied by the elimination of state aid, and followed by privatization and consolidation. Due to the restructuring efforts, the EU steel sector is nowadays not a sunset industry but a dynamic, innovative and customer-oriented industry.  The EU steel production has been stable since 1990, with only modest growths being observed over the period 2000 – 2008. Increasing demand for steel with specific properties can be expected from the renewable energy sector and public transport sector (high-speed railways).
Non-ferrous metals	All subsectors of the non-ferrous metals industry have been impacted by the crisis. Due to falling demand, European producers have been significantly reducing production and employment or mothballing capacity.	Concerning specific State Aid and/or sectoral measures there are none put in place to mitigate the situation to date on EU level. Some general measures affecting users of metals (e.g. car-scrapping schemes in EU countries etc) have an influence on demand on metals. However, metal analysts consider that these measures are merely bringing demand forward but not creating new underlying consumption.  The sector is facing a high and increasing amount of (mainly environmental) regulation. The cumulated impact as well as	No big breakthrough is expected due to mature technologies

		their interplay with a global level-playing field has not been examined in depth.	
<b>Metalworking and Metal Articles Industry (MME)</b>	<b>The sector suffered considerably as a result of the crisis.</b>	<b>An indirect impact from the automobile scrapping schemes has been felt. Incentives for short term working: Up to now the decrease in employment was relatively weak compared to the huge production decrease. Many firms were able to keep their (very well qualified) staff during the crisis, so they will be in a good starting position when demand picks up. Figures for Austria: -3,5% employment Metalworking sector, -17% production (01-11/2009 compared to prev. period)</b>	<ul style="list-style-type: none"> <li>• <b>Necessity of increased consolidation because of squeeze in the supply chain (SMEs)</b></li> <li>• <b>Increasing importance of Innovation networks, partnerships and collaboration</b></li> </ul> <p><b>Rising costs on input materials (in particularly steel)</b></p>
Mechanical engineering	The EU Mechanical engineering industry was one of the industries most severely hit by the global financial and economic crisis.		The mechanical engineering sector does not face similar structural difficulties as other industry sectors which are characterized by artificial overcapacities generated over the last years. The performance of the mechanical engineering sector is strongly dependent on the investment cycles of its clients, which explains part of the downturn due to, inter-alia, the serious problems clients of the industry faced. Especially the cycles in the machine tool segment are very pronounced. The sector is also very sensitive to the overall levels of investment, primarily in the European and more generally in the world economy.
Electrical engineering	The sector was considerably hit by the current crisis. The fall was steep because the sector was performing very well before the crisis.		Contributing substantially to the 2020 climate change targets will create a huge demand for the EEI products and a major opportunity to improve EEI global leadership, provided that EU climate change policies are well synchronised, long-term stable, and appropriately targeted and implemented.
ICT	In terms of sectors, the revenues of global ICT hardware firms have been more affected early in the economic crisis than ICT services firms. Semiconductor production fell particularly rapidly at the end of 2008 and in the first quarter of 2009, with world capacity use dropping towards 50% and semiconductor equipment manufacturers seeing very rapid falls in orders.	Economic stimulus packages to address the economic crisis affect the ICT sector directly and indirectly. Most governments plan to foster growth through long-term investments which in many cases are directly related to the ICT sector or ICT applications. Besides direct investment in broadband, stimulus packages often have a more indirect but larger impact on ICT	Globalisation has changed the landscape of ICT production. Increasing shares of both ICT manufacturing and services production are being seen in Asian countries. The economic downturn will lead to different business models and could accelerate the restructuring and consolidation process worldwide and in Europe. The most visible change is expected in manufacturing. This may trigger a new wave of mergers and take-overs, which needs to be coordinated from a European industrial policy perspective. Consolidation and restructuring of these segments is seen as crucial in terms of

		deployment and use, for example investment in "intelligent" transport systems, greener cars with more electronics and embedded software, smart buildings and electricity grids, health, the environment, and modernising public services.	regaining strength and improving competitiveness.
Motor vehicles	<p>The automotive industry was hit hard by the crisis. The commercial vehicle segment (vans, trucks, buses) has seen a much sharper downturn than passenger cars.</p> <p>Although not as visible politically, small- and medium sized automotive suppliers are having the most difficulty.</p>	Governments across the EU stepped in to support demand with scrapping schemes, which has helped to stabilise the market. Commercial vehicles have not benefited from scrapping schemes while subdued business confidence combined with lower trade and manufacturing volumes have depressed overall business investment and the purchase of investment goods by companies.	The industry has to deal with a serious overcapacity problem. Restructuring has not occurred while this would be rational from a market perspective.
Shipbuilding	<p>The global shipbuilding industry is facing today its deepest ever slump, in the absence of practically any new order since the last quarter of 2008. The most direct impacts of the economic crisis on the shipbuilding industry are already noticeable. The need for new ships is decreasing due to reduced trade volumes and hence demands for transport.</p>	Overarching policies and objectives to fight climate change and move towards a low-carbon economy provide promising new sources of growth for the sector.	<p>The structural adjustment trends affecting the industry have been present for the last decade and one can conclude that the adjustment has already taken place. No particular change of trend should be expected in the medium term. The current situation is adversely affected by the dramatic problem of overcapacity in the shipbuilding market</p> <p>Looking ahead, the European industry is expected to come under increased pressure from its Asian competitors who will attempt to enter the niche markets long reserved to European yards. As a result, European companies are expected to continue its efforts to remain innovation leaders.</p>
Aeronautics	<p>The economic downturn and especially the weakness of the financials market have reached the aviation sector and, as a consequence the aeronautics sector. The downward trend continues to have an impact on orders and deliveries figures of the large aircraft manufacturers. At the moment, production levels remain relatively stable and factories are running. However, the ramp up of production has been postponed and if deliveries continue to decline, aircraft output could be reduced in 2010.</p>	<p>The Aerofund, an equity fund launched by Airbus, Caisse des Dépôts et Consignations and Safran was launched in July 2008 capitalizing €75 million to the French aeronautics sector. France and Germany also envisage increasing the availability of export credit guarantees for aircraft produced in the EU and purchased by third country carriers. Furthermore, several Member States continue to make use of the general R&amp;D&amp;I Framework to support research work mainly of companies in the supply chain for green or very innovative products.</p>	<p>Global demand for aviation is expected to grow on average by 4-5% per year. Given the huge backlog demand especially from Asian customers, the sector is confident that sales of new aircraft will surge again from 2013.</p> <p>The aeronautics sector is currently undergoing a major change in the way how companies interact. Modelled according to the supply chain reorganisation in the automotive sector and led by Boeing, the large Original Equipment Manufacturers push for outsourcing and larger work packages to be taken over by suppliers.</p>

