Focus

II. The growing importance of services in the euro-area economy

Over the last three decades, the euro area, like other developed economies, has undergone a progressive shift of its production structure from goods to services which now account for about 70% of employment and GDP. The objective of this focus is to review the specificities of services compared with manufacturing and discuss the impact of the shift on the euro-area economy.

Services tend to be relatively sheltered from external trade or cyclical fluctuations. The services sector is prone to higher and more persistent inflation than industry. Finally, it is also the mainstay of employment creation but, unlike in the USA, suffers from low and decelerating productivity gains. The shift to services therefore has potentially important implications for the performance of the euro-area economy in terms of productivity, inflation and business cycle fluctuations.

Nevertheless, the analysis presented in this focus shows that these enduring features of services should be refined in two ways. First, the services sector is characterised by a high degree of heterogeneity. Some sub-sectors, particularly in the market services sector, are relatively exposed to international trade and can be subject to strong cyclical swings either directly or because of strong input-output linkages with industry. Second, low productivity and high and persistent inflation are partly a symptom of a lack of competition and therefore not an inevitable structural feature of the sector. The US experience shows that the shift to services does not necessarily entail a deceleration of productivity. There is room for dynamic services markets that contribute both to employment and to strong productivity growth provided that an adequate framework is set in place that fosters competition and allows service providers to innovate, restructure and make full use of the possibilities offered by ICT.

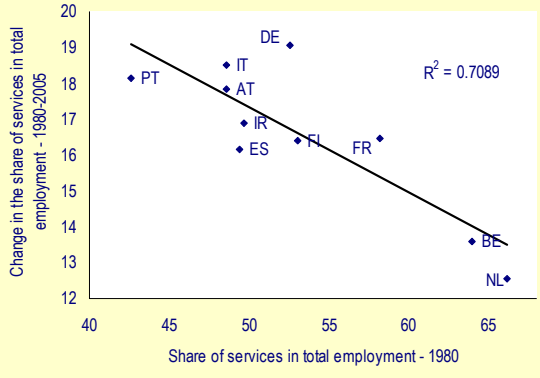
The objective of this focus section is to review the contribution of the services sector to the euro-area economy and to highlight the specificity of service sectors relative to industry. After assessing the rising weight of services in the economy (Section 1), the note examines the contribution of services to productivity and inflation (Sections 2 and 3). It then gauges the strength of the sector's linkages with the international economy (Section 4) and domestic industry (Section 5). A final section discusses briefly the exposure of services to business cycle fluctuations (Section 6).

1. The growing importance of services in the euro-area economy

Services account for about 70% of total value added and total employment in the euro area. The last three decades have witnessed a steady rise in their importance in the euro-area economy. The share of services in the economy's total value added increased by more than 13 percentage points between 1980 and 2003. (Table 4) The gain was even more impressive when measured in terms of employment (17 pp).

The structural shift towards services has been widespread among developed economies. Within the euro area, the shift has been associated with a marked convergence process. As shown in Graph 21, countries where services were less developed in the mid-1980s have experienced larger increases in the share of services over the last two decades. There has also been a steady convergence of the euro-area share of services towards the higher US level.

Graph 21: **Convergence in the share of services in total employment, euro-area Member States** (In %)



Source: OECD STAN database, Commission services.

Looking at the composition of services, much of the increase stems from the expansion of the subcomponent 'finance, real estate and business services', which accounts for about 28% of the

Table 4: **Trends in the share of services in total employment and value added, euro area**

(Share of total in % – 1980-2003)

	Value added			Employment (2)		
	1980	1990	2003	1980	1990	2003
Total services	58.5	63.9	71.0	51.8	59.9	68.0
Market services	37.0	41.9	47.1	30.6	34.7	39.9
of which:						
Trade and tourism	12.0	12.4	12.5	16.9	18.3	19.3
Transport and communication	7.1	6.7	6.8	6.3	6.2	6.0
Financial and business services	17.3	22.8	27.8	7.4	10.3	14.7
Non-market services	21.6	22.0	23.9	21.2	25.2	28.1
Manufacturing	26.6	23.4	18.4	26.5	23.2	18.5
Other good sectors (1)	14.9	12.7	10.6	21.8	16.9	13.5
All sectors	100	100	100	100	100	100

(1) Agriculture, mining, construction and supply of electricity gas and water.
(2) In man-hours.
Source: Commission services and Groningen Growth and Development Centre.

value added in services in the euro area (but only 15% of employment). Limited data is available on the composition of this sector but available evidence in some Member States suggests that growth in activity and employment may be mainly ascribed to real estate activities, computer services and other business activities. By contrast, financial services seem to have played only a negligible role in the relative expansion of services in the euro area. Finally, reflecting weak gains in productivity or problems related to the measurement of prices, some sectors – such as community and personal services – have made significant contributions to employment growth but more modest contributions to growth in value added.

Several factors are likely to have contributed to the structural shift towards services.

First, households tend to spend more on some categories of services as their income grows. The fact that the weight of services in the economy tends to be higher in countries with higher GDP per capita lends support to this explanation.

