

Karl Aiginger

# De-Industrialisation and the Lisbon Agenda

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Prepared for Romano Prodi, President of the European Commission

Austrian Institute of Economic Research

University of Linz

European Forum Stanford

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- (1) The decline of manufacturing in GDP is known to happen since decades (see Clark, 1957, Fourastier, 1954). A high share of manufacturing is usually a characteristic of a stage two economy (industrialised countries not among the top 10). The share of manufacturing or of the secondary sector is declining in value added and employment for all countries if income per head increases. The basic forces behind this is that services are more income elastic and that technical progress is faster in manufacturing than in services (leading to lower price increases for industrial products).
- (2) Looking at the speed of de-industrialisation in the European Union, we find that the share of manufacturing decreased from 26.3 % in 1980 to 20.8 % in 1993, and then further to 19.3 % in 2001. There is no sign of an acceleration of the trend in the past ten years. The strongest decline had happened between 1986 and 1993 (the last year being a recession year). Taking the decades as rather artificial boundary we would find a decline in percentage points as of 2.9 between 1980 and 1990 and of 3.8 points between 1990 and 2000 (see Figure 1).
- (3) There are two countries with a higher share, than "predicted" for their income level, Germany and Japan, this has been analyzed as structural weakness ("underdeveloped service orientation", "preoccupation in manufacturing mass production skills", "insufficient degree of product differentiation"). The German share declined from 29.4 % to 22.2 %, giving a lead of about 3 points versus the European average in 1980 as well as in 2001. The strongest decline occurred between 1990 and 1993; this development is influenced by de-industrialisation of the Eastern Länder. Since that the share is relatively stable and the difference to Europe seems to widen slightly. Japan had a 2½ points higher share than Europe at the start of the decade, the relative size of manufacturing is now about the same as in Europe. The US has traditionally a very small and very efficient manufacturing sector and a rather strong service sector. The high deficit in merchandise trade and a surplus in services and intangibles is a late consequence of these trends. Europe has a high surplus in merchandise trade. The share of manufacturing in US GDP fell from 21.0 % in 1980 to 14.1 % in 2001, exhibiting a decline

of about the same absolute percentage points as in Europe; relatively to the yet smaller share of manufacturing the decline is more accentuated. It did not hamper economic growth as to be seen by the high growth in GDP as well as GDP per worker in the US in the nineties. Among the European countries the share of manufacturing is rather high in Finland, Germany and Austria, rather low in United Kingdom, the Netherlands and Denmark (see Figure 2).

- (4) The divide between manufacturing and services is not that tight as the statistics and the policy discussion indicates. Modern manufacturing needs high value added and producer driven services, some of which are provided within the industrial sector, some are outsourced into separate firms - statistically belonging to the service sector. Specifically ICT production and ICT services are heavily interlinked. Part of the lower US sector shares in manufacturing may be the consequence of a more formal vertical separation of production and services.
- (5) In the very last decade employment in the manufacturing sector is rather stable in the US, while in Europe it is further decreasing. The number of people working in manufacturing decreased only from 20.4 mill. persons 1980 to 19.2 mill. persons (1990) and to 18.6 mill. persons in 2000 in the US. It decreased from 33.3 mill. persons to 31.6 mill. persons 1990 and then to 27.9 mill. persons in 2000. The decline for the last decade amounts to 11.7 % (see Figure 3).
- (6) Comparing industry shares in Europe and the US shows that Europe has still a high share in traditional industries and a low share in technology driven industries. Labour intensive industries is 5.6 percentage points higher in Europe than in the US, capital intensive industries 0.8 points, mainstream industries which include some of the industries in which Germany is specifically strong amounts to 24.3 % of value added in Europe and 21.3 % in the US. Growth of value added is highest in technology driven industries.
- (7) There are large differences across member countries in the share of industry sectors. The share of labour intensive industries varies between 28 % in Portugal and 5 % in Ireland. The share of technology driven industries varies between 34 % in Ireland and 8 % in Greece. Countries with high share of technology-driven industries are growing faster (without suggesting that there is a one way causality between this and the high growth rate).

