



DG III

Industry



# PANORAMA of EU INDUSTRY

# 97

The key to European industry

**CORRIGENDUM  
SPECIAL  
FEATURE**

*Highlights  
of EU Industry*

*Adapted version  
(June 97):  
incorporating revised  
and updated data*

**European Commission**



### Highlights of EU Industry

Adapted version (June 97): incorporating revised and updated data

#### THE PERFORMANCE OF THE EUROPEAN ECONOMY

In 1995, the EU-15 generated almost 6 500 billion ECU gross domestic product, which represents 20% more than the USA and 70% more than Japan. The four largest Member States generated almost three-quarters of Europe's GDP, and almost 30% is accounted for by Germany alone.

After moderate growth of 2.5% in 1995, the EU economy saw weaker growth of 1.5% in 1996 (see Table 1). Growth rates over the medium term are expected to be modest, at approximately 2.5% per year over the period 1997-1999. Consumer and business confidence remain below the long-term average, but there were signs of improvement in the second half of 1996. Consumer spending has proved resilient in the face of weak income growth. Businesses are still cautious about investment plans, and while plant and equipment spending has turned up it is still low in comparison with the 1990s US investment boom and as compared with historical European experience.

Fiscal policy is being tightened in most EU countries in a bid to meet the Maastricht budget deficit target of 3% by 1997 for entry into the EMU, but the increased credibility of this budgetary consolidation process and the moderate evolution of wages has allowed an easing of monetary policy. The low interest rate profile of many countries reflects continued low inflation, with most economies still below capacity levels.

The EU continues to maintain a positive trade balance, and the international environment remains favourable, underpinning the export performance of EU countries. The US economy is expected to grow at a steady rate close to its potential value without inflationary pressures, whereas the central and eastern European countries should start benefiting from their structural reforms. The Japanese economy should continue to recover, while dynamic Asian countries should maintain high growth rates.

With the increasing globalisation of industry, the ability of the European economy to maximise its performance depends upon how well it can compete on international markets. This article will explain, in the context of a competitiveness framework, how the European economy has recently performed and identify the strongest European sectors.

#### TRADE PERFORMANCE

Figure 1 shows the trade balance of goods and services in the EU, US and Japan. A country's current account reflects its balance of overall economic relations with the rest of the world. When a country's citizens spend more in foreign countries than they earn, the current account is negative and the deficit is financed by borrowing foreign capital, selling foreign assets, or selling central bank reserves. A country achieving a surplus on its current account accumulates foreign assets.

The EU's balance for goods and services has been positive over the period 1985-94, with a low in 1989; since then the

Table 1: EU macroeconomic trends (1)

(% annual change)	1985-1990 (2)	1991	1992	1993	1994	1995	1996	1997
GDP at constant market prices	3.3	1.5	1.0	-0.6	2.8	2.5	1.5	2.4
Total number of employed	1.5	-0.1	-1.3	-2.5	-0.5	0.6	0.2	0.6
Deflator of private consumption (3)	4.2	5.6	4.7	4.1	3.2	3.0	2.6	2.4
Gross fixed capital formation at 1990 prices in construction	4.7	-0.3	0.9	-3.3	2.1	1.5	0.9	2.6
Gross fixed capital formation at 1990 prices in equipment	7.0	-0.3	-3.3	-10.8	3.2	6.3	4.0	6.2
Real unit labour costs	-0.7	0.1	-0.2	-1.0	-2.5	-1.4	-0.5	-0.9

(1) Spring 1996 forecasts; EUR15 including former East Germany from 1992 onwards.

(2) Average annual growth rate.

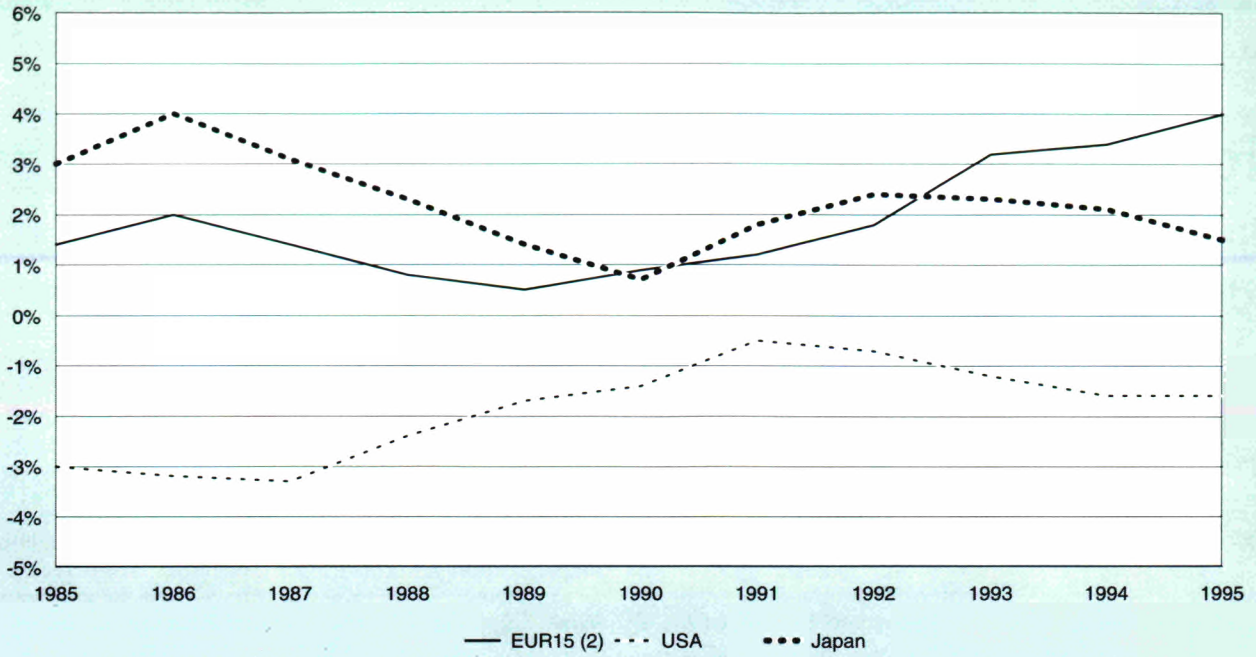
(3) In national currency.

Source: Commission Services (DG II)



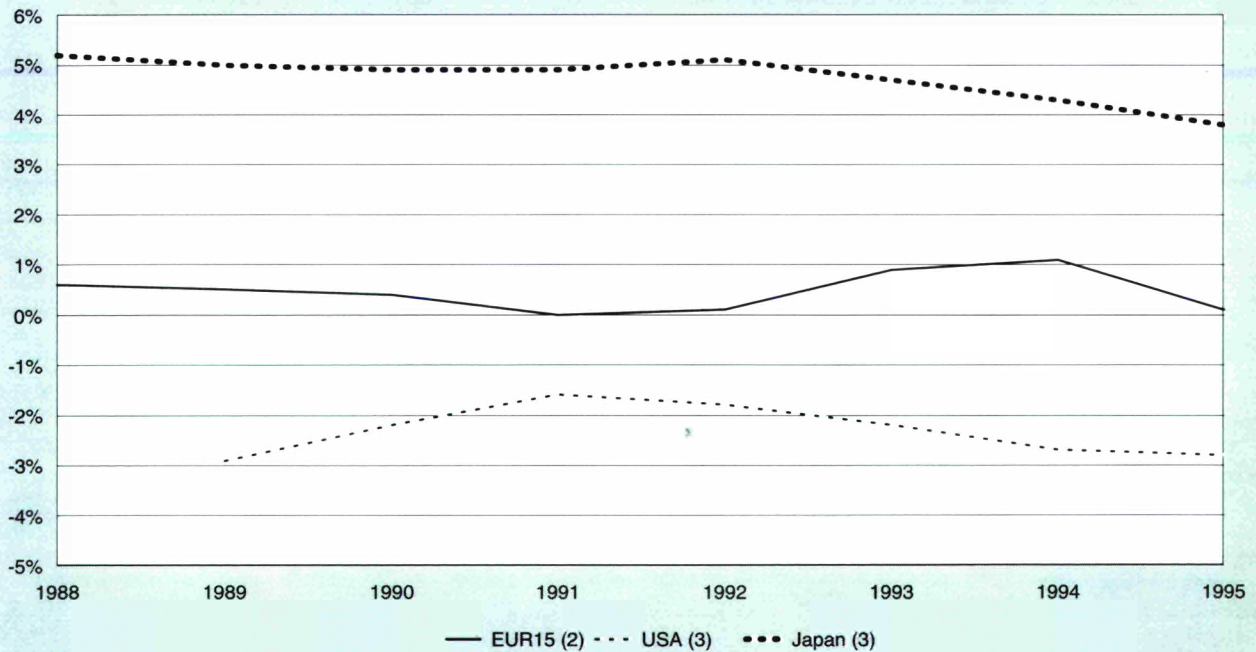


**Figure 1: Trade balance - goods and services - EU, USA and Japan (1)**



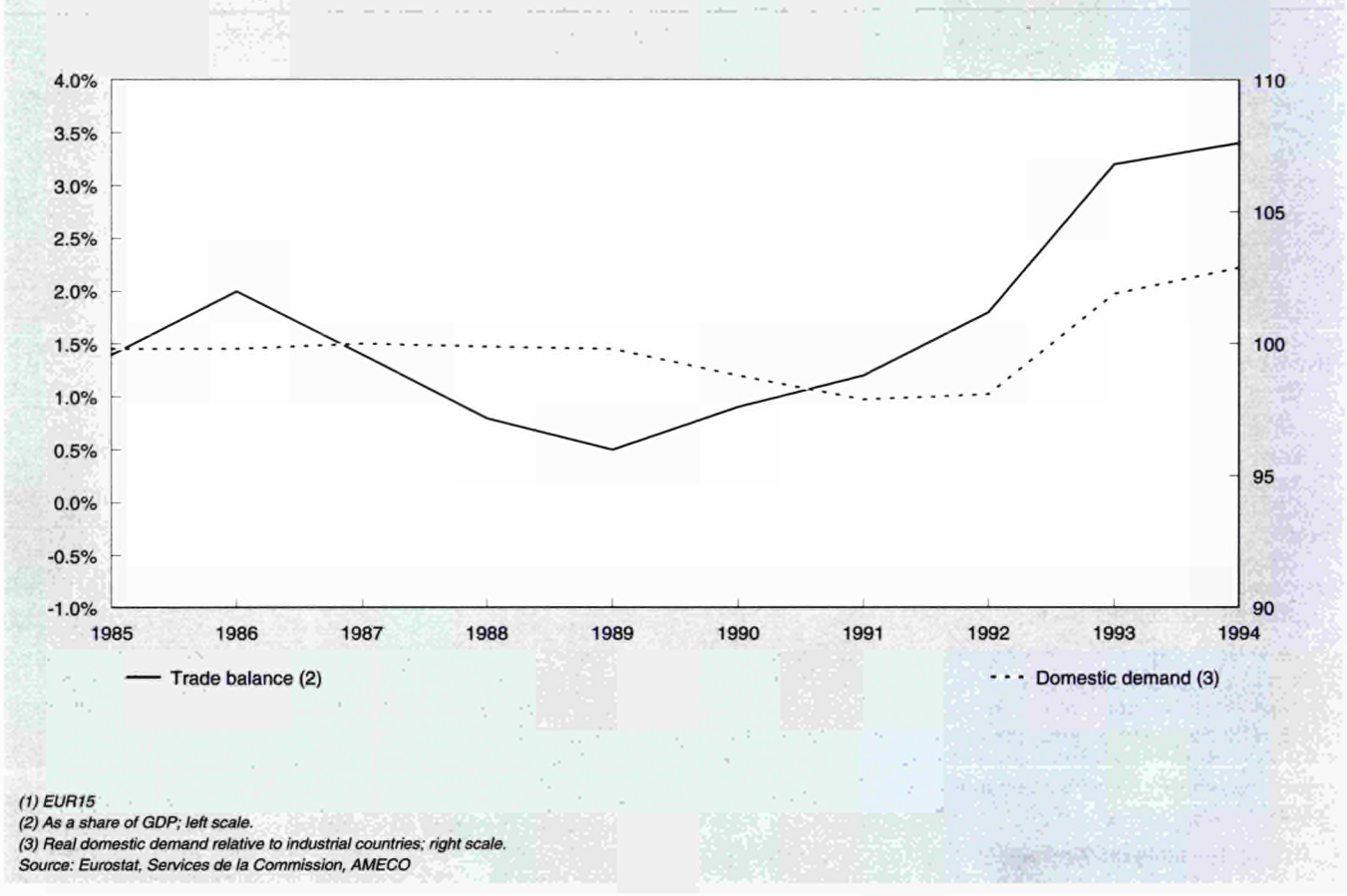
(1) As a share of GDP. Differences to previously published data are due to a move to EUR15 data.  
 (2) Excluding former East Germany.  
 Source: DG II, Eurostat