Second, demand for services is being driven up by a number of technological, regulatory and socioeconomic factors. In sectors such as transport and high-tech services (telecom and computer services) it is rapid technical developments, sometimes combined with deregulation, that are fuelling demand. In the corporate sector, the tendency to outsource non-core activities means that some service activities previously performed internally by manufacturing companies are now performed by service companies and recorded as services in national accounts (e.g. cleaning services, computer services). Rising female employment may also result in the transfer to the market of activities previously carried out by households on their own account (e.g. child care). Population ageing is also fuelling demand for care and health services.

2. A prominent role in employment and productivity developments

The contribution of services to employment

The services sector has long been the mainstay of employment creation in the euro area. In the eighties, job creation in services more than offset job losses in manufacturing and the acceleration of employment growth since the mid-1990s owes much to the dynamic development of market services (Table 5).[11] The contribution of non-market services, while still substantial, has not played a major role in the recent improvement of employment figures.

[11] In this focus section, services are broken down into market and non-market services. ***'Market services'*** include wholesale and retail trade; repair of motor vehicles, motorcycles, and other household goods; hotels and restaurants; transport, storage and communication; financial intermediation; and real estate, renting and business activities. ***'Non-market services'*** include public administration and defence, compulsory social security; education; health and social work; other community, social and personal service activities; and employment in private households. It should be stressed that the distinction between market and non-market services is a somewhat arbitrary simplification as some services included in the 'market services' sector also partly belong to the public sphere (e.g. research and development activities) and vice versa.

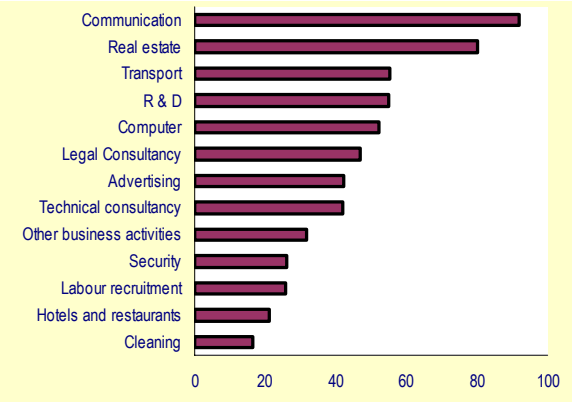
Table 5: **Employment growth, euro area** (1)

	Contribution to average annual growth (In %)		
	1980-90	1990-97	1997-03
Total economy	0.7	0.1	1.3
Of which:			
Manufacturing	-0.2	-0.5	0.0
Market services	0.6	0.4	0.9
Non-market serv.	0.5	0.4	0.5

(1) Based on number of jobs.
Source: Commission services and Groningen Growth and Development Centre.

Within market services, business services are especially dynamic as they account for half of the sector's contribution to total employment growth in the 1997-2002 period. Their rapid expansion reflects not only buoyant demand but also, as already mentioned, increasing outsourcing in the manufacturing sector. In the latter case, employment growth in services finds its statistical counterpart in job losses in manufacturing.

Graph 22: **Value added per employee in business service sectors, euro area** (1) (1000 euro, 2003)



(1) Excluding FI and NL
Source: Commission services.

However, business services are by no means a homogenous entity. Within the sector, two sub-groups can be identified. The first – comprising the cleaning, security and temporary-work sectors – is characterised by low value-added per employee (Graph 22), a weak investment rate and high numbers of personnel per company. It accounted for 36% of employment and 19% of value added in business services in 2003. The other, made up of computer services, consultancy work and advertising, constitutes 52% of employment and 69% of value-added. Both sub-groups have witnessed a rapid rise in employment (respectively + 30% and + 35% from 1998 to 2003).

Productivity gains tend to be slow in services and have stalled in recent years…

Labour productivity tends to be lower in services than in manufacturing due to factors related to the sector's production process, including the need for face-to-face relations between providers and consumers of most services, and less scope for technological change. In addition, some services cannot be stockpiled; they have to be produced and delivered at the same time. Finally, service companies tend to be smaller than manufacturing companies. This reduces the scope for mass production, scale economies and exploitation of international comparative advantage.

Lack of competition is another explanation for weak productivity gains in services. Services are much less exposed to international trade and foreign competition than goods and many sub-sectors are still subject to a constraining regulatory environment. Restrictions on competition tend to ease the pressures to innovate and make it harder to put in place more effective production processes.

A recent empirical study by the ECB confirms this relation by providing evidence of a negative link between restrictions on competition and productivity.[12] The study provides econometric estimates of the impact of regulations (using various measures thereof) on labour productivity in services. The estimations are based on a panel of euro-area Member States' data and carried out for the aggregate services sector as well as several individual sub-sectors. The results show that, once key macroeconomic determinants are taken into account (e.g. R&D spending, GDP per capita), a higher level of sectoral regulation has a negative impact on growth in labour productivity in the aggregate services sector. The study also reports that employment protection legislation has a negative effect on productivity. Nevertheless, reflecting the heterogeneity of

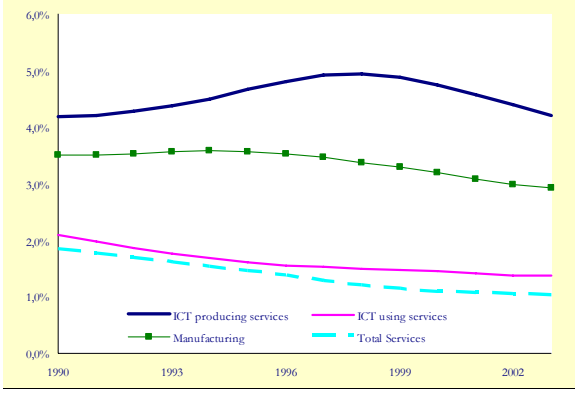
[12] ECB (2006), Competition, productivity and prices in the euro area service sector', ECB Occasional Paper, No. 44, April.

services and possible measurement problems in some sub-sectors, regression results vary significantly depending on the services sub-sectors considered. In particular, for 'hotels and restaurants' and 'real estate, renting and business services', measures of regulations either do not seem to have a meaningful effect or come with the wrong sign.