Defence	Overall, the impact of the recession in the short-term has been limited on the defence sector. It is a sector characterised by long-term contracts and national commitments to maintain strategic assets of the national defence industrial base		Although the short-term impact is minimal, there could be serious long-term consequences of decisions to bring forward programmes (leaving gaps in the future) and reductions in investment in defence R&D. Across Europe there are examples of programmes being reviewed, postponed and cancelled as Member States look for savings. The stagnation and, in some cases, decline in European defence spending is pushing the biggest European companies to invest overseas and, especially, in the US.
Space	The impact of the financial crisis on the satellite industry is unlikely to be felt for 2-3 years. This period is commensurate with the lead time to procure, build and launch a satellite		<p>60% of the European space segment turnover comes from institutional customers, while business cycles and market evolutions drive the 40% of the turnover achieved on the commercial space market. The economic balance of the industry depends thus on long term visibility and budgets of the institutional programmes. The recent increase of turnover to an historic height is mostly due to the recovery of the space telecommunications commercial market from the 2000 downturn. Nevertheless, with the development of the global economic crisis, and incoming competition from India and China, this positive trend can not be taken for granted.</p> <p>The situation of the European space manufacturing industry in the past decade has changed significantly. Mergers and acquisitions have restructured the manufacturing sector, starting at the higher level of the value chain (system integrators) pursuing strategies of vertical and horizontal integration. The future competitiveness of the industry will depend on sustained long term R&amp;D investments, since from concept validation to actual implementation and qualification in orbit may take up to 10 years.</p>
Security equipment and technology	The overall demand for security ‘capacity’ and, in turn, the security equipment, technology and systems required to deliver this ‘capacity’ are linked to the overall level of economic activity		Changes in the modus operandi of terrorists, of organised crime, or the occurrence of ‘new types’ of catastrophic events/crises are major drivers of both the overall level of demand for security equipment and, also, for the types of security capabilities and solutions required by the market. In this respect, the market is largely reactive, with demand responding to specific events that highlight specific security threats.
Furniture	By analysing the evolution of EU furniture production over time, it can be concluded that this sector has followed the cyclical economic development. The current economic crisis came at a moment where EU production was growing but its impact is considerably higher than in previous crisis.	There were neither state aid measures nor sectoral specific support measures put in place at EU level for the mitigation of the effects of the crisis in the furniture sector. One EGF case from Lithuania. The Spanish authorities notified the European	<p>Apart from the period 2001-2003 where the furniture sector registered drops in production, the evolution of furniture production has been positive in the latest years (though with lower growing rates than the average EU manufacturing).</p> <p>The EU industry is faced with several competitiveness challenges:</p>

		<p>Commission of three measures aiming at preserving employment in the furniture sector and to facilitate the return to the labour market of workers recently made redundant. It is likely that certain countries have provided support to furniture enterprises in the framework of the 'temporary community framework for state aid measures to support access to finance in the current financial and economic crisis'.</p>	<p>materials in the EU including wood based products and energy are among the highest priced in the world, labour costs are higher than non EU-producers (e.g. China), the growing use of packed solutions and low international transport costs have facilitated imports of furniture/furniture components from third countries and the strength of the Euro has not favoured our exports. As a response to competitive pressure, furniture companies are undertaking a process of restructuring and modernisation and developing new business models.</p>
Construction	<p>Conditions to access to credit are tightening and obtaining insurance cover is increasingly difficult. Late payment by both private and public clients tends to increase, making the financial situation of SMEs in the sector even more precarious. The new housing building segment has plunged considerably. In many countries, civil engineering works will continue to grow although at a lower level compared to previous years</p>	<p>Although the numerous recovery measures related to the construction sector seem to have influenced output, it remains difficult to assess the timing of future policy measures and the extent to which the economic slowdown will result in a wider re-structuring of the sector.</p>	<p>It appears that the supply will have to respond to an increasingly differentiated ownership and usage of premises and facility services, as well as to sustainability issues and life-cycle considerations which will become important decision-making criteria. This includes a growing importance of retrofitting of buildings and infrastructure: land-use and resources constraint will lead to opt more often for retrofitting instead of (demolishing and) building new buildings or structures.</p> <p>Large operators from the construction sector will more and more move into linked up- and down-stream services, being able to offer the design-build-operate concepts requested by the market, in particular for PPP projects. They will face more and more the pressure of international competitors on EU markets.</p>

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