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Evolution of EU and its Member States'Competitiveness in International Trade

Louise Curran & Soledad Zignago

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EVOLUTION OF EU AND ITS MEMBER STATES' COMPETITIVENESS IN INTERNATIONAL TRADE

NON-TECHNICAL SUMMARY

Countries of the South are today playing a major role in the development of international trade: whereas the North was the strongest driver of world trade from 1995 to 2000, since 2000 the South has accounted for 60% and 50% of the growth in world exports and imports of goods respectively. These countries and China in particular, are gaining world market shares to the detriment of industrialised countries: between 1995 and 2005, China has almost doubled its world market shares. This evolution is all the more worrying that developing countries specialise in technological goods, hitherto considered as a comparative advantage of developed economies.

This work looks in detail at how the EU has coped in this rapidly changing context. In recent years, many analysts and politicians have compared the performance of EU industry unfavourably with its key competitors on world markets. They have bemoaned the lack of investment in research in the EU, the bureaucratic hurdles to innovation and investment... All of these weaknesses certainly exist in some or even all Member States. However the following detailed and rigorous analysis paints a somewhat brighter picture than might be expected. It shows that, compared to its key competitors, the EU has shown remarkable resilience in its capacity to export relatively expensive and technology-intensive goods to the rest of the world.

The figures show that the EU has performed particularly well in the more up-market, expensive levels of the market, where it has a world market share of 31% (compared to 20% in all non-energy goods). This analysis of export performance by market level enables us to put the overall gains of emerging countries into perspective. The latter are clearly specialised in low market products. Although they are making progress on all fronts, they are making little headway in the up-market sector. Here the Chinese case is particularly striking – the expansion of the export capacities of its industry over the period 1995-2004 was almost exclusively in low market products. These findings indicate that developed countries in general, and the EU in particular, retain a clear advantage over the emerging countries of the South; for the moment the latter are only making a significant impact on the low end of the market.

This report also shows that EU enlargement has had important positive impacts on EU trade performance. The analysis indicates that, although the EU10 (new member states) are clearly evolving in the direction of greater homogeneity with the EU15 over time, the two regions have important complementarities. The growing presence of EU10 companies in up-market products was the key driver of the increased market share of the EU25 in this sector, while their strong performance in high tech products helped mitigate EU15 losses. However it is in the division of labour within the Union that the effect of enlargement is most clearly felt. The new member states have become important suppliers of intermediate goods to EU 15 industry, particularly German firms, whose competitiveness in export markets seems to have benefitted from these inputs.

ABSTRACT

After a long period of domination by the industrialised countries of the North, international trade is today driven by the dynamism of developing countries. This work seeks to analyse how the EU is performing in the light of this emerging competitive threat, by comparing the EU's export performance on the world market with that of its key competitors between 1995 and 2004. The figures show that the EU has performed particularly well in the more up-market, expensive and high tech levels of the market. Most notably, Europe is the market leader in up-market products, with almost 31% of the world market in 2004 (versus 20% of the market for all goods). In addition, there is evidence that the EU's recent enlargement has helped it to maintain a strong performance, thanks to an increasing division of labour within the region. The new member states have become important suppliers of intermediate goods to key EU producers, and in particular German firms, thus becoming increasingly vital to EU competitiveness.

JEL Classification: F1
Key Words: EU, Competitiveness, Market Shares, Export Prices

COMPÉTITIVITÉ INTERNATIONALE DE L'UE ET DE SES ÉTATS MEMBRES

RÉSUMÉ NON TECHNIQUE

Longtemps dominé par les pays du Nord, le commerce international de biens est désormais entraîné principalement par le dynamisme des pays en développement. En effet, le Sud contribue pour respectivement 60 % et 50 % à la croissance des exportations et des importations mondiales de produits manufacturés sur la période 2000-2005. Ces pays, la Chine en tête, gagnent ainsi des parts de marché au détriment des pays industrialisés, y compris l'Europe ; de 1995 à 2005, la Chine a presque doublé ses parts de marché mondiales. Cette évolution est d'autant plus préoccupante qu'elle s'accompagne d'une spécialisation croissante des pays du Sud dans les produits à fort contenu technologique, jusque là considérés comme un avantage comparatif propre aux économies les plus développées.

Comment l'UE fait-elle face à cette nouvelle concurrence ? Ces dernières années, de nombreux analystes et responsables politiques ont porté un regard sévère sur les capacités de l'Europe à conserver un haut niveau de compétitivité sur les marchés mondiaux. Ils ont notamment déploré le manque d'investissement dans la recherche et le développement, les obstacles bureaucratiques à l'innovation et l'investissement... Assurément, ces faiblesses existent dans certains, voire tous les États membres. Néanmoins, une étude détaillée et rigoureuse des performances européennes en matière d'exportation amène à un constat moins sombre. Comparée à ses principaux concurrents, l'UE a démontré une remarquable résistance dans sa capacité à exporter des biens à haute valeur ajoutée, relativement coûteux et à fort contenu technologique.

L'Europe est en effet leader dans le haut de gamme, avec presque 31% de parts de marché mondiales en 2004 (contre 20 % pour l'ensemble des biens hors énergie). L'analyse des performances à l'exportation par gamme de prix permet de relativiser les conséquences de la pression exercée par les pays émergents. Ces derniers montrent en effet une spécialisation marquée dans le bas de gamme. S'ils gagnent des parts de marché sur tous les tableaux, ils progressent assez peu sur le haut de gamme. Là encore, le cas de la Chine est particulièrement marquant : l'expansion de ses capacités d'exportation au cours de la décennie 1995-2004 s'est faite presque exclusivement sur le bas de gamme. Ces résultats suggèrent que les pays développés dans leur ensemble, et tout particulièrement l'UE, conservent un avantage certain sur les pays du Sud ; pour l'heure, ces derniers ne peuvent exercer une pression concurrentielle significative que sur les variétés de produits très bon marché.