Productivity growth in services has decelerated significantly in the euro area since the 1990s. This deceleration seems to be of a structural rather than a cyclical nature, although not all service sectors have been equally hit (Graph 23). A possible explanation – which holds for both services and industry – is that wage moderation and the labour market reforms undertaken in the euro area since the 1980s have contributed to a reduction in capital-labour substitution. In addition, the re-integration of lower-productivity workers into the workforce may have exerted downward pressure on productivity by weighing on total factor productivity. According to this explanation, much of the deceleration of productivity should prove to be temporary. Nevertheless, empirical work carried out for the whole economy suggests that labour market reforms and wage moderation can only account for part of the trend deceleration in productivity growth in the euro area.[13]

Other possible explanations for the slowdown in productivity include the outsourcing trend from manufacturing to services and low competition in the service sector. However, neither explanation stands up to closer scrutiny. It is true that an acceleration of the scope of outsourcing of lower-productivity activities from manufacturing to the service sector could potentially have a negative impact on labour productivity in services, but if this were the explanation we should find its counterpart in an acceleration of manufacturing productivity, and we do not. As to competition, whereas the persistently low level of growth in productivity in the services sectors can partly be ascribed to a low level of competition, its deceleration since the mid-1990s is difficult to relate to competition which, if anything, has increased slightly in services in recent years. Overall, therefore, the trend decline in productivity remains partly unexplained.

Graph 23: **Trend hourly labour productivity, euro area**
(Average annual growth in % – 1990-2003) (1)



Sources: Commission services and Groningen Growth and Development Centre.

…while the gap with the USA has widened

These lacklustre developments stand in sharp contrast with the acceleration of US productivity in services from the mid-nineties on. There is evidence linking this acceleration to the impact of information and communication technologies (ICT), whether directly through productivity gains associated with the production of ICT services, or indirectly through additional productivity gains as a result of their diffusion. This productivity surge has widened the gap with the euro area. As shown in Table 6, even if the euro area is keeping pace with the USA in ICT-producing sectors, strong productivity gains in US ICT-using sectors are not matched by similar gains in Europe.

Nevertheless, productivity comparisons between the euro area and the USA should be considered with prudence. Much of the divergence stems from a few ICT-using services such as trade and financial services (Graph 24) and further disaggregated analysis of the gap with the USA is needed for two main reasons. First, it cannot be excluded that factors other than ICT explain the widening gap with the euro area. For instance, productivity acceleration in the US wholesale and retail sectors has been associated with the emergence of the 'big box' business model. Such an evolution might be more difficult to achieve

[13] See European Economy 2004 Review, Chapter 3. According to estimates provided in this study, labour market reforms account for 10% to 35% of the deceleration in the growth of total factor productivity for the euro-area economy as a whole.

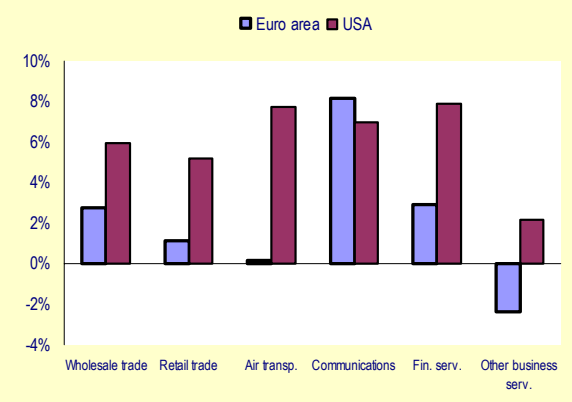
in the euro area due to stricter zoning restrictions, shop-opening regulations and competition barriers. The fact that the US economy has also experienced a pick-up in productivity growth in the service sectors which do not make an intensive use of ICT (Table 6) lends some support to the idea that factors other than ICT have also contributed to the gap between the euro area and the USA. Second, productivity is notoriously difficult to measure in these sectors and the gap might partly be a statistical artefact.[14]

Table 6: **Hourly labour productivity, euro area and USA** (Average annual growth in %)

	Euro area		USA	
	1989-1996	1997-2003	1989-1996	1997-2003
Total	2.1	1.5	1.2	2.4
Manufacturing	3.4	3.1	3.7	5.5
Services	1.6	1.0	1.4	3.1
of which:				
ICT producing services	3.8	5.4	3.3	5.2
ICT using services	1.5	1.5	2.0	4.9
Other services	1.5	0.1	0.5	1.1

Sources: Commission services and Groningen Growth and Development Centre.