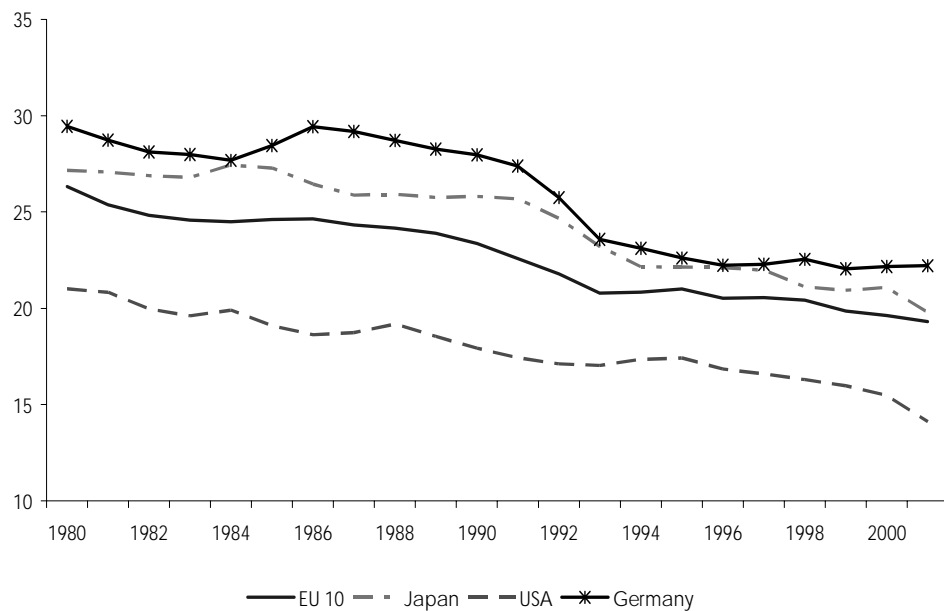
- (8) The higher share of technology driven industries and the higher share of ICT related services in the US is probably one of the reasons for higher growth in the US. Many studies estimate a contribution of ICT to growth of 1 % in the US and ½ % in Europe, yielding a growth penalty of half a percentage point for the insufficient use of ICT (Aiginger, 2001, Aiginger, Landesmann, 2002). The US is additionally investing more in R&D, education and ICT, these three categories amount to 16.4 % of GDP in the US and 13.3 % in Europe (see Figure 7). Out of a set of 16 indicators on research input and output, education expenditures and educational attainment of the workforce, ICT expenditure and use, the US is leading in 14 (see Figure 8). A European strategy can be only to increase investments into the future quantitatively and to improve these investments qualitatively. This fact is underlined specifically since the fastest growing European countries are leading in investment into future growth. The three Nordic countries (Denmark, Finland, Sweden), which enjoy a growth rate of 3 % over the past years, have invested 17.4 % into future growth and are leading the three big continental economies (Germany, France, Italy) in 14 out of the 16 growth drivers.
- (9) As to the specific policy to prevent deindustrialisation, the only policy is to promote the fast growing industries with high technology input and to induce mainstream or mid-tech industries to upgrade technological efforts. This helps to reduce the productivity difference towards the US and to boost European growth. These measures are well in line with the Lisbon Agenda. Europe can specialize to some extent on incremental innovation rather than on radical innovation, but any such smart follower strategy is rather risky in the long run. It needs high research outlays, an excellent education and rapid diffusion of technologies to be successful as a follower, too.
- (10) An active industrial policy should promote research, diffusion, education and mobility, but not singling out specific sectors. A fortiori industrial policy should not be biased in favour of industries which had been out of historic reasons been large in specific countries. Innovation incentives and regulatory conditions should be forward looking and growth promoting, not dampening structural change. As far as **ecological goals** are concerned the Porter hypothesis tells that a demanding customer as well as a regulatory environment stressing the precautionary motive and future concerns will encourage new technologies in the short run and establish a dynamic competitive advantage. **State aid** should really be excluded from the policy tool with the exemption of R&D and education (and other activities with well defined external benefits). A