Ce travail montre également que le récent élargissement a contribué positivement aux performances commerciales européennes. Tout en étant complémentaires de celles de l'UE 15, les exportations des nouveaux États membres (UE10) se rapprochent de celles de l'UE15. Ainsi, leur positionnement dans le haut de gamme s'est renforcée sur la période 1995-2004, et leurs performances dans les biens de haute technologie ont en partie compensé les pertes de l'UE15 dans ce domaine. Mais c'est sans doute par la division internationale du travail accrue au sein de la région que l'impact de l'élargissement est le plus important. Les nouveaux États membres sont devenus d'importants fournisseurs de biens intermédiaires pour les entreprises de l'UE15, et en particulier de l'Allemagne, dont la compétitivité à l'exportation a pu ainsi se renforcer.

RÉSUMÉ COURT

Longtemps dominé par les pays du Nord, le commerce international de biens est désormais entraîné principalement par le dynamisme des pays en développement. Ce travail analyse comment l'UE fait face à cette nouvelle concurrence, en comparant les performances exportatrices de l'UE à celles de ses principaux concurrents sur les marchés mondiaux entre 1995 et 2004. Les résultats montrent une remarquable résistance de l'UE dans sa capacité à exporter des biens à haute valeur ajoutée, relativement coûteux et à fort contenu technologique. L'Europe est notamment leader dans le haut de gamme, avec presque 31% de parts de marché mondiales en 2004 (contre 20 % pour l'ensemble des biens hors énergie). L'élargissement de l'UE à l'Est a contribué positivement à ce résultat grâce à une division accrue des processus productifs au sein de la région. Les nouveaux États membres sont devenus d'importants fournisseurs de biens intermédiaires pour les entreprises de l'UE15, et en particulier pour l'Allemagne, favorisant ainsi la compétitivité de leurs exportations.

Classification JEL : F1
Mots-clefs : Union Européenne, Compétitivité, Parts de marché, Prix à l'exportation

EVOLUTION OF EU AND ITS MEMBER STATES' COMPETITIVENESS IN INTERNATIONAL TRADE

Louise Curran[*] & Soledad Zignago[•]

1. INTRODUCTION [1]

On the eve of 2010 - the year by which its leaders seek to ensure that it is the most dynamic and competitive knowledge-based economy in the world - the economic outlook for the EU is unfavourable. The harsh winds of recession are blowing through many key markets and the EU itself, making the broader Lisbon targets of 'growth and jobs' even more challenging. Against this sobering background, this work seeks to access the progress made by the EU in the ten years up to 2005 as seen through its trade performance. The story from this analysis is a cautiously optimistic one. In spite of pockets of comparative disadvantage the EU continues to command large shares of key world markets. In addition, this paper finds evidence that the EU's recent enlargement has helped the EU to maintain a strong performance, in spite of increased global competition. Challenges certainly remain, but its recent performance gives reason to believe that the EU can leverage its strengths even as the economic environment toughens.

Over the years, the EU has had a tendency to compare its performance unfavourably with its key partners – the US, Japan and, increasingly, China. European analysts and politicians have bemoaned the lack of investment in research in the EU, the bureaucratic hurdles placed in the way of innovation, the incapacity to create jobs. All of these weaknesses certainly exist in some or even all Member States. However what this work will show is that, in spite of these problems, the EU has shown remarkable resilience in its capacity to export relatively expensive and technology-intensive goods to the rest of the world.

The trade figures for the last ten years which are analysed in this work do not tell a story of shrinking capacities and lack of innovation. Rather they show that the EU is still a major force in world trade and retains many strengths. Clearly EU companies are losing ground as new actors from dynamic emerging countries increase their presence in world markets. However the EU's performance so far gives reason for cautious optimism on several fronts, although clearly there is no room for complacency. It is vital today, as we enter a period of uneven growth and the shrinking of some economies, that the EU and its industries continue to invest in the future. This is the key to defending the EU's market shares in our most important sectors and markets.

[*] Toulouse Business School, l.curran@esc-toulouse.fr

[•] CEPII, soledad.zignago@cepii.fr

[1] The authors would like to thank Vincent Aussilloux, Lionel Fontagné, Matthieu Crozet and Agnès Bénassy-Quéré for their comments. We are indebted to Isabelle Bensidoun and Deniz Ünal-Kesenci for computing the indicators of revealed comparative advantage taking into account trade in services (CEPII-CHELEM database). An earlier version of this work was a CEPII report to the DG Trade, European Commission (same authors, same title) and was presented at the Forum on Services and Trade Liberalisation, organised by the Czech Presidency of the Council of the EU, Prague, 2 February 2009. Some of results presented in the appendix are taken from Cheptea, Fontagné, and Zignago (2008), "Underlying economic factors determining EU member states' trade policy stance", CEPII report to the DG Trade, May. Finally, we thank the Fondation Robert Schuman for an earlier version of the EU map of world market shares presented in Figure 11.