Graph 24: **Hourly productivity, selected fast growing service sectors** (Average annual growth in % – 1997-2003)



Source: Commission services and Groningen Growth and Development Centre.

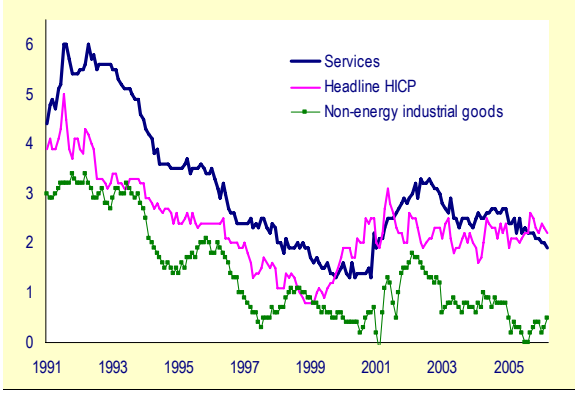
[14] The European Commission is funding further research efforts in this area with the EUKLEMS project. In this context, more detailed and internationally comparable industrial productivity data should be made available by the end of 2006.

3. High and persistent inflation in services

Since January 1991, services inflation – weighting 41% in the Harmonised Index of Consumer Prices – has generally been, at an average of 3.1%, than headline inflation at 2.3% (Graph 25).

Among the main services components, hospital services, medical and paramedical services, health insurance, financial services and transport services have had the highest inflation rates since January 1999. This suggests that high inflation in services may, to some extent, be attributed to temporary factors. Rapid price increases in health-care services have partly to do with reforms, such as the phasing-out of reimbursement of certain health-care services in Germany and the reduction in health-care coverage in the Netherlands in January 2004. Further, strong increases in petrol prices in 2000-2001 and 2005-2006 have fuelled inflation in the transportation sector.

Graph 25: **Services, non-energy industrial goods and headline HICP inflation, euro area**
(Y-o-y % changes – Jan 1991 to March 2006)



Source: Commission services.

Nevertheless, the enduring nature of the inflation differential between services and industry indicates that temporary factors such as structural reforms or high oil prices have only a limited explanatory power. To assess the sources of the differential, Table 7 displays inflation in industrial goods and services as measured by the deflators of value added in national accounts. The change is decomposed into productivity, wage and profit margin components. The table clearly shows that

Table 7: **Inflation as measured by value added deflators, euro area**
(Average y-o-y changes in %) (1)

	1992Q1-1998Q4					1999Q1-2005Q4				
	p	*w*	*q*	*ulc*	*π*	*p*	*w*	*q*	*ulc*	*π*
Industry	0.9	3.4	3.2	0.2	0.6	0.3	2.3	2.5	-0.2	0.5
Services	2.0	2.5	0.9	1.6	0.4	2.1	2.1	0.2	2.0	0.1
of which:										
Market services	1.8	2.4	1.1	1.3	0.6	2.0	1.9	0.2	1.8	0.2
Non-market services	2.3	2.6	0.4	2.2	0.2	2.4	2.3	-0.2	2.5	-0.1
Total economy	1.7	2.7	1.6	1.1	0.6	1.8	2.1	0.7	1.4	0.3

(1) Based on data for BE, DE, ES, FR, IT, AT and FI. p = value added deflator, w = compensation per employee, q = productivity (value added in constant prices divided by total employment), *ulc* = unit labour costs and π = profit margin.
Source: Commission services.

productivity differentials are the main cause of the persistent inflation gap between services and industry. Between 1999 and 2005, productivity growth averaged 2.3% in industry and 0.2% in the services sector. A similar productivity differential was registered during the 1990s. As already discussed, the productivity gap reflects important differences in the production processes of manufacturing and services but also differences in the degree of competition.

Developments in wage growth can differ substantially between services and industry over short periods of time. However, these differences tend to narrow over time. Hence, since 1999, wage differentials between the two sectors have accounted for only a relatively small part of average inflation differentials. Wage growth has remained slower in services than in industry but the gap between the two sectors has been much smaller than productivity differentials. This suggests a certain degree of inter-sectoral labour market integration in euro-area countries. The wage differential even narrowed in the 1990s, which may be an indication that labour market integration has somewhat improved.

Besides its comparatively high level, inflation in services is also characterised by a high degree of persistence in the euro area. After a shock, service prices need more time than industrial goods prices to return to their long-term level.

The higher persistence of service inflation is illustrated in Table 8, which provides sectoral estimates of price-setting equations. Results should be considered with prudence given the short sample over which the equations were estimated, but they point to a much slower response of prices to changes in the business cycle for services than for industry. In the case of market services, the response of prices to changes in unit labour cost appears quite sluggish (the estimated coefficient is actually not significant at the 10% level).

Table 8: **Estimations of sectoral price-setting equations, euro area** (1)
(Dependent variable: inflation in the value-added deflator)

	Industry	Market services	Non-market services
Constant	0.77 (1.7)	1.68 (5.7)	1.69 (4.5)
ULC (lagged 1 q)	0.25 (3.1)	0.14 (1.3)	—
ULC (lagged 3 q)	—	—	0.20 (1.7)
Out. gap (lagged 1 q)	0.40 (3.1)	—	—
Out. gap (lagged 4 q)	—	0.86 (3.7)	—
Dummy 1996:1	—	—	1.31 (2.2)
AR (1)	0.77 (8.3)	0.71 (6.3)	0.63 (5.2)
Adjusted R^2	0.71	0.75	0.47

(1) Based on data for BE, DE, ES, FR, IT, AT, and FI. Inflation and unit labour costs are measured in y-o-y % changes. Sample is 1992Q1–2005Q4. Output gap is calculated as % of potential output. Potential output is calculated with the HP-filter (λ=1600). *t*-statistic within parenthesis.
Source: Commission services.