comprehensive system of health and risk insurance (including unemployment benefits) are part of the European Social model (Aiginger, 2003). Incentives should be set and perhaps redrafted so that working is always more profitable than receiving benefits, that education pays, that own contributions to promote and regain health pays and so on. The most successful European Economies in the nineties are Welfare States, which tried to streamline the welfare system while keeping intact its basis. They are successful in growth and competitiveness since they realize that a comprehensive welfare state needs high and rising productivity. In an enlarging Europe any strategy to dampen structural change in the richer member countries, does not work in the long run and aggravates problems in the new member states in the short run.

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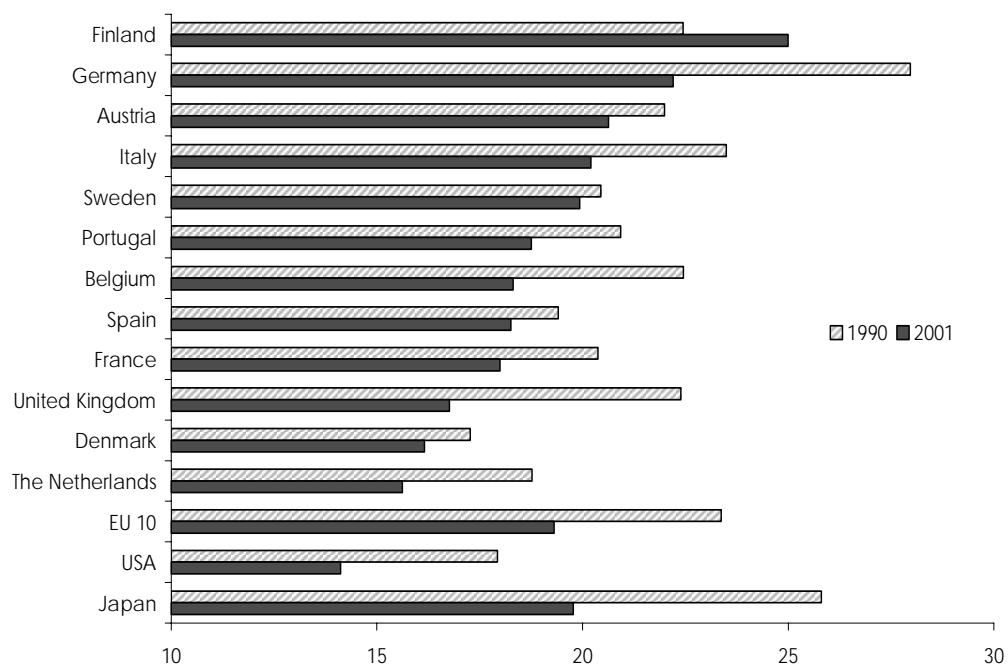
Figure 1: Share of manufacturing in total economy



EU10 = Belgium, Austria, Germany, Denmark, Finland, France, Italy, Netherlands, Sweden, United Kingdom.

Source: OECD, STAN Database.

Figure2: Share of manufacturing in total economy 1990 and 2001  
(European countries ranked according to the share in 2001)



EU10 = Belgium, Austria, Germany, Denmark, Finland, France, Italy, Netherlands, Sweden, United Kingdom; Spain and Portugal 1999.

Source: OECD, STAN Database.