The following analysis shows that the EU has performed well in up-market products, where it is maintaining its high market share even as its key developed country partners lose ground. In other words the EU has managed to continue to command relatively high prices for its products compared to those prevalent in the world market. Obviously part of the reason for the higher prices of EU goods is that the EU is a high cost economy. However the fact that EU exporters have maintained their significant market share in many key sectors, in spite of their relatively higher prices, points to successful investments in marketing, innovation and technological upgrading which have enabled them to propose an attractive price/quality mix on a global level.

Another key finding is that EU companies continue to supply a large share of the world market in high tech and medium tech products. In spite of their well documented weaknesses in certain key technologies, especially information technologies, they have shown resilience in high technology sectors, in contrast to companies from the US and Japan which have lost significant market share. Chinese companies are making major inroads into such markets, but so far the impact on the EU has been muted. This should not be seen as cause for complacency. The EU still lacks competitiveness in the high tech sector overall and its market share in the sector is lower than it should be, given its overall performance in world trade. However its current market positioning is not indicative of an economy which lacks inventiveness or innovation.

Within this broad picture, the EU member states are highly heterogeneous in their sectoral specialisations and performance. Certain countries have significant advantages in manufactured goods (Germany, Ireland and Italy) while several new member states are making good progress in this sector (Czech Republic, Hungary, Poland). Others – including countries as diverse as the UK, Greece and Lithuania – have performed particularly well in the services sector and are thus disadvantaged in much of this discussion on trade performance as their economies are biased towards other forms of exchange.

Looking in more detail at the market positioning and technological level of EU member states we also observe a high level of heterogeneity. The EU's strength in up-market products is due, to a large extent to the performance of Germany, but other Member States are making progress – in particular Ireland, but also some new member states. Similarly, much of the EU's positive performance in high and medium tech goods (especially the latter) is a reflection of the extensive capacities of German industry. However France and the UK also perform well in high tech goods and other key exporters have significant strengths – for example Italy in low tech goods (mainly textiles, clothing and other fashion goods). Furthermore some smaller countries have developed their competitiveness in certain key technologies. Ireland and the Netherlands each have more than 1% of the world market in high tech goods and Belgium/Luxembourg commands a similar share in medium tech goods.

The EU has recently undergone the most significant enlargement in its history. This has inevitably impacted on both its trade relations with the world and the nature of intra-EU trade. This work therefore also looks at the implications of this change for the EU25s trade performance[2]. Overall the analysis indicates that the EU15 and EU10 (the new member states) have important complementarities, although the EU10 are clearly evolving in the direction of greater homogeneity with the EU15 over time. Key conclusions which can be made on the basis of this analysis include: (i) EU enlargement has enabled the EU to continue to command high global market shares in all products; (ii) The increasing presence of EU10 companies in

[2] The figures in this work are mainly from the period up to 2005. In most of the discussion which follows, therefore, we will discuss the performance of EU25 countries rather than EU27.

up-market products was the key driver of the increased market share of the EU25 in this sector, while their strong performance in high tech products helped to mitigate EU15 losses.

Where the impact of enlargement is seen perhaps most clearly is in the developments in intra-EU trade and, particularly, in trade in intermediate goods. The new member states have become important suppliers of intermediate goods to several key EU producers. Their inputs are therefore increasingly vital to the competitiveness of final goods exports from other EU countries. In addition, EU10 countries are themselves expanding their sourcing of intermediate goods abroad, both within the Union and globally. Thus on the one hand EU10 companies are becoming more important sources for industries in other EU countries, while they themselves are becoming more globalised, taking advantage of greater openness both within the EU and towards the rest of the world to better integrate their production structure.

How have these changes in integration patterns contributed to the EU's positive performance as a global trader? Analysis of the composition of intermediate imports of the different member states indicates that their companies have adopted a variety of strategies to secure competitiveness. Nevertheless there are commonalities between some countries. The key EU 'export juggernaut' – Germany – has adopted a strategy of increasing integration of production within the EU. In particular we see an increasing use of intermediate goods from the new member states in German imports, reflecting a segmentation of production on a European level which has also been observed in other studies (Marin, 2008, Geischecker, 2006). Thus the outstanding performance of German exporters in world trade is underpinned by important contributions from suppliers in the new member states.

At the same time as they are becoming important sources for their EU customers, the new member states themselves are also expanding their sourcing of intermediate goods, both within the EU and globally. It is striking that several new member states have re-oriented their sourcing strategies, looking increasingly beyond their traditional suppliers of intermediate goods towards the world market and rapidly increasing their imports of intermediate goods from all sources.

With intermediate goods making up almost half of EU25 imports, it is clear that markets within and beyond the EU remain important sources for EU industry. Re-enforcing and strengthening both the Single Market and an open trade policy are thus vital to ensuring that EU producers can continue to make the appropriate strategic choices which enable them to re-enforce their competitiveness, command premium prices and update their technology. In short, imports from all sources remain vital to the EU's export based economy.