**Figure 2: Trade balance - manufacturing - EU, USA and Japan (1)**



(1) As a share of GDP. Differences to previously published data are due to a move to EUR15 data.  
 (2) Excluding former East Germany.  
 (3) Recalculated from product based UN trade data to NACE Revision 1 classification.  
 Source: Eurostat, DEBA GEIE

**Figure 3: EU trade balance in goods and services and domestic demand (1)**



trade balance has risen continuously to 1995. Japan's trade balance also posted a surplus over this period. Before 1992, the surplus relative to GDP has been greater for Japan than that of Europe, while recently the EU has overtaken Japan in this respect. Meanwhile, the US trade balance has run a deficit over the same period, showing an almost mirror image to that of the EU and Japan, narrowing the gap up to 1991 and then deteriorating thereafter, levelling between 1994 and 1995.

The balance of goods and services can be broken down into three components: the balance of services, the balance of primary commodities (energy products, agricultural products and other raw materials) and the balance of manufactured goods.

In Figure 2, the EU shows an approximate zero trade balance in manufacturing. Since 1989, the increase in the overall positive trade balance for the EU is mainly due to the improvement of primary commodities and a surplus in services. In comparison, Japan's trade balance in manufacturing is much higher than its overall trade surplus. The country relies heavily on exports of manufactured goods to pay for the imports of raw materials, for energy products and to cover its trade deficit in services. The USA registered a deficit in the trade of manufactured goods over the period, larger than the total balance of goods and services, showing the reliance on services and primary commodities.

To some extent, changes in the trade balance are related to lagged changes in domestic demand. If an economy experiences faster growing domestic demand relative to its trading partners, this will fuel imports and tend to depress the country's trade balance. Figure 3 shows real EU domestic demand relative to that in the industrialised countries. Here we see that faster demand outside the EU in the early 1990's increased EU exports and boosted the trade balance. In the late 1980s, however, there seems to be less correlation.

**FACTORS AFFECTING PERFORMANCE**

Between 1985 to 1995, the ratio of world exports to GDP has grown from just under 20% to almost 25%, with Western Europe's ratio of exports to GDP now at 32%. The opening of national economies to world market forces has been a catalyst for restructuring, driven by intense global competition, new technologies, and rapidly changing consumer markets. Increasingly, companies are re-organising production along broader geographical lines to optimise the skilled labour, technology, and markets at each stage of the production process. This has resulted in the emergence of global production networks and increased the speed at which inefficient firms disappear while stimulating the growth of productive firms and new industries.

The material content of products and services now accounts for less of total value added, while scientific knowledge continues to increase rapidly, making technology, skills and products out-of-date within a short time frame. The fundamental global shift from material to knowledge-based comparative advantage means that nowadays static natural assets do less to shape a region's economic performance than do dynamic, purposefully-developed resources such as skilled and adaptable people, accessible technology, available financial capital and advanced physical infrastructure.

Together, these changes are "tightening" manufacturing functions, R&D, design, component production, assembly, distribution and marketing, to allow manufacturers to utilise just-in-time supply links, and anticipate necessary changes in the marketing and distribution of goods. This creates concentrations of competing, complementary, and interdependent firms across several industries, including component suppliers, service providers, and final product manufacturers.



**Table 2: Structure of R&D spending in the EU, USA and Japan, 1993**

(% of GDP)	EU (1)	USA	Japan
Total R&D spending	2.0	2.7	2.9
Share of total R&D performed by business (%)	62.8	72.8	66.6
Share of total R&D financed by business (%)	53.0	57.4	68.2
RSEs (units per 1000 labourforce) (2) (3)	4.6	5.9	9.7
Business RSEs (units per 1000 labourforce) (3)	2.3	4.5	5.6

(1) EUR15 excluding Luxembourg.

(2) RSE: Research Scientists and Engineers.

(3) Eurostat estimates for EU.

Source: Eurostat, OECD

Given these developments, the following four factors now constitute the basis for a competitive business sector:

- Strong, flexible economic infrastructure provides the foundation for industry to grow and transform over time as the global economic environment changes. Greater competition and smaller public-sector budgets furthermore mean that there is an increasing need for greater public-private collaboration in diagnosing economic needs and developing solutions, as the most effective way to boost economic infrastructure competitiveness.
- The relationships between firms, the core and support industry segments through communication, partnerships and alliances are important in stimulating competition and boosting efficiency and innovation through close cooperation between firms: both of these are important to achieve and sustain comparative advantage in the ever-changing global marketplace.
- To meet changing market conditions, many companies have restructured their internal organisation and introduced flatter, decentralised structures, with continuous improvement, knowledge-based IT systems and quality management. New working practices implemented include greater internal flexibility, multi-skilling, greater use of temporary and part-time workers, increased training and devolved responsibility.
- While managing an efficient and competitive supply structure creates the potential for high performance, business as a whole must be market focused, picking up on the trends in global demand, to ensure that they maximise performance by targeting the promising growth sectors.

The world economy has become a mosaic of economic regions and industries driven by global trade, investment, and technology flows. This trend has produced and will increasingly require new forms of collaboration among the nations and regions involved. Success will be for those who can influence their economic performance by strengthening their base of industrial clusters and economic foundations; with limited natural resources. Japan is a strong example of how this can be achieved.

Many of the determinants of competitiveness in the above framework are discussed in the Panorama horizontal chapters; for example, the next chapters include a discussion of the importance of management practices, the role and level of intangible investments, Europe's export growth markets, the impact of the Internal Market programme, Europe's largest companies, and an analysis of links with and performance of the Central and Eastern European economies. Here, we consider the external environment factors; how the cost, the efficiency and interaction of these factors influence how successfully the economy can generate employment and productivity.

## THE ECONOMIC ENVIRONMENT AND FOUNDATIONS

Economic infrastructure can best be defined by the range of inputs to the economy: tax and regulatory system, technology, human resources, financial capital and the physical infrastructure. One of the conditions for competitiveness is that the supply of infrastructure meets the demands of industry.

### Technology

Technical progress, one of the main sources of long-term productivity growth, is determined by the level and efficiency of intangible investment. The discovery and development states of technological capability can be measured by R&D intensity, the number of registered patents or the rate of innovation.

In Europe, the share of R&D in the total sales of the largest companies is higher than the figure for the US or Japan in a number of key sectors, such as pharmaceuticals or aerospace, but is less than that of its competitors in other important sectors such as computers and office equipment, or electrical engineering.

Meanwhile, total R&D expenditure as a share of GDP in Europe (2% in 1993) is below the US (2.7%) and Japanese (2.9%) levels (see Table 2). This partly reflects the fact that R&D is typically undertaken by the larger firms, and that the industrial structure in Europe is more skewed towards SMEs than towards large industrial giants.

Table 3 shows the share of EU, US and Japanese patent registrations in each of the regions. Quite naturally, there is a dominance of national patent registrations in each region, with

**Table 3: Share of total patents, 1993-1994**

(%)	1993	1994
<b>Share of patents granted in Europe</b>		
EU (1)	53.5	51.0
USA	23.3	23.1
Japan	20.5	22.8
<b>Share of patents granted in the USA</b>		
EU (1)	17.4	16.5
USA	54.1	55.1
Japan	22.7	22.0
<b>Share of patent applications in Japan</b>		
EU (1)	5.9	5.3
USA	6.0	5.9
Japan	87.5	88.3

(1) EU stands for EPC States which include all the Members States of EUR15, except Finland, plus Switzerland, Liechtenstein and Monaco.

Source: European Patent Office, US Patent and Trademark Office and Japanese Patent Office



**Table 4: Share of total patents applications in Europe by sector, 1994**

(%)	EU	US	Japan
Total share of patent applications in Europe	51	23	23
Food, drink and tobacco	42	27	9
Electrical machinery	37	25	20
Chemicals	32	36	15
Paper and printing	28	25	29
Transport equipment	50	18	10
Metallurgy	31	29	25
Textiles	43	20	14
Building	61	9	5
Mining	31	45	5
Engineering	46	23	13
Instrument engineering	24	35	27
Electronics	29	30	25

Source: European Patent Office

the US dominating the share of patents by region of origin in the US and the EU patents accounting for more than half of all patents registered in Europe. Even so, comparison of the share of patent applications in Europe by industrial sector shows a relative dominance of the US and Japan over the EU in high technology sectors such as electronics or instrument engineering. Important sectors in which the EU is best positioned compared to the US in terms of number of patents include transport equipment, engineering and food, drink and tobacco.

Spending on R&D is, however, only an "input" and not a measure of success. Deployment, the identification, acquisition and adaptation of existing technology are also essential to bring new products to market. Here, many of the emerging Asian countries have been extremely successful thanks to proactive government policies encouraging the deployment and diffusion of technology. In Europe, rigidities in company structures and weak linkages between firms appear to work to impede the development of new products and processes. The European Information Technology Observatory (EITO), for example, estimates that out of the volume of potential business of 743 billion ECU in Information Technology, only 282 million ECU was realised in 1994. More open and flexible organisational structures are needed thus to boost the European technology performance.

### Human resources

In view of the speed of change of technology, organisational production and distribution systems, a well educated workforce, trained on an on-going basis, is especially important. As indicated in the article on Future Trends in Employment at sectoral level, the continuing integration of new technologies into economic activities will mean that a higher average skill level will be required in Europe, as technological progress and innovation reinforce the shift away from single function jobs towards multi-skilled, flexible jobs within manufacturing, and a trend away from manufacturing employment into logistics and administrative jobs.

In all EU countries, public expenditure on education is substantial and, at 5% of GDP in 1992, is broadly comparable to that in the USA (5.2%) and higher than that in Japan (3.5%). While inter-country differences in the levels of education and training are difficult to identify due to problems of comparability of statistics, in most EU Member States there is a clear trend in rising qualification levels, particularly in Greece, Spain, Ireland, Italy and Portugal.

Despite this increase in general levels of educational attainment, skill shortages can still be a problem, arising from the lack of occupational and/or geographical mobility within the

EU. This lack of mobility partly reflects cultural factors, but is reinforced by differences in the regularity and fiscal environment across countries. In contrast, in Asia and in Central and Eastern Europe, recent emphasis on the development of human skills is leading to the emergence of a dynamic, well-educated and (comparatively) lower-cost work force that will increasingly challenge the west European work forces.

The Commission's report on European competitiveness advocates validating skills from other Member States. Improving the transparency of qualifications, and benchmarking European vocational qualifications at a high level would enable employers to objectively evaluate the skills of employees and Member States to assess their progress in achieving appropriate skill levels. A process type standard could be comparable to the idea of open product standards.