Figure 3a: Growth of manufacturing and of real GDP; USA; 1990=100

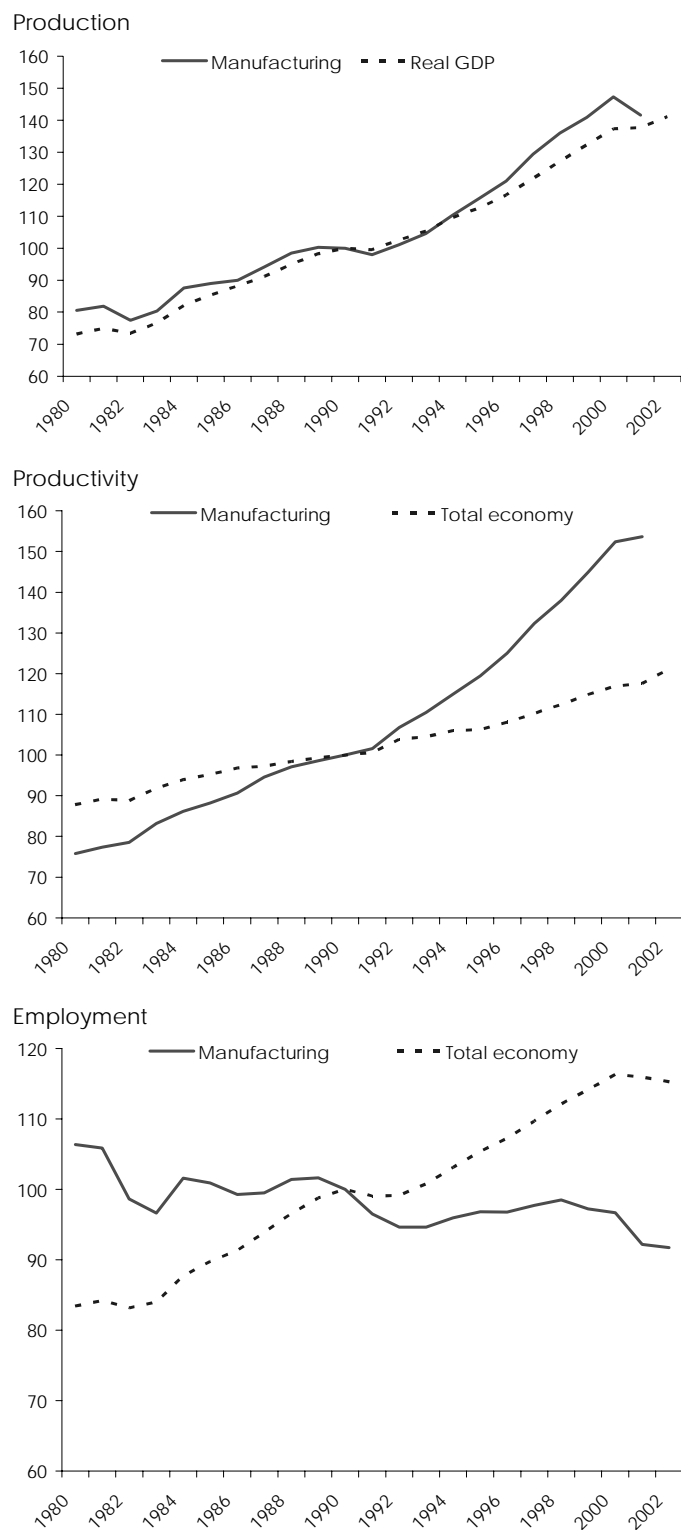


Figure 3b: Growth of manufacturing and of real GDP; EU; 1990=100

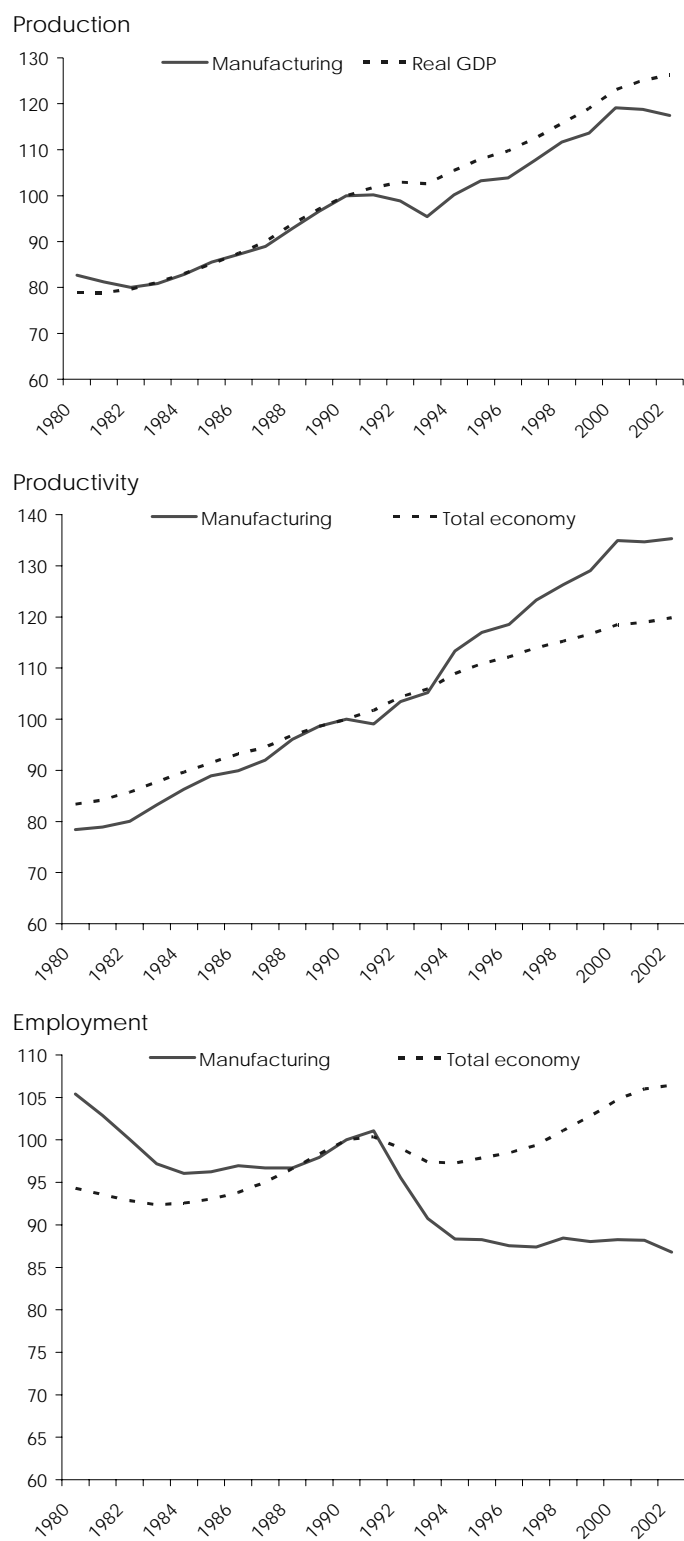