2. THE EU IN THE GLOBAL ECONOMY

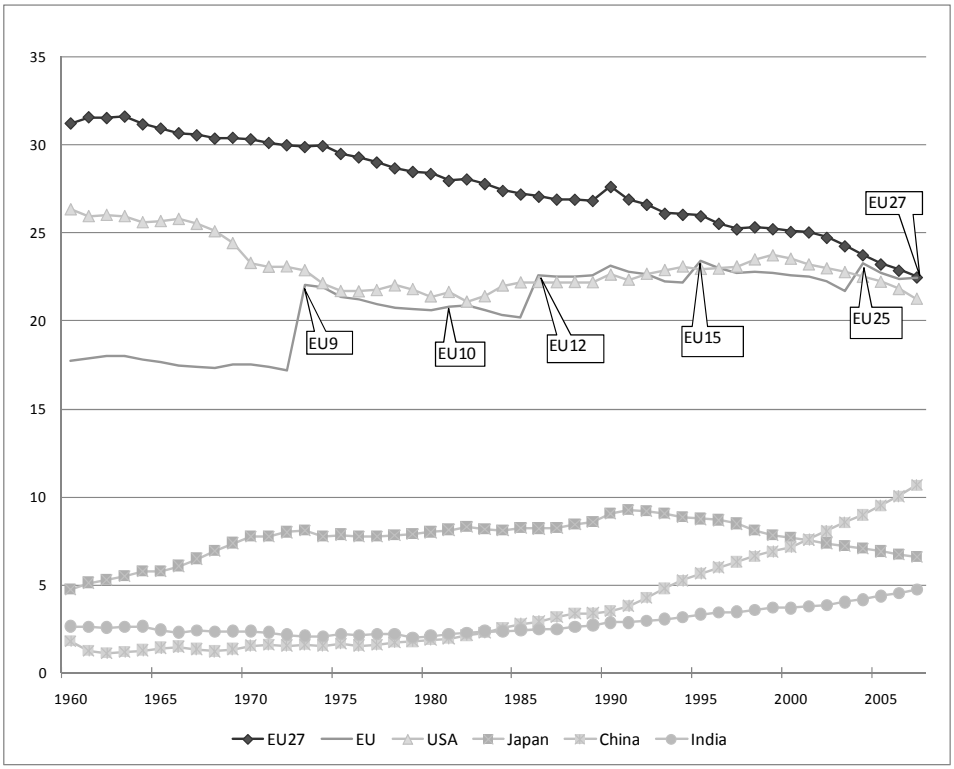
2.1. The rise of new economic powers – running to stand still?

The global economy today is much more complex than it was for much of the second half of the 20th century - between the post war period and the collapse of communism. The 'new world order' that emerged after this collapse brought a whole new wave of countries into the core of the global economy. The rapid growth rates witnessed in many emerging markets have changed the economic balance of power. European countries need to realise that the world is changing and that this very rapid change seems unlikely to grind to a halt.

The Union's successive enlargements have added economic weight to the EU and enabled it to maintain its pre-eminent position in world trade and in many key sectors. Nevertheless its share of the world economy has receded as other actors have grown more quickly. The United

States also saw its share of world GDP decline until the mid-1980s, when the decline was largely halted, at least until recent years. Their economy managed to find internal dynamism which was lacking in Europe.[3] Figure 1 shows that the EU27 has seen its relative GDP decline over the 40-year period, to a level just above the United States.[4] China's progress marks an obvious contrast with these developments. Clearly the current global economic crisis will further change the profile of world trade and risks exacerbating existing trends.

Figure 1: Percentage share of selected countries in world GDP (PPP GDP in 2005 prices)



Source: CHELEM, CEPII, author's calculations.

2.2. A world of emerging new competitors and markets

European companies are now operating within a world economy which is changing rapidly and where old certainties are crumbling. Even aside from the global financial crisis which is causing further restructuring and realignment, there are fundamental changes in the structure of the world economy which mean that competition is a rapidly evolving concept. In particular, new large scale economies are appearing. Already big in absolute terms, their relatively rapid growth should make these countries key players on the world scene in the very near future. From this perspective, the recent failure of trade talks in Geneva was less a symptom of badly prepared or managed negotiations than of a radically changing balance of economic power in the world.

Brazil, China and India fall into this new category of countries, as does Russia, notwithstanding the peculiarities of its transition and its vulnerability to energy price changes. These BRIC (Brazil, Russia, India and China) economies, are destined to play a fundamental

[3] Further handicapped by less favourable demographics than the United States.

[4] Note the blip in the statistics caused by the reunification of Germany.

role, though their low overall standards of living (perhaps with the exception of Russia) means that even with rapid progress, they will not catch up with the rich countries in the first half of this century.

The world economy is therefore facing a new phenomenon. Emerging big open economies play an increasingly important role in the world economy although their average standard of living remains consistently lower than in the old industrialised countries. Owing to significant internal inequalities and the fluid movement of capital and technology at international level, these countries also enjoy a wider range of comparative advantages than has traditionally been the case: soya cake and aircraft, footwear and computer hardware, clothing and IT services. The varying and sometimes counter-intuitive comparative advantages of these key competitors will be further explored in this work.

In addition to the BRICs, a number of smaller countries are making the most of integration in the global economy and progressing rapidly in international trade. They are not held back, as the BRICs are, by the sheer size and backwardness of whole swathes of the "domestic" economy. These countries are using their trading success to catch up quickly and the regular topping-up of this list, especially in Asia, shows that the competitive challenge to the European economies is here to stay.

Overall, the countries of the South are now playing a major role in the development of international trade. The breakdown in Table 1 shows that whereas the North was the strongest driver of world trade from 1995 to 2000, accounting for almost half of the growth in world exports and three quarters of the growth in world imports, the South is rapidly increasing its role. Since 2000 the South has accounted for more two thirds of the growth in world exports and already almost half of the growth in world imports.