These findings are in line with a number of recent empirical studies which report higher inflation persistence and price stickiness in service sectors than in the rest of the economy. For instance, Altissimo et al. (2006) conclude that services in the euro area exhibit a larger degree of nominal price rigidity than goods (i.e. price changes are less frequent for services than for goods). Furthermore, price cuts are less common in services than in other sectors. Likely explanations for the higher price stickiness in services include wage rigidities – wages form a

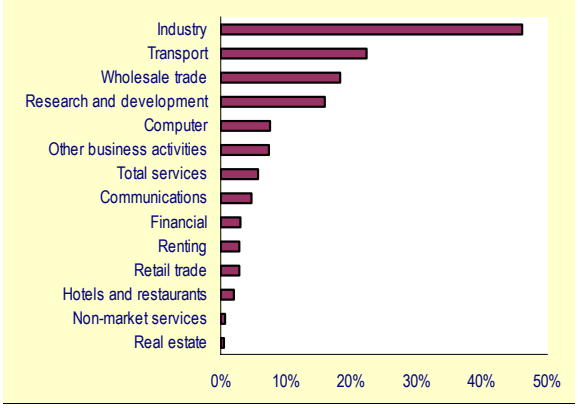
larger share of production costs in the case of services than in the case of goods – and insufficient competition.[15]

4. Services and international trade

A low exposure to international trade

Services are traditionally portrayed as having a small bearing on international trade. Input-output tables computed for seven euro-area countries reveal that exports in most sub-sectors account for less than 2% of total output, with financial services and telecommunications only marginally above that level. On average, service sectors exported less than 6% of their output in 2000 (the last year for which input-output data are available), compared to an export share of close to 40% for the manufacturing industry.

Graph 26: **Exports as a share of production, selected services, euro area** (In % – 2000) (1)



(1) Based on data from seven countnes.
Source: Commission services.

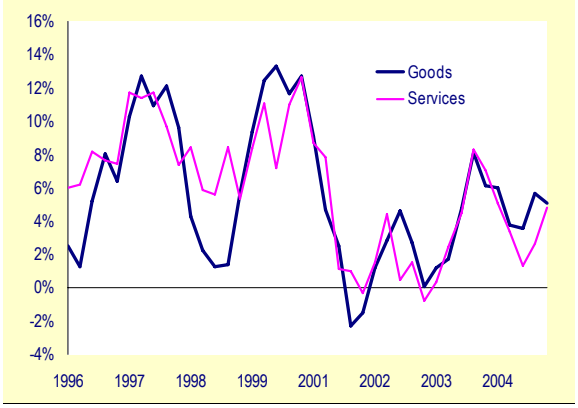
A minority of service sectors, however, export a much bigger share of their output. In addition to transport and wholesale trade, which are more open due to their structural characteristics, services to companies, including R&D and computer services also export a non-negligible share of their output (Graph 26). Taken together these more-export-intensive service sectors account for close to one third of total output in the service sector of the euro area.

Expansion of trade in services is parallel to trade in goods

In unconsolidated terms (i.e. including intra-area trade) the euro area accounted for 33% of total world trade in services in 2005. In recent years, the volume of exports of services expanded at a rapid pace, their share in GDP rising from 8% in 1995 to 12% in 2005 (like balance of payments data, national accounts do not disentangle intra-area flows from extra-area flows). In growth terms, trade in services has merely expanded at the same pace as trade in goods, a rather lacklustre performance given that it is starting from a much lower level.

Over the last decade, fluctuations in euro-area exports of services have been closely correlated with fluctuations in exports of goods (Graph 27). Beyond the fact that trade is driven by common macroeconomic factors in both sectors, an explanation for these co-movements might be that the provision of services is often bundled with deliveries of goods.

Graph 27: **Exports of goods and services, euro area** (Volume, y-o-y change – 1996Q1-2005Q4)



Source: Commission services.

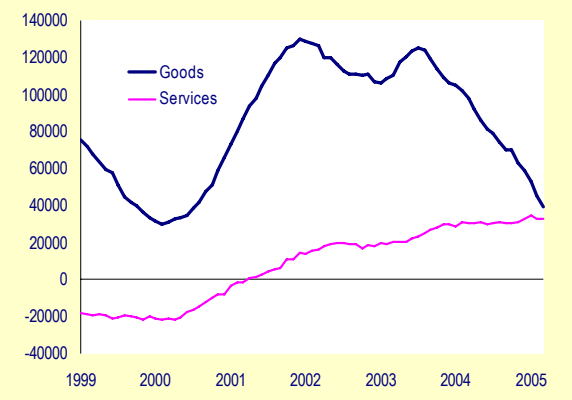
Balance-of-payment data indicate that, a small surplus has emerged in the service sector in recent years, reaching EUR 21 billon in 2005

[15] See Altissimo, F., M. Ehrmann and F. Smets (2006), 'Inflation persistence and price setting in the euro area. A summary of the IPN evidence', ECB Occasional Paper, No. 46.