### Financial capital

The accessibility to and competitive cost of capital and finance are essential for the initiation of business, for expansion/modernisation and for restructuring purposes. Within the EU, financial markets are generally very well developed, although the European Commission's Competitiveness of EU Industry Report ref: CO 95/96/245 confirms that the cost of capital is higher in Europe than in the United States and Japan and that the cost of capital is higher for smaller countries.

In particular, Europe is less efficient to mobilise capital to finance the development of small and medium sized enterprises (SMEs) or of innovative technology based firms, and this often results in a loss of opportunity; for example in biotechnology, there has been more rapid development outside Europe, particularly in the USA, with some existing EU businesses relocating to non-EU countries.

In the USA, venture capitalists can pool capital in special fund structures, while in Europe the equivalent fund structures do not exist. There are important legislative gaps, administrative and regulatory barriers and as such many Member States do not have fund structures that suit local and foreign investors. The Investment Services Directive and the creation of pan-European equity markets that seek to attract high-technology companies, like the Nouveau Marché and European Association of Securities Dealers Automatic Quotation (EASDAQ), can help to resolve the geographical mismatch between investors and investment opportunities and facilitate SMEs' access to financing.

### Tax and regulatory system

All structural elements that restrict competition in the value-chain (state aids to industrial sectors, market dominance or barriers to entry) increase factor prices, thus limiting the at-

tractiveness of European products in global markets. The lowering of trade barriers between the EU and other countries, and within the EU with the Internal Market Programme, has largely contributed to the globalisation process and presents both new opportunities and challenges for EU companies.

Despite the costs of certification, the development of harmonised standards increases trade possibilities. In the EU, standards harmonisation has allowed firms to grow in size and benefit from economies of scale. In addition, by influencing the rate of development of products in some sectors, for example in the electronics sector, standardisation has led to faster product and application development, hence giving a competitive edge to those companies best at innovating (see the article on the impact of the Internal Market Program on EU industry, page 29).

To protect the knowledge base content of products, the Agreement on Trade Related Aspects of Intellectual Property Rights (IPRs) in the framework of the World Trade Organisation allows enterprises to operate on international markets while ensuring that IPRs enjoy equivalent protection in third countries. The parallel development of international licensing rules and competition policy are also crucial to encourage the widespread diffusion of knowledge while avoiding anti-competitive behaviour. The emergence of IT and global communications require harmonised approaches to security, protection of privacy, personal data and use of encryption devices.

Meanwhile, in terms of foreign direct investment and relocation decisions, the regulation of business and equipment operations, land-use, environment, health and safety also dramatically affect the attractiveness of a region. The social insurance system for unemployment compensation and workers' compensation affects companies' costs. All taxes including business, property, operations, corporate income, personal income, use, value-added taxes affect the efficiency and competitiveness of the economic environment in which companies operate. In this respect, high productivity and specialisation are needed to compensate for a relatively highly regulated environment. Evidence of success in some countries indicates that liberalisation especially of business services speeds up the economic transformation by providing incentives to create new markets and processes. For example, in Denmark, the liberalisation of markets and use of new communication services was responsible for 60% of new private sector job creation.

### Physical infrastructure

Physical infrastructure represents the essential 'public good' business support services that firms share but cannot provide for themselves - at least not individually. Transport, telecommunications and energy are the principal types of physical infrastructure networks. The need to develop and extend these networks within the EU and to neighbouring regions has been recognised in the Delors White Paper on "Growth, Competitiveness and Employment" ref: COM/93/700 in order to facilitate trade and other exchanges, and a number of investment programmes are under way (see in particular in the energy chapter, and in the monographs on telecommunications equipment and services, as well as in the construction chapter).

Increased emphasis on such factors as just-in-time and short production cycles, have increased the reliance on transportation. In some sectors, the share of logistics in the product cost has increased from a few percent to some 40% today. In the EU, although transport networks are well developed in comparison with many regions of the world, deregulation of transport, which is largely underway in the road and air transport sectors, has not yet spread to the other transport segments.

According to the European Round Table of Industrialists (ERT), in certain regions of the EU telecommunication services cost up to 22 times the cost of similar services in the USA. The fragmentation of the EU telecommunications market and

uncompetitive pricing due to the presence of a single operator hinders the development of new services. The "Growth, Competitiveness and Employment" White Paper outlines a programme to upgrade the EU's telecommunication network, which will be needed by EU businesses to remain competitive in the global environment.

Energy costs are presently estimated to represent between 5% and 17% of direct costs in manufacturing industries. Prices in the gas market have fallen in parallel to oil prices but remain on average 30% higher than US prices. The price difference for electricity is at 50%. In June 1996, the Council adopted a common position on the proposal for the internal market for electricity. With security and stability factors ensured, increased levels of competition should drive energy prices down and reduce price disparities between regions and countries.

### Summary

Compared to other regions of the world, the EU still has improvements to make in many areas of price and non-price competitiveness, some of these mainly concerning governments (regulatory environment, infrastructure development, labour market regulations and costs). Through their own strategies companies can, however, also act on some of these factors in order to improve their overall competitive position.

The improvements in competitiveness that can originate from within business are of two types: improved management and organisational structures within the firm, and the building of stronger linkages between firms in order to maximise efficiency and economies of scope, through partnerships and collaboration at pre-competitive levels. The article on the impact of management practices, on page 71, provides evidence of the types of benefits that can be attained competitiveness-wise by improving the company's own organisational structures. Here, we focus more on the kinds of benefits that can be obtained through co-operative processes, or by strengthening linkages between firms throughout the production chain.

### RELATIONSHIPS BETWEEN FIRMS

Competitiveness requires both strength and flexibility; as such, the trend amongst business organisations in Europe and worldwide has been for increased specialisation and a tightening of the manufacturing process through the development of partnerships and increased interdependence of firms.

Companies are increasingly participating to complex networks organised either on a local scale (clustering) or international scale (global production networks, or GPNs). In sectors such as textiles and clothing, semiconductors, electrical engineering, production is increasingly spread out geographically and across companies through networks of alliances and global partnerships. For example, in the semiconductor sector, as for most high technology equipment sectors such as aerospace or telecom equipment, alliances are increasingly formed at the R&D stage and some at the production and distribution stages. Alliances are furthermore geographically widespread. In the case of consumer products such as food and drink or textiles and clothing, alliances and partnerships are rather developed at the production and marketing stage, as the key is to reduce costs (for example by sharing distribution networks), and in some cases just to gain access to markets distribution networks.

However in many sectors, local proximity remains a key to success, either because firms need to have access to the local resources that are needed for production (fruits and vegetables, or fish, in the case of food processing industries) and because of the need to limit transport costs, or to ensure JIT delivery. For example in the autos industry, increased out-sourcing and subcontracting, and the development of a tiered supplier struc-



ture, have encouraged regional industrial clusters with support services building up around large plants.

Another trend in the changing relationships between firms, beyond the emergence of global production networks, is the increased reliance on subcontracting and the growing outsourcing of activities that were previously conducted within the organisation (often service activities - explaining the growing tertiarisation of the economy, but in some cases also of manufacturing activities through divestment of non-core activities and a reversal of the trend towards vertical integration). In the autos sector, for example, the production of components and motors vehicles assembly have grown further apart, as the main auto makers divested from component manufacturing to increase the flexibility of supplies - and reduce costs. In textile and clothing, food processing, and even chemicals manufacturing, a similar trend is noticeable.

In general, increased subcontracting and out-sourcing of non-core activities such as design of product development, or component manufacturing, or services, and the reduction in the number of subcontractors make companies principally selling to businesses more dependent from their principal customers; while giving the latter increased flexibility and allowing them to reduce costs by maximising efficiency in the production and distribution of inputs needed for production. On their part, the subcontractors must then constantly develop new skills and bear an increasing proportion of the costs and risks, in order to produce "just-in-time", guarantee product quality and meet increasingly stringent environmental standards. Indeed, supplier and sub-contractor quality is decisive since weaknesses in one of the links in the production and marketing chain can constitute a significant handicap for the entire sector.

It is important to stress that much innovative activity results from the dynamic relations between actors, rather than from the simple transfer of information or technology. The Community Innovation Survey found that external sources (suppliers, customers, competitors, business services) are more important drivers of innovation than internal sources or traditional research establishments. For SMEs, these external sources are markedly important with the feedback loops between different actors especially relevant. The survey shows that firms who engage in technical co-operation with an external partner tend to have a larger proportion of new or improved products in their total sales.

Union of Industrial and Employers' Confederations of Europe (UNICE) statistics show that, on a comparative scale representing research co-operation with firms in other regions, Japan shows the highest level of extra-region co-operation, with USA representing 80% of Japan's activity and Europe only 40%. However, since knowledge is often locally generated, much co-operation is currently inter-regional.

It is difficult to estimate the precise extent of sub-contracting in the European economy. The purchase of goods and services is an imperfect yardstick since it also includes purchases of raw materials and energy. However, that measure shows that sub-contracting is widespread with the purchase of goods and services equivalent to more than two-thirds of turnover in manufacturing industry and some three-fifths of that of the construction industry. Horizontal linkages between suppliers are, however, weak.

### Private-public collaboration

Public-private collaboration is decisive in improving competitiveness as it can allow to improve linkages between firms, enable subcontracting to expand and ensure infrastructure support that meets business needs. For example, during the 1980s and early 1990s, European suppliers of consumer electronics were steadily losing ground to foreign competition, due mainly to the uncompetitive quality, price and delivery time of components found in Europe. In response, the European Commission and Japan's MITI were asked by manufacturers to

support efforts to improve the competitive position of European suppliers. The pilot programme for consumer electronics that was launched as a result helped to build better links between firms and use best practices from more efficient suppliers. Industry associations and their clients (both European and Japanese) identified general weaknesses and audited a selected number of suppliers' performance. The group of suppliers then spent about two weeks in Japan visiting the plants of their counterparts, to see what differences exist that might explain the reputedly greater competitiveness of Japanese suppliers. Following the mission, European suppliers devised and implemented improvement programmes with the help of specialists and their clients.

To stimulate and strengthen inter-firm linkages, the European Commission plays a main role in seeks to encourage co-operation, on a cross-border level, through the fourth Framework Programme. This provides funding of 12.3 billion ECU for co-operative research projects over the period 1994-1998.

## MEASURES OF EU COMPETITIVENESS

EU, US and Japanese relative measures of competitiveness should be reviewed with care, but do give broad indications of trade competitiveness, trade patterns and specialisation. Figure 4 show indicators of EU cost competitiveness and the various factors indicating unit labour cost. While for an individual firm or sector, intermediate materials and components often represent a major part of production costs (see sectoral analysis), labour is by far the most important cost component for the economy.

Changes in unit labour cost can be separated into two components: changes in wage rates and changes in real labour productivity. For each of these variables, a competitiveness indicator has been calculated by Eurostat, which compares changes in the variable against the US and Japan. These indicators are all part of Eurostat's Competitiveness database. In the case of nominal variables (unit labour costs and wage rates) the weighted sum is based on current exchange rates while in the case of the real variable (labour productivity) it is based on constant 1990 exchange rates.