Table 1: Contributions to growth in world trade by the North and South

	1995-2000 period			**2000-2005 period**		
	North	**South**	**World**	**North**	**South**	**World**
Northern exporters	32.7	15.0	47.7	14.2	24.9	39.1
Southern exporters	39.9	12.4	52.3	35.3	25.5	60.9
World	72.6	27.4	100 *(+29.9%)*	49.5	50.5	100 *(+51.1%)*

Source: BACI, authors' calculations. Exports in rows, imports in columns. In parentheses the world trade growth for each sub-period.

In this very dynamic context, the importance of the EU to world trade is inevitably falling. The importance of intra-EU trade increased significantly in the 80s, when trade between the EU15 was close to 30% of world trade in 1990 (Figure A1). However, largely due to the dynamism of other economies, it has since fallen to 20% (2006 figures). The inclusion of the new member states has stabilised the share somewhat, but it is too early to say whether there could be a reversal of this fall. NAFTA also saw an increase in the importance of intra partner trade in global terms in the early years of the agreement, but there too, very recent trends are towards a reduction in the importance of intra-NAFTA trade in global term, now representing only 7% of the total.

The rest of this work will look in more detail at how the EU has coped in this rapidly changing context.[5] It will consider its performance overall and in certain key sectors in order to identify the key strengths and weaknesses of the newly enlarged EU. What is clear is that, in spite of the many challenges which the EU faces, its performance has been relatively good. Even with the rapid emergence of highly competitive new economic operators, the EU has maintained significant market share in many key sectors. If EU companies can leverage their strengths and continue to maintain these market shares, the new world economic order does not need to be seen uniquely as a threat, but also as an opportunity.

As the objective of this work is mainly to analyse the performance of the EU and its member states in the global economy, unless otherwise indicated, the trade figures which will be discussed will be those of world trade, without intra-EU trade. In addition, given the high level of volatility in energy and mineral prices and the high level of concentration in exports of these goods, this sector has also been excluded from analysis[6]. When we talk of EU trade as a whole in this work therefore, we are talking of world trade in merchandise, minus all energy products[7] and excluding intra-EU25 trade (with the exception of section 4.4).

2.3. The EU in world trade

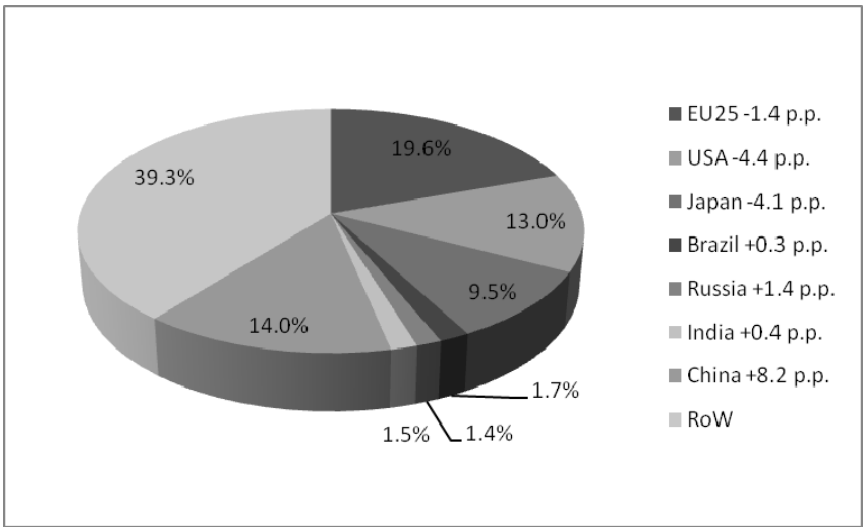
The EU remains the world's most important source of goods. Figure 2 shows the world market share of the key actors in 2005 and changes in these figures. The EU has the largest share of the world market in merchandise: 19.6% (intra-EU trade excluded). This is significantly higher than the US (13%) or Japan (9.5%). In addition the EU has retained its share more effectively in the period 1995-2005, losing 'only' 1.4 percentage points (p.p.) compared to over 4 p.p. for the other two actors. The most striking figure, however, is that for China, whose exporters now command over 14% of the world market, an increase of over 8 p.p. in ten years. The other BRIC economies are minnows in comparison. In a nutshell, the EU continues to command a substantial share of global merchandise trade and that it is retaining its share more successfully than other developed country competitors, although all are facing increasing competition from China.

[5] For an analysis of the EU trade with emerging economies, see Bensidoun, Gaulier, Lemoine and Ünal (2009).

[6] Specifically we exclude HS25 – salt, cement etc; HS27 – mineral fuels, oils etc; HS97 works of art; HS98 – special classification provisions and HS99 – Special transaction trade. See the technical appendix for more details.

[7] Given the timescale of the figures in the report (mostly up to 2005), most figures are for EU25 not EU27.

Figure 2: World market shares in 2005 (%) and change in the period 1995-2005 in percentage points (p.p.) – Triad and BRICs



Source: BACI, author's calculations.