(0.2 % of GDP) (Graph 28).[16] An analysis of the sub-components of the BoP data reveals the following points (Table 9):

- Travel, construction services and computer services are major contributors to the euro-area surplus.
- Sectors which have registered rapid export growth in recent years include computer services and miscellaneous business services such as legal, management and consultancy.
- It should also be noted that the large surplus registered in the computer services sector is associated with a large deficit in royalties. The surplus and deficit are both mostly attributable to Ireland, reflecting the prominent role of non-European multinational companies in that country.
- Finally, the development of internationally tradable high-value-added business service has some way to go: a deficit in fees related to the provision of technical know-how – through consultancy arrangements for instance – is recorded, in contrast to the significant US surplus (USD 20.7 billion in 2003).

Graph 28: **Trade in goods and services, euro area**
(12-months cumulated balance – in EUR millions, monthly data, 1999 – 2005)



Source: Commission services.

Table 9: **Trade in services – selected components, euro area**

	Net trade (Value in EUR bn, 2003)	**Weight in total trade**(1) (%, 2003)	**Annual growth** (00-03, average %)	
			Exp	**Imp**
Transport	+4.7	20.8	4.4	3.6
Travel	+10.4	24.1	4.9	2.6
Construction	+4.6	2.8	-0.7	-1.7
Computer	+8.7	4.3	18.9	8.3
Royalties	-13.1	5.0	7.3	6.3
Misc. services	-4.2	10.1	11.2	6.4
Of which consultancy	-2.2	5.0	20.7	12.4

(1) Exports plus imports.
Source: Balance of Payments data.

Foreign direct investment as a substitute for direct trade

Notwithstanding the sector's limited direct exposure to foreign trade, services are not immune from the influence of globalisation. Indeed, the sector appears as exposed to foreign direct investment (FDI) as manufacturing. The share of services in the FDI outward position of the euro area (i.e. the total accumulated stock of FDI) rose from 65% in 1995 to 72% in 2003, a level that is comparable to the sector's weight in GDP. The services' stock of FDI represented 25.4% of GDP in 2003, compared to 12.9% for the United States.[17]

Hindrances to direct trade might partly explain why companies use FDI to gain a foothold in external markets. However, product specificities play also a role. For instance, and even when e-commerce developments make it possible, most people are reluctant to avail themselves of the usual range of financial services without face-to-face contacts.

Even if FDI may act as a substitute to foreign trade in services, it may also act as a catalyst, as a reinforced presence of affiliates in a given country might provide additional commercial opportunities for the delivery of cross-border

[16] Part of the improvement results from the integration of Greece into the euro area. Greece records a large surplus in travel and transportation services.

[17] Based on OECD data for 8 Member States. Data include intra-area FDI operations.

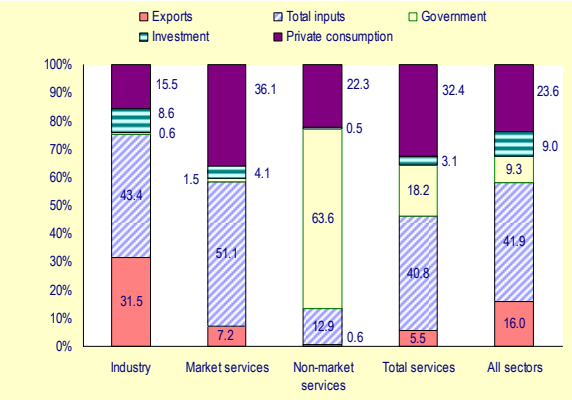
services over the medium term. For instance, according to the US Bureau of Economic Analysis, US affiliates abroad accounted in 2004 for 35% of exports of private services (excluding travel and transports) and for more than 75% of royalties and licence fees received domestically.

Finally, it should be noted that fears that offshoring of service activities outside the euro area would lead to of massive job losses do not seem to be borne out by the available data at the macro level. Euro-area exports of computer services are well ahead of imports, while the deficit recorded by the euro area for miscellaneous services, which encompasses most business services liable to be offshored, has not widened in recent years.

5. Strong linkages between services and industry

There are strong linkages between service and manufacturing sectors. These linkages take two major forms. First, service sectors are important suppliers and outlets for manufacturing. Second, and more indirectly, the interplay between manufacturing and services is part of an economy's adjustment to disturbances.

Graph 29: **Breakdown of total demand by type of demand, euro area** (1) (2) (Shares in % in 2000)



(1) Based on input-output data for BE, DE, FR, IT, AT and FI.
(2) Contribution of stocks not shown (less than 0.5% of total).
Source: Commission services.

The substantial weight of intermediate consumption in demand for both industry and services (about 40% in both sectors, see Graph 29) allows for possible strong interactions between the two sectors. Input/output techniques can be used to assess the size of these linkages. Table 10 displays a breakdown of the sectoral destinations of production in industry and services once the direct as well as indirect linkages related to intermediate consumption are taken into account.[18] It shows that 15% of services production is channelled directly or indirectly to goods sectors – 11% from industry and 4% from other goods sectors. The share is close to 20% in the case of market services and is particularly high in the case of wholesale trade, transport and business services – reaching 30-40% in the case of most business services. On the other hand it is almost negligible for most non-market service sectors.