Figure 3c: Growth of manufacturing and of real GDP; Germany; 1990=100

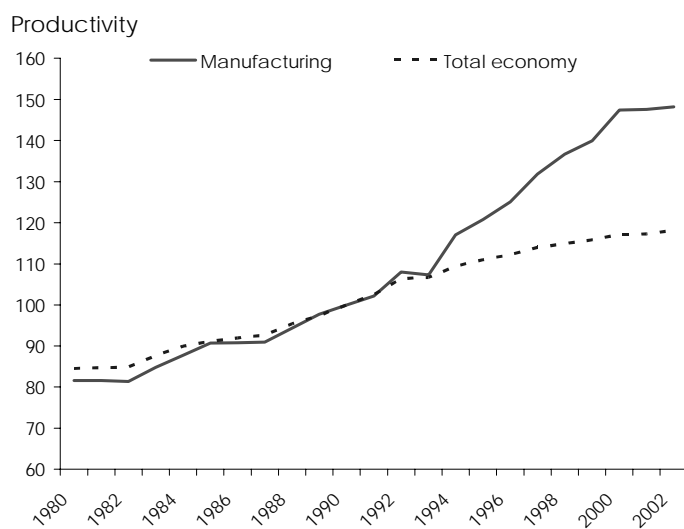
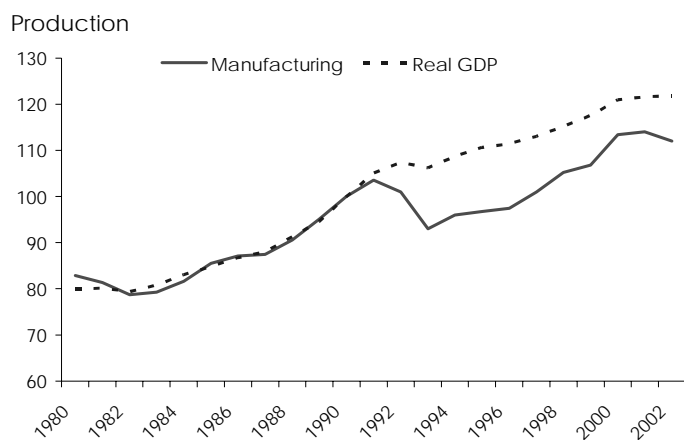
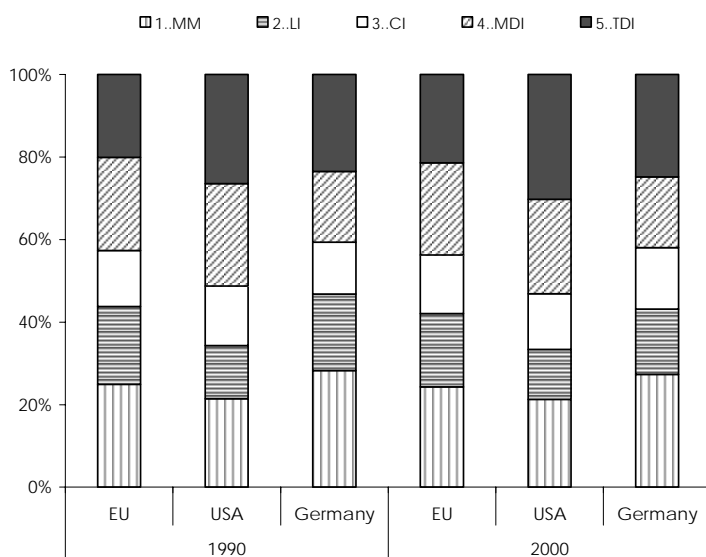


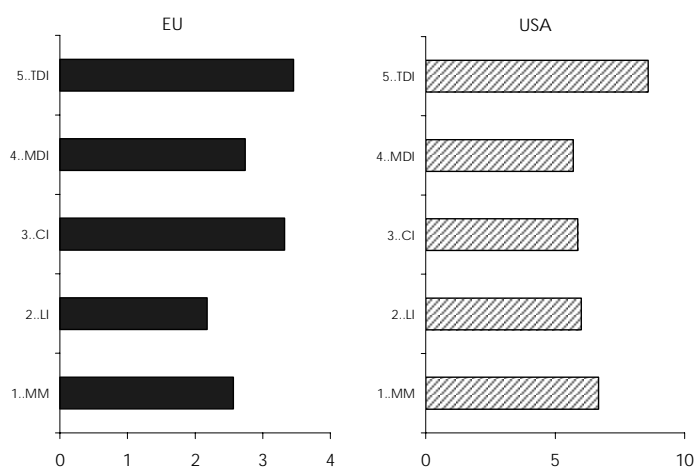
Figure 4: Share of sectors in value added



1..MM Mainstream industries; 2..LI Labour intensive industries; 3..CI Capital intensive industries  
4..MDI Marketing driven industries; 5..TDI Technology driven industries

Source: EUROSTAT; New Cronos; for definition see Peneder (2001).