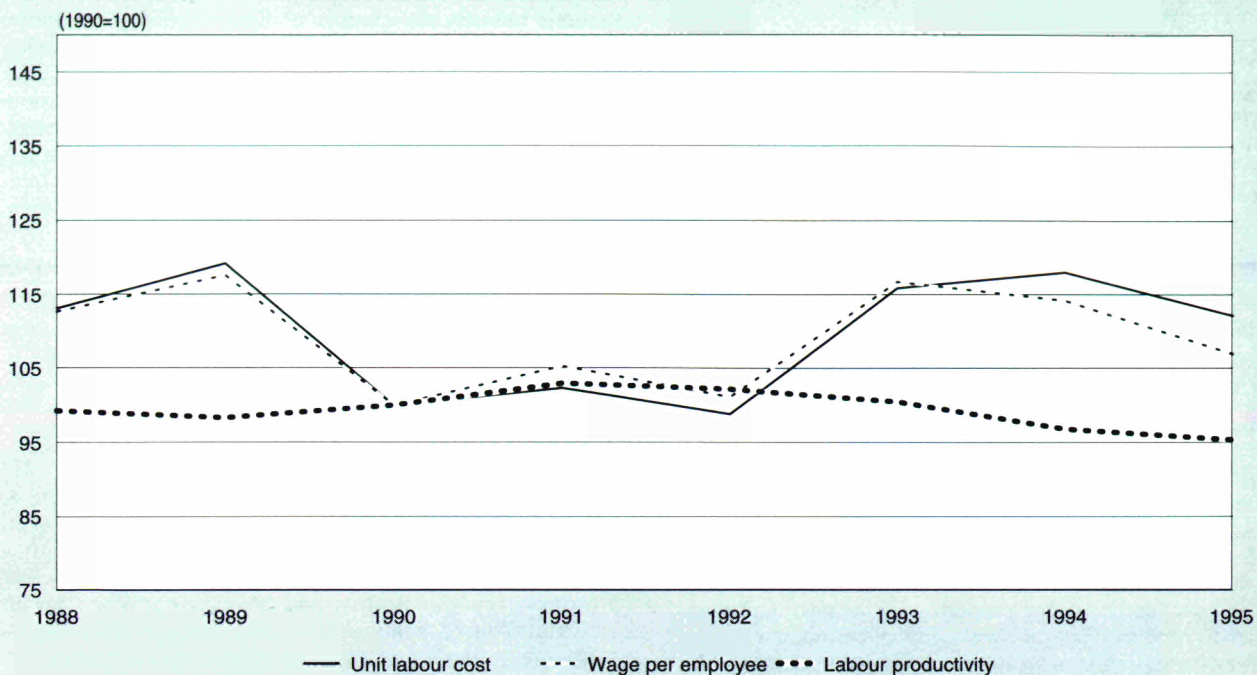
In terms of productivity, the EU position has remained fairly constant over the period considered. The EU manufacturing industry has achieved productivity gains which on average have been similar to those observed in the US and Japan.

Therefore fluctuations in the unit labour cost competitiveness are similar to fluctuations in the wage rate competitiveness. The most important determinant of the evolution of labour cost competitiveness has been the exchange rate. The effective exchange rate is the weighted average exchange rate of a country's currency against the currencies of its trading partners, where the values of mutual trade are used as the weights.

The unit labour cost indicator and the effective exchange rate have mirrored each other throughout the period. Between 1984 and 1990, the appreciation of the ECU (mainly due to the depreciation of the US dollar) accounted for the rise in comparative unit labour costs and the loss of the EU labour cost competitiveness.

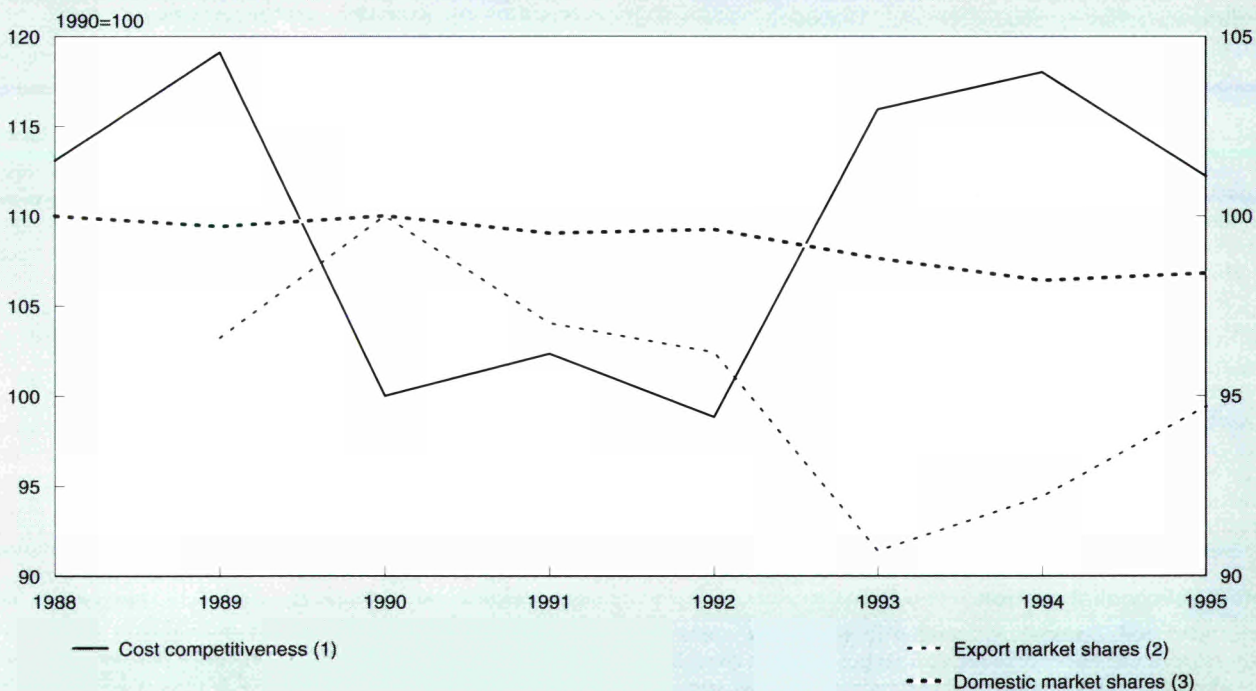
Figure 5 shows EU cost competitiveness and market shares on domestic and export markets. The market share indicator on export markets measures the share of EU exports in Triad (EU, US and Japan) exports. The indicator of the domestic market share has been calculated as the rate of coverage of EU domestic sales of manufactured goods by EU production, divided by the same ratio for the entire OECD. A decline of this indicator means that the EU supplies relatively less of its home market than the OECD countries. The fit between cost competitiveness and market share is very loose, even when the cost indicator is lagged.

**Figure 4: Indicators of EU cost competitiveness - manufacturing industry (1)**



(1) Each indicator measures the improvement/deterioration of the corresponding cost item. Differences to the published data are due to a move to EUR15 data and the fact that competitiveness indicators are now calculated against all OECD countries rather than just the TRIAD, combining domestic and export markets. Source: Eurostat

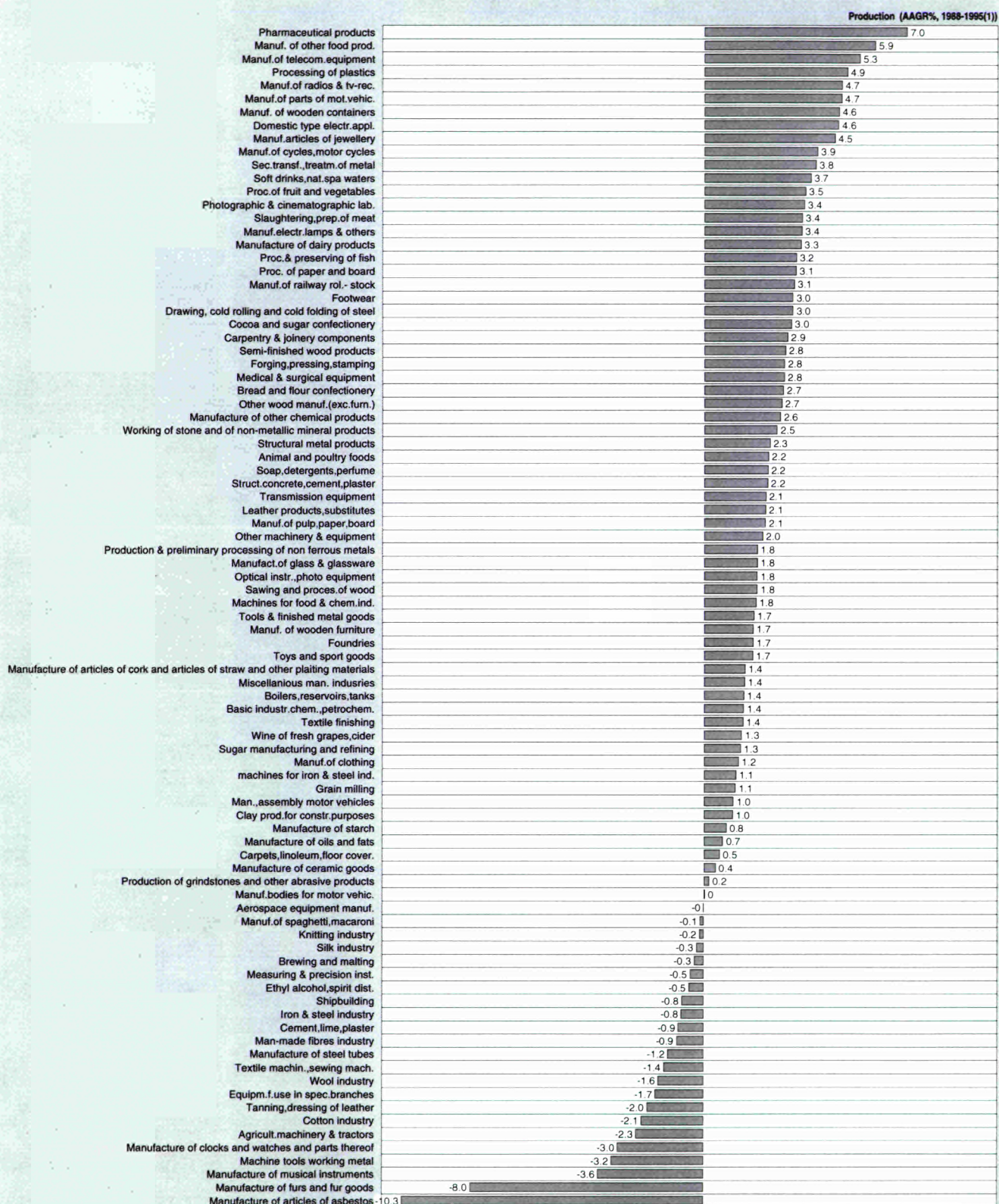
**Figure 5: EU cost competitiveness and market shares - manufacturing industry**



(1) Indicator of unit labour cost competitiveness; left scale. Differences to the published data are due to a move to EUR15 data and the fact that competitiveness indicators are now calculated against all OECD countries rather than just the TRIAD, combining domestic and export markets. (2) Indicator of the share of EU exports in OECD exports. Differences to the published data are due to a move to EUR15 data. Source: Eurostat