Overall, the estimates presented in Table 10 indicate that fluctuations in activity in industry can have a significant bearing on services. However, they also suggest that reverse linkages from services to goods are even stronger. Services account for 20% of demand in industry. For instance, the health service sector is an important outlet for pharmaceutical and medical equipment sectors. Service sectors, particularly business services, play a non-negligible role in the demand for office equipment while distributive trade sectors are intensive users of paper and printing products.

Two further points are worth mentioning here. First, while demand impulses from industry to services mostly concern market services, activity in non-market services has a non-negligible driving effect on industry. Second, because the service sector provides significant inputs to the production of goods, developments in the prices of services could have a larger impact on external competitiveness than suggested by the relatively small share of services in total exports (25%).

Besides input/output linkages, service sectors also represent an important source of investment demand. Services sectors account for close to three quarters of total investment demand in the euro area, most of which is directed to industry and construction.

[18] The breakdown is derived from the so-called inverted Leontieff matrix.

Table 10: **Sectoral destination of production, euro area** (1)
(As a share of total sectoral production in % – 2000)

Producing sectors (2)	Sectoral destination					
	Industry	Other goods	Market services	Non-market services	Total services	Total
Industry	69.8	10.1	12.3	7.8	20.1	100
Market services	14.3	5.6	72.6	7.5	80.1	100
Non-market services	2.3	0.9	3.4	93.5	96.8	100
Total services	10.9	4.3	52.8	32.0	84.8	100
Other	16.6	65.4	11.6	6.5	18.0	100

(1) The data are derived from an inverted input-output matrix (based on data for BE, DE, FR, IT, NL, AT and FI). The calculated shares take into account all indirect effects related to intermediate consumption.
(2) Each row displays the sectoral destination of the production of a given sector (e.g; 20.1% of production in industry is shipped to services).
Source: Commission services.

Overall, the idea of industry as a driver of services rather than vice versa must be viewed with caution as reverse effects from activity in services to activity in industry may in fact be even more important.

Apart from input-output relations, a more indirect linkage between industry and services relates to the fact that industrial goods are mostly tradable and services are, to a large extent, non-tradable. Economic theory posits that the interplay between the tradable and non-tradable sectors is an important part of the response of an economy to shocks. For instance, a cyclical surge in domestic demand will generally be associated with a rise in the price of non-tradables (for which supply is purely domestic and therefore restricted) relative to the price of tradables (where increased imports can satisfy additional demand). The inflationary pressures generated by the surge in demand will therefore tend to be stronger in the non-tradable sector. Their strength will depend on the sensitivity of demand to the relative price of non-tradables as well as the ability of the economy to reallocate resources quickly and efficiently from the tradable to the non-tradable sector.

Another example relates to the role of non-tradables in external adjustment. There is evidence that changes in the relative prices of non-tradables explain a large part of observed fluctuations in real exchange rates in industrial economies.[19] In addition, recent empirical research has highlighted the critical role of non-tradables in the adjustment to large current account imbalances.[20] A reduction in a large current account deficit requires a large cut in the domestic demand for imports. This can be achieved either by a large reduction of total domestic demand – with serious costs in terms of growth – or by a shift of domestic demand from imports to domestically produced tradables and to non-tradables. The latter case requires, inter alia, a fall in the prices of non-tradables (relative to tradables). Overall, these considerations suggest that price flexibility in services is important for external adjustment even if services are not very tradable. They might be particularly relevant for the euro area where some Member States post large current account deficits which can no longer be curbed by changes in nominal exchange rates.

6. Services and the business cycle

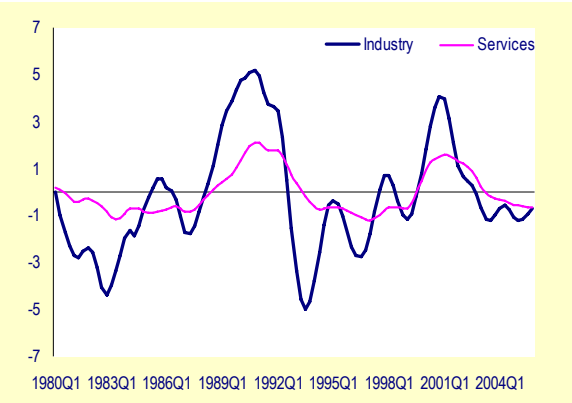
As shown in Graph 30, activity tends to be considerably less cyclical in services than in industry. The difference may be related to the structure of demand, with the more cyclical components of final demand – namely inventories, investment and exports – playing a comparatively much smaller role for services than for manufacturing.

[19] In Burstein, T., M. Eichenbaum and S. Rebelo (2005), 'The importance of nontradable goods' prices in cyclical real exchange rate fluctuations', CEPR discussion Paper Series No. 5306, variations in the relative price of non-tradables are estimated to account for 50% of cyclical fluctuations in real exchange rates in OECD countries.

[20] See for instance Obstfeld, M. and K. Rogoff (2005), 'Global current account imbalances and exchange rate adjustments', Brookings Papers on Economic Activity 1:2005, pp.67-123.