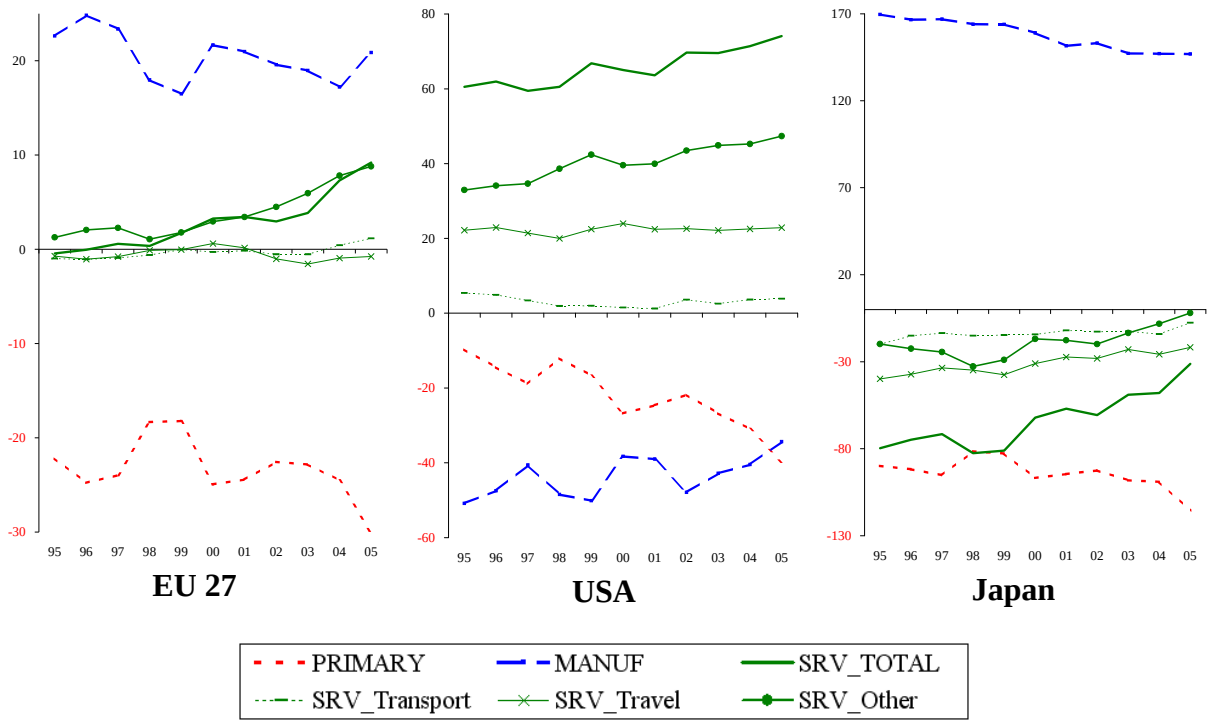
2.4. The economic specialisation of the EU and its key competitors: the comparative advantages

The EU's trade performance is obviously a function of the performance of its different industries and sectors. This section will look in more detail at the economic specialisation of the EU25. It will show that this structure differs noticeably from its international competitors, even those competitors of a similar economic level. In this subsection, in contrast to elsewhere in the work, trade in both services and energy are included in order to give a truly global view of the different countries' strengths and weaknesses.

The extent to which economies are specialised in given sectors can be seen by the relative contribution of the sectors to the economies' trade balance (CTB). Figure 3 and Figure 4 seek to illustrate this sectoral structure through an index which highlights changes in the comparative advantages and disadvantages of the EU and its main competitors during the period 1995-2005. A positive (negative) value for the indicator shows that the country has a comparative advantage (disadvantage) in the sector in question[8]. This kind of index will be used frequently in this work, at different levels of aggregation, to highlight the comparative advantage of EU industry and that of its partners, as revealed through their trade performance.

[8] The index compares the actual trade balance of a country for the sector, with a theoretical balance assuming the absence of specialisation. The theoretical balance is computed by spreading the overall balance across the sectors according to their respective shares in the country's total trade. This index is expressed here in thousands of dollars of total trade and adds up to zero over the sectors (so the macroeconomic imbalance is netted out). It can be interpreted as a measure of the "revealed" comparative advantage of the country in a given sector. We are indebted to I. Bensidoun and D. Ünal-Kesenci for having computed these indicators of revealed comparative advantage based on the CEPII-CHELEM database. The related methodology is detailed in Bensidoun and Ünal-Kesenci (2008).

Figure 3: International specialisation of Triad countries (1/2)
(contribution to the trade in goods & services balance, in thousands of total trade)