Figure 6: Industrial output growth by sector, 1988-1995

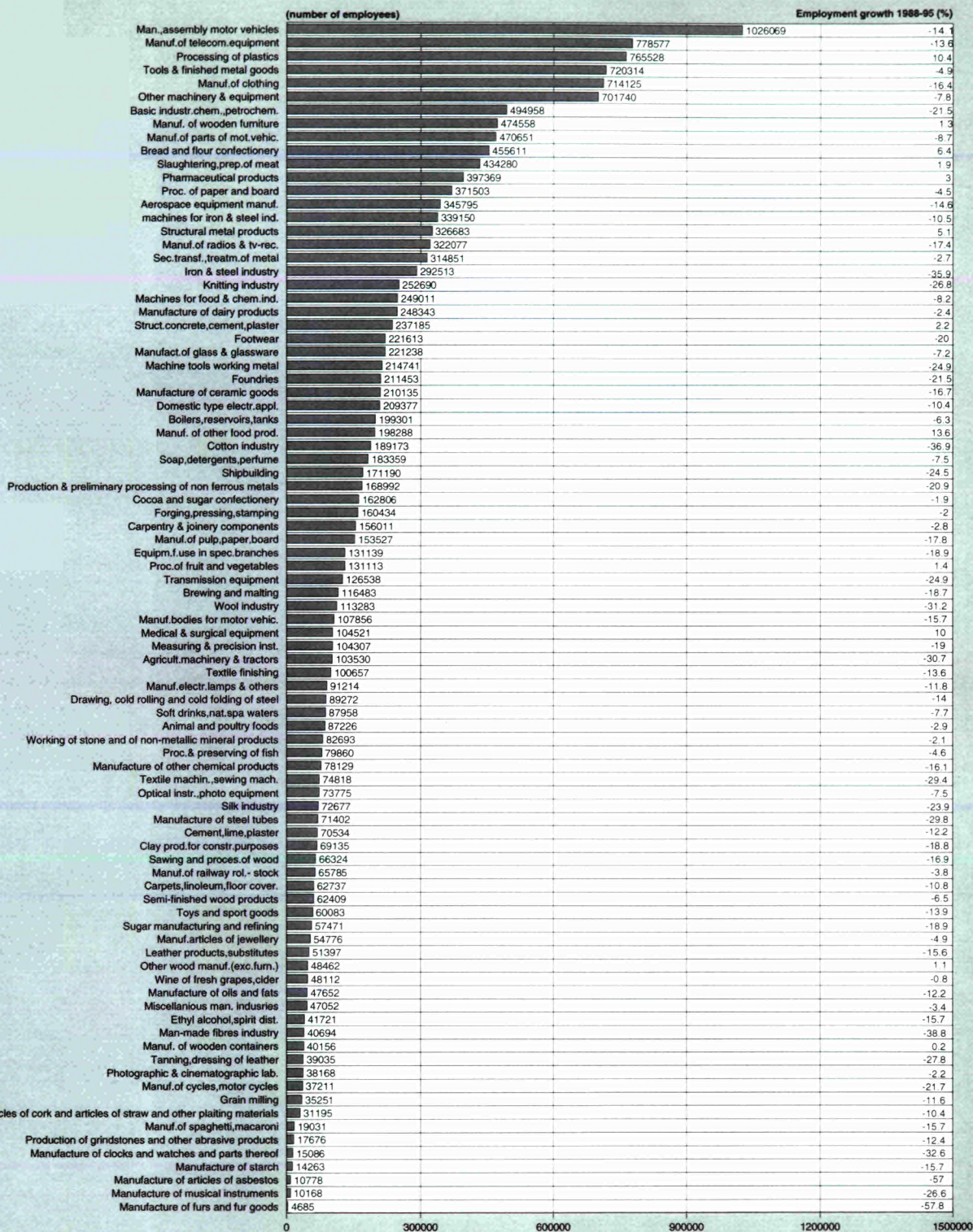


(1) Estimated; calculated using production in constant prices (1990=100) Industrial classification level of detail based on 3-digit level Nace Rev 1. See Timeframe and Statistics page IX for details.

Source: DEBA GEIE



Figure 7: Employment in EU industrial sectors, 1995 (1)



(1) Estimated.  
Source: DEBA GEIE



Indeed, while aggregate demand and cost variables may help to explain manufacturing trade performance and competitiveness, there are many factors and a disaggregated sectoral approach gives greater detail.

## PERFORMANCE BY SECTOR

The EU economy is increasingly service-oriented, with market services accounting for 51% of GDP in 1995. Government services represent 14% bringing the total share of services in GDP to two-thirds.

Manufacturing now represents 22% of GDP in 1995, with agriculture (2%), energy (5%) and construction (6%). Within manufacturing, food, drink and tobacco processing is the largest sector representing 3% of GDP, with electrical engineering at 2.2% and mechanical engineering with 2.1% of GDP.

The different sectors are achieving very different levels of performance (Figure 6). Within a broad framework, the consumer industries, having finished the first wave of restructuring, have stabilised relative to other sectors in the economy.

The other food products sectors, which includes products such as tea, coffee, diet products, condiments, etc. has been the fastest growing segment of food and drinks over the past years, growing at nearly 6% per year between 1988-95. Meat, fruit and vegetables and soft drinks show growth of over 3%, bread and cocoa and confectionery show growth of nearly 3%. While the other food sectors showed slower growth, no sector showed declining production during this period.

Growth in the electronics sectors has been good, ranging on average between 3% to 5% per annum between 1988-1995. Of particular note, telecommunication equipment showed growth of 5.35%, consumer electronics 4.7% and domestic electrical appliances 4.6%. Output in these information technology-related sectors shows the increasing penetration of personal computers and new telecommunication equipment into European business and homes. Part of the growth actually reflects a catch-up, as the spread of information and communication technologies in Europe still lags the USA and Japan.

Due to production consolidation and globalisation, export intensity and import penetration for electronics products have both risen over the period (Figures 8 and 9 given at the end of the article). Other sectors which have posted a significant increase in export intensity and in import penetration are manufacturers of bodies for motor vehicles, aerospace, leather products (furs and fur goods, along with the tanning and dressing of leather) and other wooden products. This reflects increased two way trade in these sectors' products at different stages of processing.

Consumer products in the chemicals sector have performed well over the period 1988-95, with pharmaceuticals showing nearly 7% growth per year, household and office chemicals 2.6% and soaps, detergents and toiletries 2.2%.

Investment industries are still recovering from the recent weak income growth and uncertainty about future production needs while large industry-wide restructuring takes place. The capital goods producing sectors suffered disproportionately in the latest recession, due to the fall in fixed business investment. With intermediate goods industries, the picture is mixed with many industries still in flux, depending upon the end consumer markets being served and how far the restructuring in these downstream demand industries has stabilised.

In the early 1990s, output dropped in mechanical engineering, iron and steel and construction and remained at particularly low levels in the and non-ferrous metals industries.

Because of increased sub-contracting, the parts and accessories for motor vehicles sub-sector has seen much higher growth (on average 4.7% per year between 1998-95) than the manufacture of bodies for motor vehicles (1%) or the assembly of motor vehicles (no growth). The manufacture of cycles and motor-cycles showed good growth of nearly 4% per year, with railways at 3%. Aerospace showed no growth, while shipbuilding decreased slightly each year. In all sectors, restructuring meant a loss of employment, the more so in sectors where production growth was low (Figure 7). The trends in employment by sector are reviewed in more detail in the article on employment (page 79).

Motorcycles continue to show higher import penetration than other sectors. Due to the locally based, regional clusters of

**Table 5A: Sectoral breakdown of EU exports and imports, 1994**

(%)	Share in total manufacturing exports (ratio)	Share in total manufacturing imports (ratio)	Export specialisation (1)	Adjusted cover (2)
Mineral oil refining	2.1	2.2	1.31	0.94
Preliminary processing of metals	5.2	7.9	0.89	0.66
Non-metallic mineral products	2.2	1.2	1.20	1.85
Chemicals and man-made fibres	14.2	10.1	1.11	1.41
Metal articles	3.6	2.8	1.15	1.29
Mechanical engineering	17.5	8.5	1.27	2.07
Office machinery and data processing mach.	3.0	7.0	0.66	0.43
Electrical engineering	12.5	15.3	0.84	0.82
Motor vehicles and parts	9.6	5.9	0.73	1.63
Other means of transport	5.7	5.4	1.11	1.06
Instrument engineering	2.5	3.4	0.88	0.75
Food, drink and tobacco	7.1	6.0	1.11	1.19
Textiles	4.1	5.2	1.17	0.79
Leather and leather goods	0.9	1.1	1.72	0.84
Footwear and clothing	3.1	6.5	1.34	0.48
Timber and wooden furniture	1.6	3.8	0.76	0.41
Paper, printing and publishing	2.6	5.1	0.74	0.52
Rubber and plastics	2.9	2.6	0.95	1.13
Other manufacturing industries	8.3	7.4	1.27	1.13
Total manufacturing	100.0	100.0	1.00	1.00

(1) Share of sector in total EU manufacturing exports divided by the same share calculated for the OECD.

(2) Sectoral cover ratio (i.e. exports divided by imports) adjusted for the overall cover ratio of manufacturing industry.

Source: Eurostat, DEBA GEIE



**Table 5B: Sectoral breakdown of USA exports and imports, 1994**

(%)	Share in total manufacturing exports (ratio)	Share in total manufacturing imports (ratio)	Export specialisation (1)	Adjusted cover (2)
Mineral oil refining	1.1	2.0	0.70	0.57
Preliminary processing of metals	3.6	5.3	0.62	0.68
Non-metallic mineral products	0.9	1.3	0.51	0.70
Chemicals and man-made fibres	12.7	6.6	0.99	1.91
Metal articles	2.4	2.4	0.75	0.99
Mechanical engineering	14.0	8.7	1.02	1.61
Office machinery and data processing mach.	7.9	8.4	1.72	0.94
Electrical engineering	19.6	17.5	1.32	1.13
Motor vehicles and parts	11.3	17.2	0.85	0.65
Other means of transport	8.2	2.3	1.62	3.55
Instrument engineering	3.2	2.9	1.11	1.10
Food, drink and tobacco	3.6	1.9	0.57	1.87
Textiles	1.7	3.3	0.48	0.51
Leather and leather goods	0.3	0.9	0.49	0.30
Footwear and clothing	1.1	6.7	0.47	0.16
Timber and wooden furniture	1.6	2.9	0.81	0.57
Paper, printing and publishing	3.4	2.4	0.95	1.37
Rubber and plastics	2.6	2.4	0.85	1.11
Other manufacturing industries	6.1	8.1	0.92	0.75
Total manufacturing	100.0	100.0	1.00	1.00

(1) Share of sector in total EU manufacturing exports divided by the same share calculated for the OECD.\*

(2) Sectoral cover ratio (i.e. exports divided by imports) adjusted for the overall cover ratio of manufacturing industry.

Source: Eurostat, DEBA GEIE

**Table 5C: Sectoral breakdown of Japanese exports and imports, 1994**

(%)	Share in total manufacturing exports (ratio)	Share in total manufacturing imports (ratio)	Export specialisation (1)	Adjusted cover (2)
Mineral oil refining	0.3	0.9	0.21	0.35
Preliminary processing of metals	5.0	9.2	0.86	0.55
Non-metallic mineral products	1.3	1.2	0.71	1.04
Chemicals and man-made fibres	8.1	11.3	0.63	0.71
Metal articles	1.5	1.7	0.47	0.89
Mechanical engineering	15.6	5.2	1.14	3.01
Office machinery and data processing machinery	7.8	5.2	1.69	1.49
Electrical engineering	25.6	14.0	1.72	1.84
Motor vehicles and parts	21.4	4.9	1.63	4.37
Other means of transport	5.1	3.0	0.99	1.69
Instrument engineering	5.2	3.3	1.78	1.55
Food, drink and tobacco	0.3	10.8	0.04	0.02
Textiles	1.6	6.2	0.46	0.26
Leather and leather goods	0.1	1.6	0.15	0.05
Footwear and clothing	0.2	7.5	0.09	0.03
Timber and wooden furniture	0.1	6.7	0.07	0.02
Paper, printing and publishing	0.7	2.4	0.20	0.30
Rubber and plastics	2.2	1.7	0.70	1.26
Other manufacturing industries	3.0	6.4	0.45	0.46
Total manufacturing	100.0	100.0	1.00	1.00

(1) Share of sector in total EU manufacturing exports divided by the same share calculated for the OECD.

(2) Sectoral cover ratio (i.e. exports divided by imports) adjusted for the overall cover ratio of manufacturing industry.

Source: Eurostat, DEBA GEIE



production and suppliers, less proportion in the motor vehicles sector is traded outside the EU, though while Europe's position in assembly of vehicles has improved, greater attention still needs to be given to component suppliers, whose cover ratio of exports to imports decreases over the period.

Services continue to grow rapidly with productivity increasing as the market deregulates, and profits being squeezed as competition increases. Telecommunication services represent a fast growing area and are important both for the direct impact on growth and as part of the information society infrastructure needed by business. Regulatory reform and competitive markets will help to boost growth and innovation in this area. Another sector that has expanded rapidly under liberalisation is air transport services. Meanwhile, the process of outsourcing non-core activities is fostering the creation of a wide range of specialised business and financial services and growth in this area has remained strong.