Nevertheless, the picture of a relatively a-cyclical service sector should be nuanced. There is a broad heterogeneity in cyclical behaviours across different service sectors. Cyclical fluctuations are limited in the sectors where market forces do not play an important role such as 'government, community and personal services'. They tend to be much more pronounced in service sectors where market forces are more prominent. Over the past decade, sectors such as 'transport and communications' and 'hotel and restaurant' have actually experienced cyclical swings of a similar magnitude as industry. The cyclicality of market services is partly 'imported' from industry via intermediate consumption. However, it also results from factors that are specific to services. For instance, final demand for hotel and restaurant services is closely tied to developments in household income.

Graph 30: **Cyclical component of value added in industry and services, euro area** (1980Q1-2005Q4) (1)



(1) Based on data for DE, FR, IT, ES, BE and FI.
Source: Commission services.

The shrinkage in cyclical volatility experienced in the euro area since the mid-1990s has been stronger in manufacturing than in services. Some services sectors such as 'transport and communications' and 'hotel and restaurant' have actually seen no reduction in volatility. The latest cyclical downturn points to some increasing degree of convergence in terms of scope of cyclical developments between manufacturing and services.

Turning to business-cycle affiliations, Table 11 displays the correlation of the business cycle of various service sectors with the economy's overall business cycle. Cycles in service sectors tend to be more correlated with the aggregate euro-area business cycle than with industry. They also tend to display stronger cyclical affiliations with each other than with industry.

Table 11: **Business cycle affiliations in the service sector, euro area** (1980Q1 – 2005Q4)

	Correlation with overall cycle (1) (In %)	**Lead/lag** (Number of quarters) (2)
Transport, communication, trade and hotels	96	0
Real estate, finance and business services	93	-1
Government, community and personal services	77	-7
Business sector services	98	0
Total services	97	-1
Industry	94	+1

(1) Correlation between the cyclical component of value added in the sector considered with the cyclical component of total value added in the economy for the 1980-2005 period. Various leads and lags were tested and the number shown corresponds to the highest correlation.

(2) A negative number indicates that the sector considered is lagging the rest of the economy.

Source: Commission services.

Activity in services lags the overall business cycle by about one quarter and the industrial cycle by two quarters. The lag is significantly longer in the case of the 'government, community and personal services' sector (about seven quarters) indicating a very slow (and muted) response of non-market sectors to the business cycle.

7. Concluding remarks

Over the last three decades, the euro area, like other industrialised economies, has been undergoing a progressive shift of its production structure from goods to services. Given the specificities of services, this shift has potentially important consequences for the performance of the euro-area economy in terms of productivity, inflation and business cycle fluctuations. Services tend to be relatively sheltered from external or cyclical shocks. Price increases tend to be stronger and more persistent in services than in

manufacturing industry. Finally, although the sector is the mainstay of employment creation, it suffers from low and decelerating productivity gains.

However, this focus has shown that all of these points should be qualified.

Although the services sector as a whole is considerably more sheltered from global competition and cyclical fluctuations than industry, it exhibits a substantial degree of heterogeneity. Although services as a whole display a low openness to international trade, several sub-sectors export a large share of their production. And if public services are excluded, services also show a relatively high exposure to the business cycle with some sub-sectors experiencing cyclical fluctuations of the same magnitude as industry. This exposure to trade and the business cycle in some sectors is partly indirect, resulting from strong input-output linkages with industry.

Although some service sectors are more exposed to international trade than others, the development of the sector as a whole still appears to be hindered by a lack of competition, which has contributed to the persistence of inflation and to the low productivity growth that have been the hallmark of the sector so far. Increased competition could therefore improve the sector's performance in these areas.

Finally, the recent US experience shows that the shift to services does not necessarily entail a deceleration of productivity for the economy as a whole. There is room for dynamic services markets that contribute to both employment and productivity growth. However, this requires an adequate framework that fosters competition and allows services to innovate, restructure and make full use of the possibilities offered by information and communication technologies.

In January 2004, the European Commission proposed a Directive on Services in the Internal Market that aimed at facilitating the provision of market services across the borders of the EU through reduced regulatory fragmentation and enhanced mutual recognition. It can be expected that an intensification of trade and FDI in services will in turn intensify competition in the sector, providing better value for money to final consumers and to producers using services as an input. Following the amendments voted by the European Parliament, in April 2006 the Commission put forward a revised proposal which almost completely removes the so-called 'country of origin principle'. Although the removal of the 'country of origin principle' will reduce the overall impact of the Services Directive, according to currently available empirical analyses 70-90% of the gains expected from the original proposal would still be maintained in its revised version. Therefore, the final adoption and implementation of the revised Directive is urgently needed as successfully implemented reforms in services can offer important benefits.

And it is not just regulatory changes that can make a difference. What matters is to inject new ICT capital into the economy and to complement this with the organisational and managerial changes needed to reap the full range of benefits associated with the introduction of ICT goods and services. As services depend increasingly on human capital rather than physical capital, changes in organisation and management will be crucial to ensure an efficient delivery of services. Mastering such know-how will be the key to exploiting the full potential of services in order to deliver new sources of growth and employment for the euro area.

Overall, structural changes in service sectors would help improve the performance of the euro-area economy, in terms not only of productivity and growth but also its external competitiveness and resilience to economic disturbances.