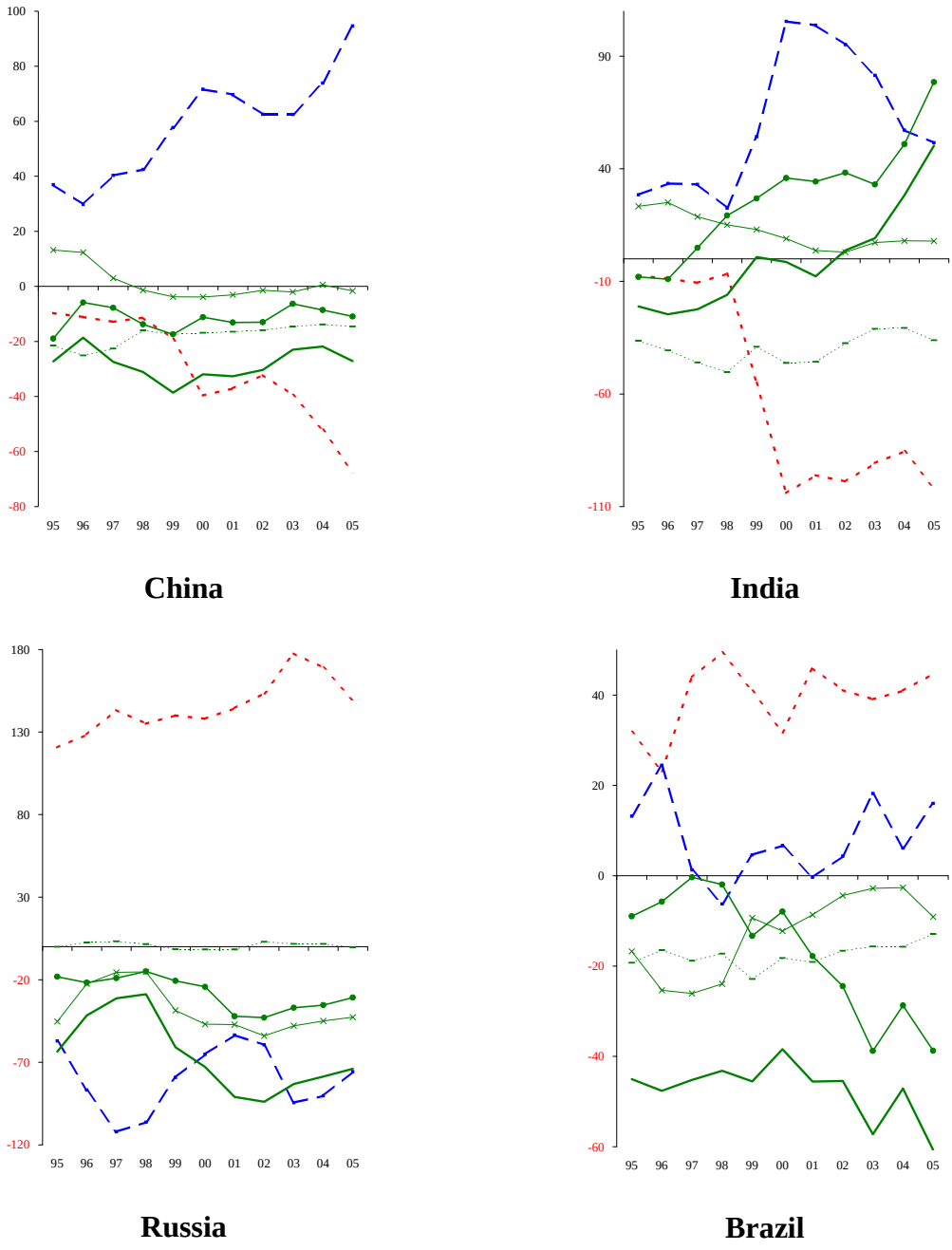


Source: CHELEM database, Bensidoun and Ünal-Kesenci (2008) calculations (see footnote 8).

What is striking in the figures is the very different positioning of the Triad members. The EU and Japan (especially the latter) exhibit relative strength in manufacturing, where the US is weak (although improving slightly). The US's strength is in services, especially other services (finance, insurance and other business services), where the EU also shows increasing comparative advantage. The only commonality within the Triad is their consistent weakness in primary products, where Russia and Brazil are strong.

In services, we see a mixed performance, with both developed and developing countries performing strongly. The US and India exhibit significant and growing strength in services. However India in particular has witnessed great variation in its position in recent years with a major increase in manufacturing specialisation in the early years of the period giving way to specialisation in services in the later years. China, in contrast, has maintained a strong and growing specialisation in manufacturing throughout the period, but has seen little progress in its underdeveloped services sector and a, rather predictable, deterioration in its situation in primary products. Overall, these figures tell a story of specialisation which is certainly more nuanced than a traditional view of the international division of labour, where developed countries specialise in services and developing countries in primary products and manufacturing.

Figure 4: International specialisation of BRIC countries (2/2)
(contribution to the trade in goods & services balance, in thousands of total trade)



Source: CHELEM database, Bensidoun and Ünal-Kesenci (2008) calculations (see footnote 8).

The rest of this section will focus on specialisation in goods. Table A2: Contribution to Trade Balance (CTB) by sector and Intensity of Specialisation (IS), 1995 and 2005 in the annex provides details of the sectoral contribution to trade balance for the EU as a whole and its key competitors. Overall, the EU has significant competitive advantage in chemicals, motor vehicles and machinery. In the first two of these sectors it is gaining competitive advantage, while in machinery its performance deteriorated between 1995 and 2005. Significant

comparative disadvantages are seen in televisions, radios etc, computers, apparel and textiles. In all of these sectors, except computers and office machinery, the EU's position has deteriorated over time. Most other sectors do not show significant changes over the period, with the exception of agriculture where the EU's comparative disadvantage seems to have considerably reduced – from -22.8 to -7.4 over the decade. The US shows a structure of revealed comparative advantage which is not dissimilar to the EU's. It is less competitive in chemicals and machinery and especially so in motor vehicles (-22 compared to the EU's +25). In other transport, however the US has strengths which the EU does not. This is also the case in medical devices and, to a lesser extent, agriculture. They also show slightly less weakness in computers and televisions. Japan shows comparative disadvantage in a large number of sectors. The exceptions are, in particular, cars (+77) and machinery (+30), with much lower figures in TVs (13), electrical equipment (6), other transport (6), medical devices (4) and plastics (2).