## TRADE PERFORMANCE BY SECTOR

In theory, a country/region should develop its exports in the sectors for which it enjoys a comparative advantage and therefore report a larger share of these sectors in its total exports than other OECD countries, along with a trade surplus. In practice, things are more complicated, especially in the case of the EU and the indicators show conflicting comparative advantages signals.

The export specialisation indicator, which is the share of the sector in total EU exports divided by the same share for the OECD as a whole, compares the structure of EU exports relative to the industrialised countries of the OECD. The cover ratio (i.e. exports divided by imports) is adjusted for the manufacturing surplus (i.e. divided by the cover ratio of the manufacturing sector as a whole). Tables 5A, 5B, 5C compare the sectoral trade specialisation of the Triad and Table 6 shows the sectors of export specialisation.

The export specialisation measures the advantage of the EU compared with the rest of the OECD, whereas the trade surplus measures the advantage relative to the world as a whole. Overall, the EU shows positive specialisation in mechanical engineering, non-metallic mineral products, and other manufacturing. Meanwhile, the EU shows negative specialisation in most electronic related sectors (electrical engineering, office and EDP machinery/computers, instrument engineering) and resource based sectors (wood, paper).

Sectors for which the EU shows indicators in opposing directions include: textiles, clothing and leather products which show a large export specialisation and a trade deficit. Here the EU holds a comparative advantage relative to the rest of the OECD, but the advantage is not sufficient to offset the large trade deficit of the OECD in the sector.

Meanwhile, the motor vehicles and parts sector shows an export specialisation lower than the OECD and a trade surplus, indicating that the EU is less efficient than the OECD in this sector but still has a share of the OECD's surplus with the rest of the world.

The USA shows positive specialisation in other means of transport (especially aerospace) and electrical engineering and shows negative specialisation in the more labour intensive sectors of textiles, clothing and leather goods, and the resource based sectors wood products, non-metallic minerals, mineral oil refining. The negative specialisation in motor vehicles shows the result of delocation of production, with trade figures based on country of production, rather than country of company ownership.

Sectors in which the US is less efficient than the OECD but in which the OECD has an overall surplus with the rest of the world include: chemicals, food, drink and tobacco, paper and printing, rubber and plastics.

The Japanese economy is more highly specialised than the EU or the USA, with high specialisation in office machinery/computers, electrical engineering, motor vehicles and parts, instrument engineering. Japan is also relatively strong in mechanical engineering and other means of transport. Japan shows significant negative specialisation in food, drink and tobacco, textile, clothing and leather sectors, wood and paper. Here the patterns are more pronounced and constant; there is less discrepancy between specialisation within the OECD as compared with the rest of the world.

Table 7 shows the geographic orientation of exports. As is expected, the destination regions that are geographically closer to the exporter are prominently reflected in the trade patterns. Intra-EU trade was 53.9% of total EU trade in 1994. Excluding this intra-EU trade to concentrate on the EU's trade competitiveness with other regions, North America is a significant export destination for European exporters, as well as Eastern Europe and the faster growing Asian countries of Hong Kong, Singapore, South Korea and Taiwan. With the enlargement of the EU to include Austria, Sweden and Finland, extra-EU trade statistics have altered significantly. This has the effect of enlarging the rest of the world category, which has greater significance for EU trade.

Tables 8A and 8B show indicators of EU cost competitiveness on the domestic and export markets by sector breakdown, with growth from 1987-1994, allowing for a focus on long-term trends. An indicator for each component of total production costs has been calculated to determine the effect of each on a sector's competitiveness. All the data presented in these tables comes from Eurostat's Competitiveness Database.

From the total cost competitiveness indicator, we see that most sectors have posted increases in competitiveness, especially preliminary processing of metals and chemicals, office machinery and EDP equipment, textiles and leather goods. Increases in relative labour productivity was particularly significant for these sectors, apart from office machinery and EDP equipment. Indeed, while most sectors showed an increase in relative labour productivity, the more technology orientated sectors such as office machinery and data processing equipment, slipped in relative labour productivity competitiveness and gained with improved relative wage rate competitiveness (i.e. lower relative wages).

In most sectors, increases in the competitiveness of unit intermediate costs was a significant factor in increasing productivity. Very few sectors (mainly oil refining) have suffered a loss in intermediate costs competitiveness, partly due to exchange rates patterns, although with an increasingly complex supply chain, it is difficult to make firm conclusions without further details. Indeed, EU firms still tend to lag the USA and Japanese firms in terms of rationalising supplier links in many manufacturing industries.

Overall, EU manufacturing has generally managed to improve its cost competitiveness over the period 1987-94, although in many sectors the gains remain marginal. The gains made have been due to slight improvements in both unit labour costs and intermediate costs.

Table 9 shows the indicators of trade performance. The indicator of export market share compares EU exports to average OECD exports. The domestic share indicator is calculated as the coverage of EU consumption by EU production (production minus exports divided by domestic sales) divided by a similar ratio calculated for the Triad. The trade balance indicator is simply defined as the trade balance as a share of production.

Sectors which have posted a strong deterioration in their export market share, i.e. for which EU exports have risen much slower than exports of the US and Japan in the same sector, include such important sectors as chemicals and electrical engineering, instrument engineering, rubber and plastic products and other



**Table 6: Sectors of export specialisation, EU, USA, Japan, 1994**

EU	USA	Japan
<b>Sectors with a strong specialisation (1)</b>		
Leather and leather goods	Office machinery and data processing machinery Other means of transport	Instrument engineering Electrical engineering Office machinery and data processing machinery Motor vehicles and parts
<b>Sectors with a moderate specialisation (2)</b>		
Footwear and clothing Mineral oil refining Mechanical engineering Other manufacturing industries	Electrical engineering	
<b>Sectors with a moderate negative specialisation (3)</b>		
Office machinery and data processing machinery Motor vehicles and parts Timber and wooden furniture Paper, printing and publishing	Mineral oil refining Preliminary processing of metals Non-metallic mineral products Metal articles Food drink and tobacco	Non-metallic mineral products Chemical and man made fibers Rubber and plastics
<b>Sectors with a strong negative specialisation (4)</b>		
	Textiles Leather and leather goods Footwear and clothing	Metal articles Mineral oil refining Food drink and tobacco Textiles Leather and leather goods Footwear and clothing Timber and wooden furniture Paper, printing and publishing Other manufacturing industries

(1) Export specialisation ratio higher than 1.5 (see column 3 table 5).

(2) Export specialisation ratio higher than 1.2 (see column 3 table 5).

(3) Export specialisation ratio lower than 0.8 (see column 3 table 5).

(4) Export specialisation ratio lower than 0.5 (see column 3 table 5).

Source: Eurostat, DEBA GEIE

**Table 7: Geographical breakdown of exports, EU, US and Japan, 1994 - to the specific regions**

(%)	EUR15 (5)	US	Japan
EUR15	-	21.0	15.5
North America	18.0	22.6 (6)	31.5
Japan	4.8	9.7	-
Australasia	2.2	2.3	2.6
NICs1 (1)	8.0	11.6	23.5
NICs2 (2)	2.6	3.2	8.4
Other Asia (3)	2.4	0.6	0.7
China	2.7	1.9	4.8
NICs3 (4)	4.3	13.4	2.0
Maghreb	2.6	0.3	0.1
Eastern Europe	9.0	0.4	0.2
CIS	4.1	0.6	0.3
Rest of the world	39.4	12.3	10.5
Total	100.0	100.0	100.0

(1) NICs1: Hong Kong, Singapore, South Korea and Taiwan

(2) NICs2: Malaysia, Thailand and the Philippines

(3) Other Asia: India, Pakistan and Indonesia

(4) NICs3: Argentina, Brazil, Chile and Mexico

(5) Breakdown of extra-EU trade

(6) US exports to Canada

Source: Eurostat, COMTRADE



**Table 8A: Indicators of EU cost competitiveness for the exports market (1)  
Growth over 1987-1994**

(%)	Share in total manufacturing production (1994)	Labour productivity	Wage costs per employee (2)	Unit labour costs (2)	Unit intermediate costs	Total unit costs (2)
Mineral oil refining	4.9	4.3	3.6	9.3	-15.1	2.5
Preliminary processing of metals	4.3	24.2	-1.5	19.7	9.9	12.5
Non-metallic mineral products	3.7	13.1	3.5	12.8	1.9	1.8
Chemicals	11.0	13.7	-1.1	11.0	11.8	9.9
Metal articles	6.4	5.5	2.6	6.6	8.3	5.4
Mechanical engineering	7.8	5.1	0.8	-0.1	4.6	1.3
Office machinery and data processing machinery	1.7	-11.9	20.6	-3.6	22.7	13.9
Electrical engineering	9.7	-2.4	8.9	7.5	-1.1	-2.6
Motor vehicles and parts	10.1	0.1	5.7	-7.8	-3.0	-4.9
Other means of transport	2.5	0.7	1.0	-7.6	0.7	-1.8
Instrument engineering	0.9	-5.1	9.0	0.2	5.0	-0.1
Food, drink and tobacco	17.2	12.4	-8.3	2.8	3.3	1.3
Textiles and household textiles	3.2	17.8	1.7	17.0	11.4	11.7
Leather and leather goods	0.4	13.9	6.9	12.4	27.6	22.8
Footwear and clothing	2.4	12.4	13.7	20.7	0.7	4.8
Paper, printing and publishing	5.9	9.2	-3.6	4.0	5.1	3.8
Rubber and plastics	4.1	9.0	4.4	8.7	9.1	5.3
Other manufacturing industries	0.8	20.1	0.3	10.0	11.4	9.3
Total manufacturing	100.0	5.2	4.2	5.5	6.5	4.2

(1) Each indicator measures the improvement/deterioration of the corresponding item in the EU relative to the US and Japan. Positive gains show signs of improving competitiveness

(2) Growth over 1987-1993.

Source: Eurostat, DEBA GEIE

**Table 8B: Indicators of EU cost competitiveness for the domestic market (1)  
Growth over 1987-1994**

(%)	Labour productivity	Wage costs per employee (2)	Unit labour costs (2)	Unit intermediate costs	Total unit costs (2)
Mineral oil refining	5.1	-1.1	5.0	-21.7	-0.8
Preliminary processing of metals	20.7	-6.1	7.5	1.7	5.1
Non-metallic mineral products	13.9	-2.6	6.6	-4.5	-3.2
Chemicals	14.6	-4.4	8.1	9.3	9.0
Metal articles	6.1	-3.3	1.6	3.8	1.4
Mechanical engineering	5.3	-3.4	-3.7	1.1	-1.5
Office machinery and data processing machinery	-15.7	18.8	-6.5	20.9	13.8
Electrical engineering	-1.8	6.7	5.8	-1.5	-3.1
Motor vehicles and parts	1.5	10.5	-3.6	0.1	-1.8
Other means of transport	10.4	-1.8	-2.0	4.6	-3.6
Instrument engineering	-5.8	6.1	-2.1	2.9	-1.8
Food, drink and tobacco	11.3	-12.5	-1.8	-1.2	-1.5
Textiles and household textiles	17.1	-0.6	14.0	9.0	9.7
Leather and leather goods	14.1	3.5	8.6	23.0	19.9
Footwear and clothing	11.9	11.0	17.9	-1.5	3.3
Paper, printing and publishing	12.5	-9.4	1.5	3.0	3.0
Rubber and plastics	9.8	-3.1	2.2	3.7	1.5
Other manufacturing industries	20.1	-0.3	9.6	10.9	8.8
Total manufacturing	5.5	0.5	2.5	3.9	2.3

(1) Each indicator measures the improvement/deterioration of the corresponding item in the EU relative to the US and Japan. Positive gains show signs of improving competitiveness

(2) Growth over 1987-1993.