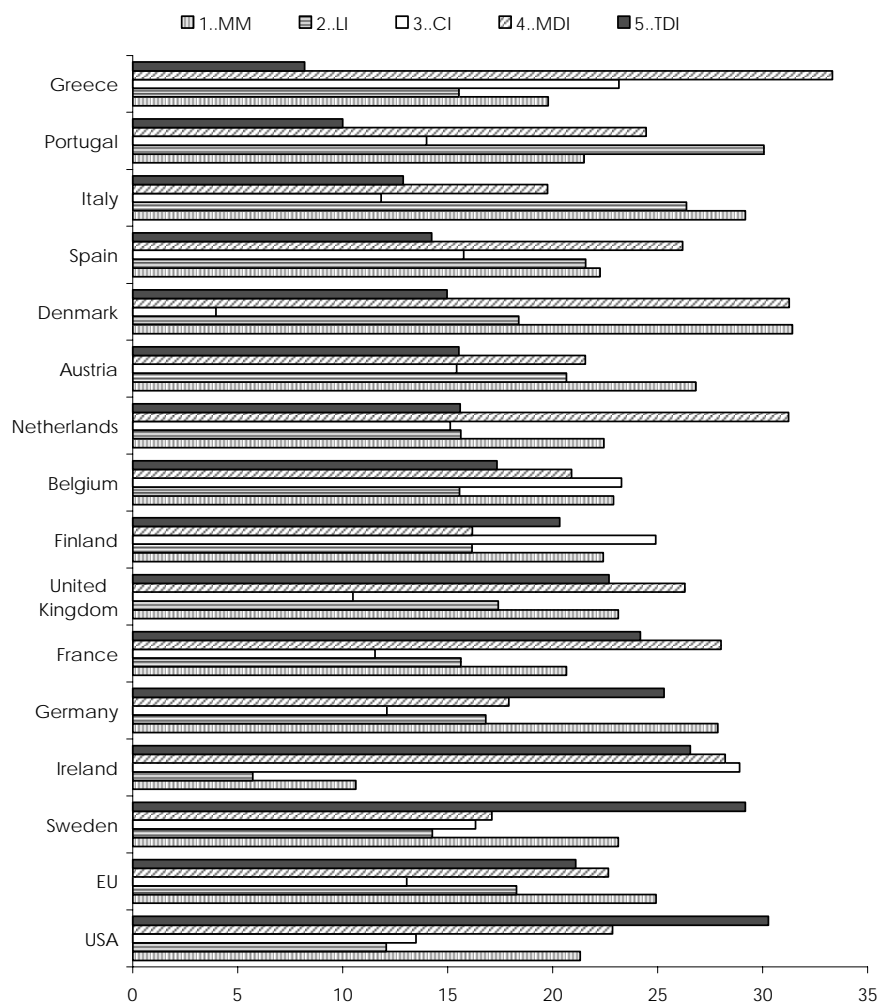
Figure 5: Growth of value added according to sector type 2000/1990



1..MM Mainstream industries; 2..LI Labour intensive industries; 3..CI Capital intensive industries  
4..MDI Marketing driven industries; 5..TDI Technology driven industries

Source: EUROSTAT; New Cronos; for definition see Peneder (2001).