Source: Eurostat, DEBA GEIE



**Table 9: Indicators of trade performance, EU  
Growth from 1987-1994**

(%)	Total cost indicator (1)	Trade balance (2)	Share of OECD exports	Domestic market share (3)
Mineral oil refining	2.5	6.2	0.6	3.7
Preliminary processing of metals	12.5	-6.5	-4.2	-7.2
Non-metallic mineral products	1.8	0.8	3.7	-1.7
Chemicals and man-made fibres	0.0	3.3	-4.2	-3.5
Metal articles	5.4	-0.4	0.9	-2.6
Mechanical engineering	1.3	7.5	-10.3	-4.9
Office machinery and data processing mach.	13.9	-15.0	-3.3	0.0
Electrical engineering	-2.6	-1.5	-11.5	-6.4
Motor vehicles and parts	-4.9	0.4	-4.3	-1.3
Other means of transport	-1.8	3.7	15.3	-18.9
Instrument engineering	-0.1	-4.5	-16.6	-13.2
Food, drink and tobacco	1.3	1.2	1.6	-0.1
Textiles	0.0	-1.8	-4.5	0.0
Leather and leather goods	22.8	1.5	20.3	-17.6
Footwear and clothing	4.8	-12.9	-6.7	-11.1
Timber and wooden furniture	0.0	-4.5	-15.4	-1.6
Paper, printing and publishing	3.8	-0.8	6.7	-0.5
Rubber and plastics	5.3	-0.6	-11.1	-3.0
Other manufacturing industries	9.3	22.2	-27.8	-137.8
Total manufacturing	4.2	0.5	-6.2	-3.9

(1) Growth from 1987-1993.

(2) Difference between 1987 and 1994 as a percentage of production in 1994.

(3) The domestic share indicator is calculated as the coverage of EU consumption by EU production (production minus exports divided by domestic sales) divided by a similar ratio calculated for the Triad.

Source: Eurostat, DEBA GEIE

manufacturing industries (which includes sports goods, toys and musical instruments, among others). In all these sectors, the EU producers have also lost domestic market share (again compared to the US and Japan), in the sense that the change in domestic producers' share of their own market has either increased more, or decreased less, in the US and Japan than has been the case in the EU. EU producers have thus clearly lost some competitiveness in these sectors. Meanwhile, the EU export performance has improved in comparative terms (when compared with the US and Japan) in the other means of transport sector (which covers aerospace, shipbuilding and railway rolling stock), in leather and leather products and in paper, printing and publishing: EU exports of these sectors' products have risen faster than the US or Japan's, however this does not denote an increase in competitiveness but increased outsourcing of parts of the production process, since the EU's domestic market share has also deteriorated over the period.

## OUTLOOK

The globalisation pattern, combined with different rates of growth of demand, supply and competitiveness factors at world level, leads to differential rates of growth of different types of activities across regions. In the long run, the EU industry and service sectors that will develop fastest will be those producing specialised, technologically intensive products and services strongly relying on the region's human capital asset, and all the supporting activities to these businesses that require proximity. Over time, the sectors which are less human-capital intensive, that rely less on specialised technologies or on continuous innovation such as apparel production, basic footwear, mass production of standard machinery and equipment, and most basic metals sectors as well as exportable services, will grow comparatively slower in the EU, as these activities will progressively move to non-EU (emerging) countries. In the short and medium run, fast growing sectors will be the investment goods producing sectors and, to a lesser extent, construction, as these sectors recover from the major downturn which they have experienced in the early 1990s, when the

slowdown in activity and faltering business confidence led to a downturn in investment. In comparison, the consumer goods producing sectors are expected to grow more slowly, due to slow growing personal incomes in an economy still characterised by high unemployment and tight budget policies.

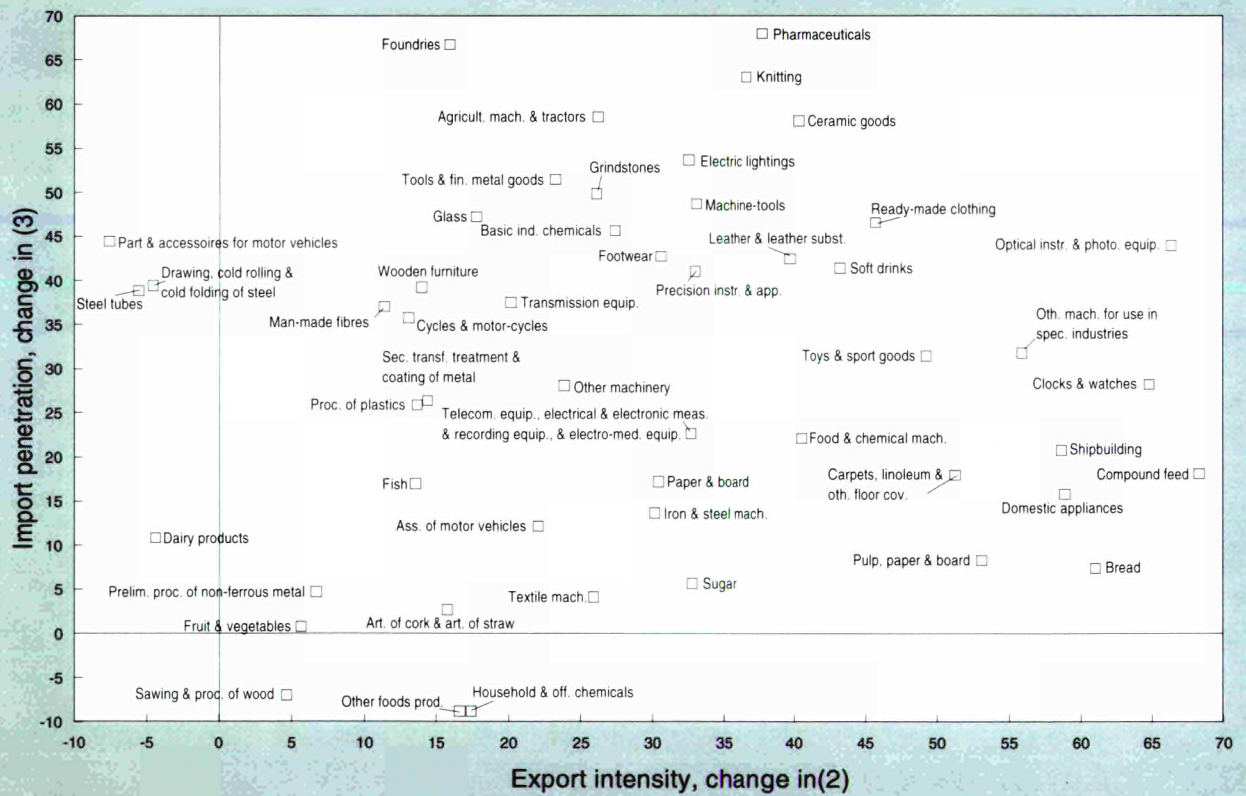
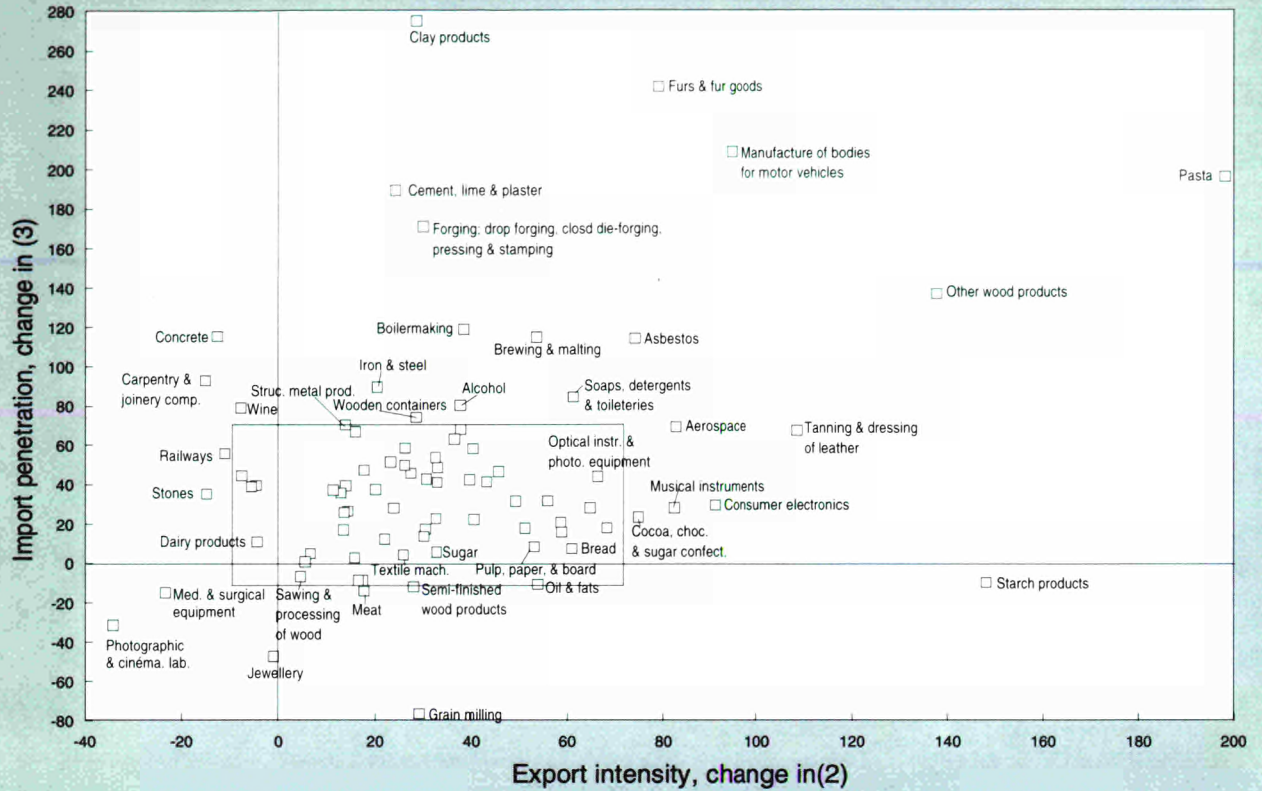
To improve productivity, job creation and growth, Europe's enterprises need to continue to improve their competitiveness, by achieving greater efficiency in the production system and by developing an increased capacity for innovation to develop new products and processes. This performance will be influenced by their market focus and ability to spot market trends, by the efficiency of their internal organisation and increasingly by their links and communication with other organisations and by the framework conditions set and economic infrastructure developed by policy makers at the national, European and international level.

The broad determinants of competitiveness are discussed in the chapters that follow. But to better grasp the dynamics in detailed sub-sectors of the European economy, the Panorama presents the driving factors and supply strategies for each sector, giving the background to EU legislation affecting the performance of the sub-sector and benchmarking European performance with that of the USA and Japan. In providing a wealth of comparable and clear industry information, private sector and public sector readers can compare different sectors to gain a better understanding of both the vertical and horizontal links between industries, and of the challenges facing European industry and services. In that sense, the Panorama represents a way to improve the links and communication between different enterprises and sectors of the Community.