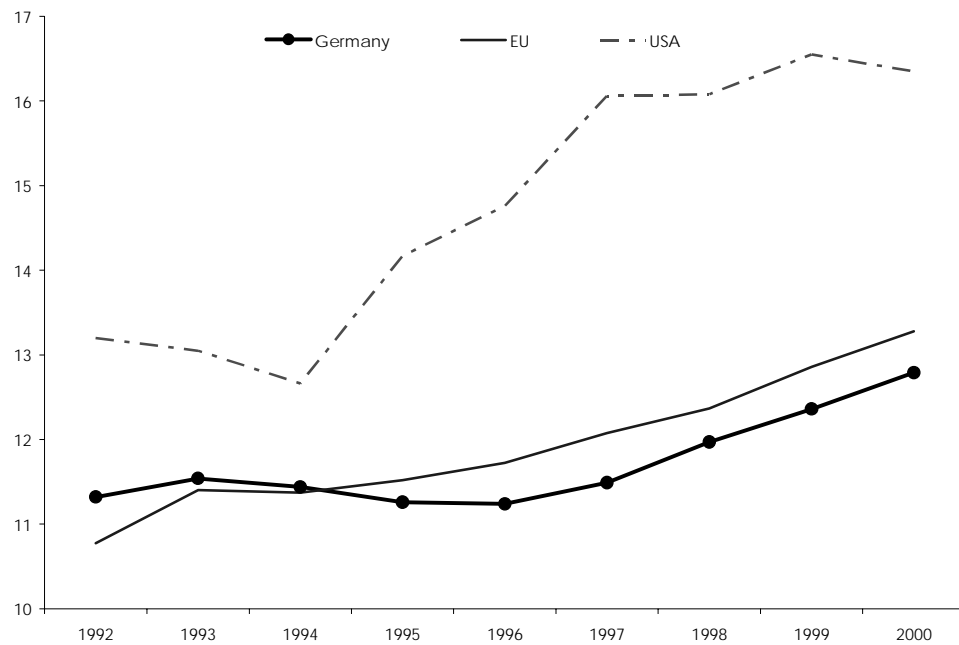
Figure 6: Share of sectors in value added 1998  
(ranked according to size of technology driven industries)



1..MM Mainstream industries; 2..LI Labour intensive industries; 3..CI Capital intensive industries  
4..MDI Marketing driven industries; 5..TDI Technology driven industries

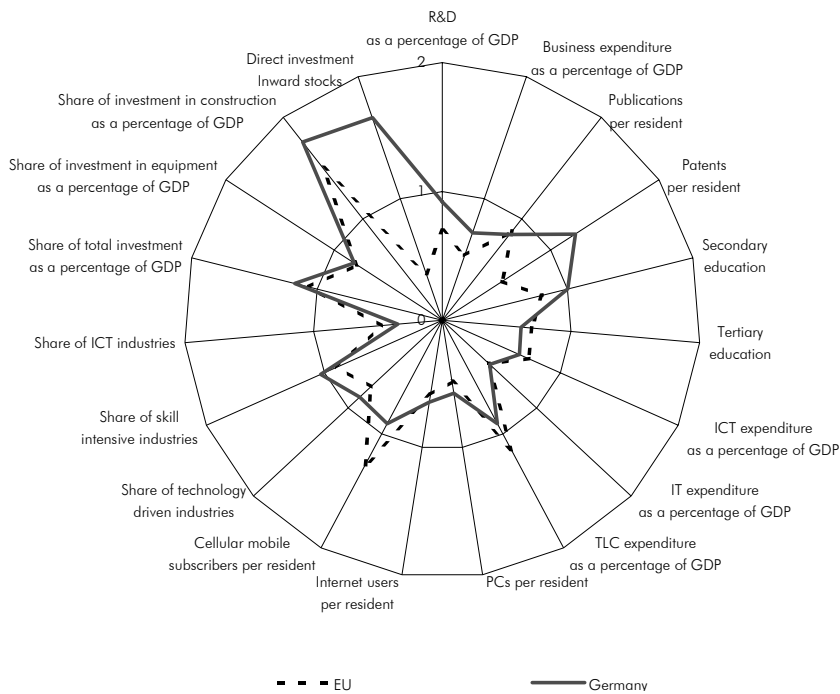
Source: EUROSTAT; New Cronos; for definition see Peneder (2001).

Figure 7: Share of future investment (R&D + education + ICT)



Source: WIFO calculations (note that some expenditures may overlap between the 3 categories).

Figure 8: Growth drivers EU and Germany vs. USA



Remark: Each indicator outside the unit circle shows a superior performance of EU or Germany vs. the USA.