Written by: DRI Europe

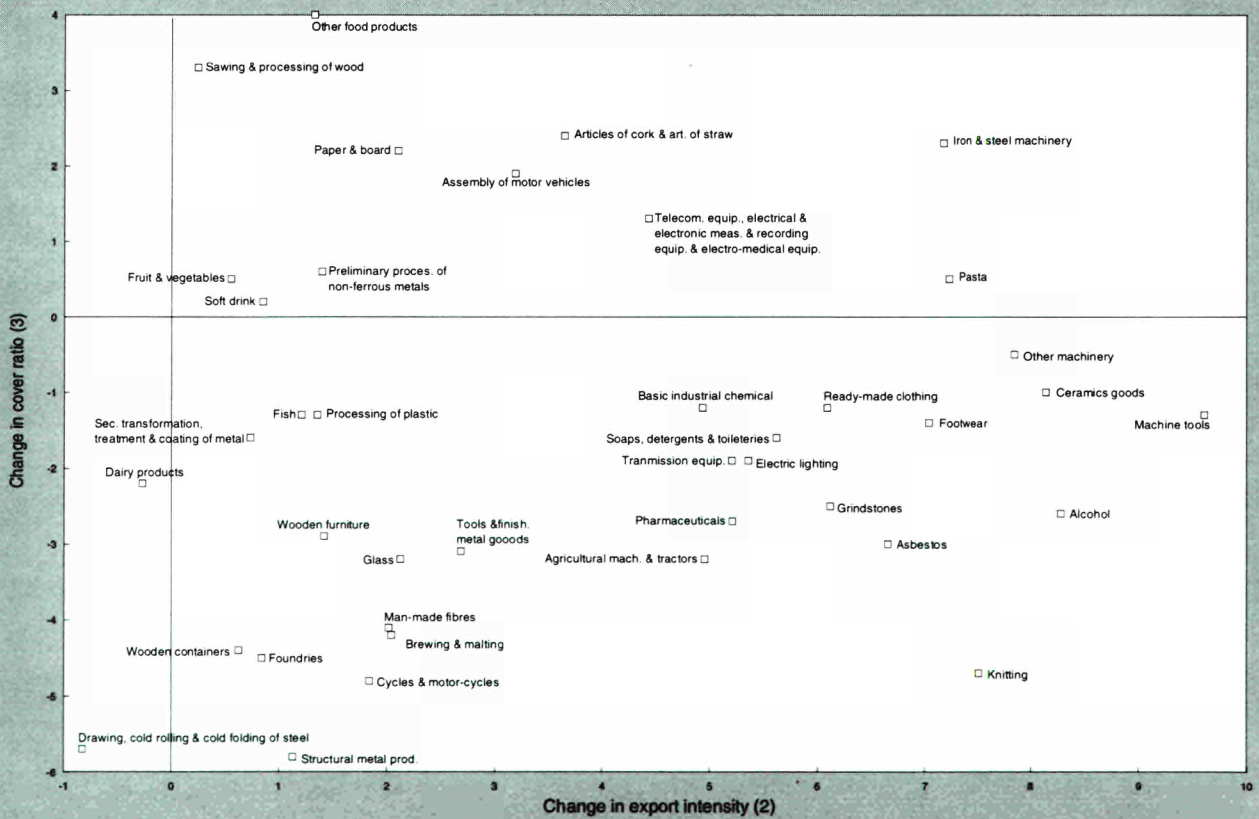
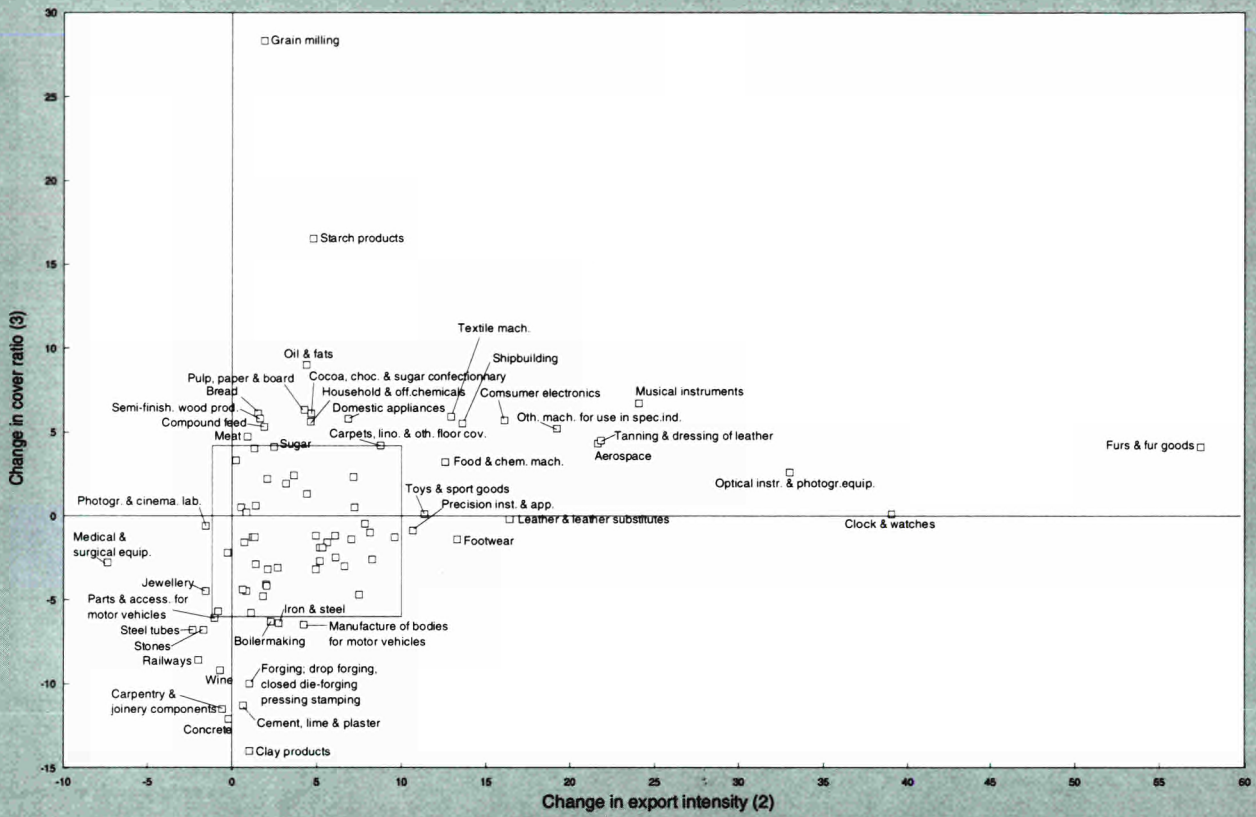


**Figure 8: Change in export intensity / import penetration by sector 1988-95 (1)**



(1) Estimated.  
 (2) Calculated as extra-EU exports / production.  
 (3) Calculated as extra-EU imports / apparent consumption.  
 Source: DEBA GEIE

Figure 9: Performance of EU Industry in terms of exports, 1988-95 (1)

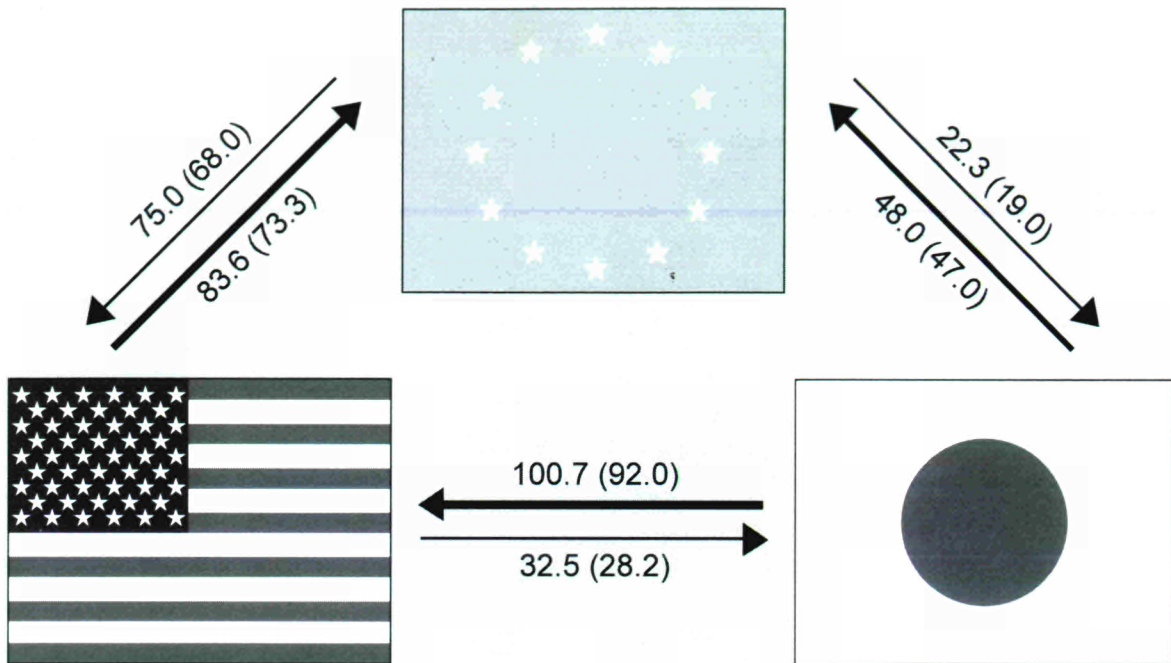


(1) Estimated.  
 (2) Calculated as extra-EU exports / production.  
 (3) Calculated as extra-EU imports / apparent consumption.  
 Source: DEBA GEIE



Figure 10A: Exports between the EU, USA and Japan, 1994 (1)

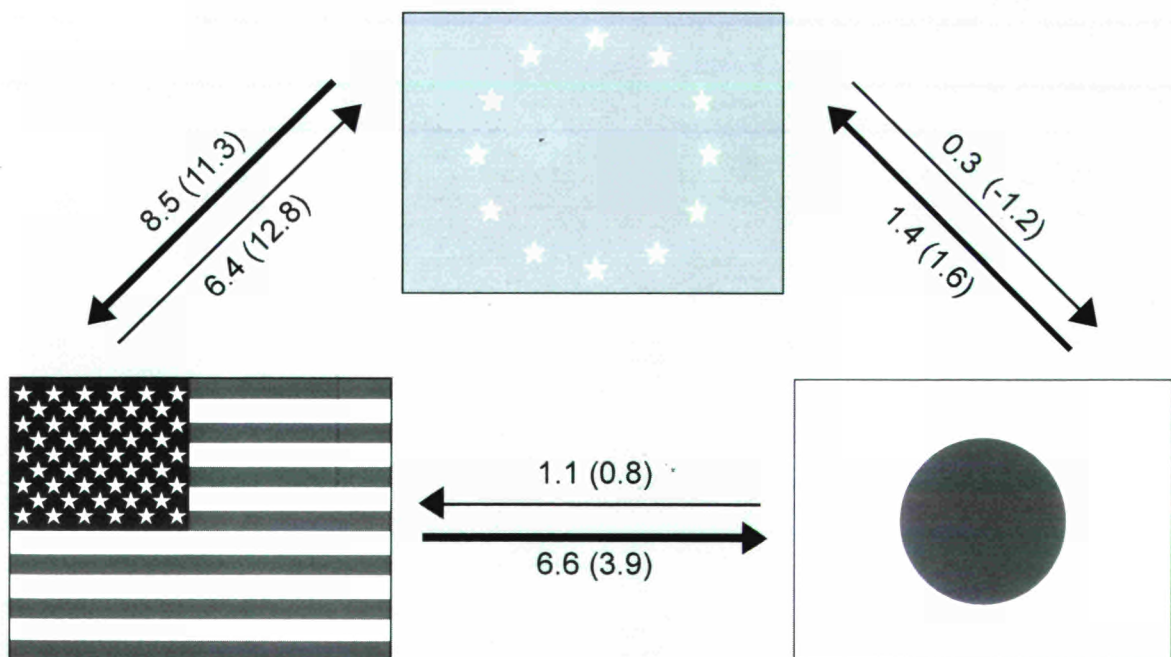
(billion ECU)



(1) Manufactured goods, corresponding to SITC 5+6+7+8  
The figures in brackets are for 1993  
Source: Eurostat, UN COMTRADE

Figure 10B: Foreign direct investment between the EU, USA and Japan, 1994 (1)

(billion ECU)



(1) Excluding reinvestment profits  
The figures in brackets are for 1993  
Source: Eurostat, Survey of Current Business