China, on the other hand, exhibits significant comparative advantage in many sectors most strikingly, computers (43), TVs (31), furniture (30) apparel (28) and textiles (20). In all except furniture and apparel, its competitive advantage is increasing and strikingly so in TVs and computers. There are a few sectors, however, where China has clear comparative disadvantages – medical devices (-68), chemicals (-54), metals (-34) and machinery (-10). In at least two of these sectors – chemicals and machinery – the EU is well placed to exploit the market opportunities such weaknesses reveal. The situation in relation to India is less encouraging from an EU point of view as only in the machinery sector does the EU have a comparative advantage compared to the former's comparative disadvantage (-23). India reveals little comparative advantage in mechanical/heavy industry sectors with the exception of cars, whereas it shows significant comparative advantage in apparel (41) and textiles (43), although both have been eroded over the decade. A striking element in India's performance is the major advances seen in the chemicals sector which had a significant comparative disadvantage in 1995, which evolved into a comparative advantage of 21 in 2005. Finally, Brazil has seen a strengthening of its position in agricultural and food industries, a worsening of its comparative disadvantage in chemicals and medical devices and a significant improvement in its position in motor vehicles which went from a comparative disadvantage of -23 to an advantage of 34 over the decade.

2.5. The EU strong in up-market products

Although the EU is continuing to exhibit strength in manufactured products, analysis indicates that these products are frequently not competing at the same level of the market as those of their key competitors. The relative product positioning of the EU and its competitors can be assessed by comparing the unit values of trade flows. To do this we rely on observed values of traded products to infer their market positioning. Total world merchandise exports at HS 6 level were examined and classified into three ranges of unit values. The market share of each country/region is then calculated. The results are reported in Table 2.[9]

These figures point to a clear up-market positioning of EU exporters. Not only does the EU have almost twice the market share in top range products compared to the middle or lower range, it also has double the market share of both the US and Japan in these up-market products. In addition, the EU's position in this segment is actually strengthening somewhat compared to the declines seen in the other two sources. Another key message of the table is

[9] The table uses 2004 data, as data for later years are not yet available. More details about the data and the methodology are provided in the technical annex.

the significant improvement in Chinese market share across all market segments. Chinese gains are concentrated in the bottom segment of the market where they have gained 11 percentage points, mostly at the expense of the Triad. However Chinese exporters (often foreign firms assembling in China) have also started to gain market share in the middle and even upper segments of the market.

Table 2: World market share by market segment in 2004 and change in the period 1995-2004 – Triad and BRICs

	Low		Mid		Up		All	
	2004 (%)	1995-2004 (p.p.)	2004 (%)	1995-2004 (p.p.)	2004 (%)	1995-2004 (p.p.)	2004 (%)	1995-2004 (p.p.)
EU25	14.2	*-3.51*	18.1	*-1.15*	30.8	*0.58*	19.9	*-1.12*
USA	11.5	*-4.21*	12.9	*-4.72*	14.6	*-3.04*	13.4	*-3.99*
Japan	6.9	*-1.35*	12.0	*-7.02*	12.7	*-3.71*	10.0	*-3.56*
Brazil	2.4	*0.39*	1.6	*0.13*	1.1	*0*	1.6	*0.2*
Russia	2.2	*0.31*	1.3	*0.52*	1.0	*0.71*	1.4	*0.36*
India	1.9	*0.46*	1.5	*0.65*	1.0	*0.5*	1.4	*0.34*
China	20.0	*10.87*	10.6	*5.81*	3.2	*1.87*	12.2	*6.42*

Source: BACI, authors' calculations.

It is also interesting to look at the importance of trade at these different market levels to total exports of the key world economies. Table 3 shows the exports structure in 2004 and changes over the previous ten years. Overall the table shows a structure of trade which is close to what would be expected – low and mid level goods are more important to the exports of emerging economies, while up-market products are more important to the Triad.

Table 3: Structure of exports in terms of market segments – Triad and BRICs

	2004 (%)			1995-2004 (p.p. change)		
	Low	Mid	Up	Low	Mid	Up
World	**30.5**	**38.3**	**31.3**	**0,49**	**-0,82**	**0,33**
EU25	20.6	33.3	46.1	-3,4	-1,0	4,4
USA	26.6	38.5	34.9	-1,52	-1,59	3,12
Japan	19.6	42.7	37.7	3,32	-7,11	3,79
Brazil	45.0	36.2	18.9	5,23	-2,38	-2,85
Russia	45.1	32.3	22.5	-5,96	-1,53	7,49
India	39.2	38.4	22.4	-7,8	2,76	5,04
China	54.0	37.1	8.9	0,07	-0,96	0,89

Source: BACI, authors' calculations. The sum of the first three columns is 100.

The importance of up-market products to the EU is clearly seen in the structure of its trade. Up-market products are becoming ever more important in EU exports, reaching 46% in 2004, up 4.4% over the decade. Up-market products are far more important in EU exports than in those of any other competitor. The very low share of up-market products in Chinese exports indicates that the EU is, indeed, competing at a very different market level to this key

competitor. Furthermore, the structure of China's trade has changed little over the period, in contrast to most other actors.

Looking at the revealed comparative advantage in terms of the market level of exports, the EU's strength in up-market products is confirmed by the figures on the contribution to trade balance (CTB) of these different sectors presented in Table A4 in annex. Here we see the competitive advantage of the EU in the CTB of 37 in up-market goods, compared to 20 for the US and zero for Japan. Indeed, the latter exhibits a highly volatile competitiveness profile in this sector. Although China, as we have seen, is gaining market share in up-market products, its comparative advantage is still overwhelmingly in low market products with a CTB of 143.

2.6. EU strength in high tech products is eroding, but at a slower pace than many competitors

The EU's performance at different market levels provides an indication of the price level of EU goods. This reflects not only intrinsic value, but also marketing and branding effects. More expensive EU products are not necessarily more technologically advanced than others. They may command higher prices for other reasons, which are rather more intangible. It is therefore pertinent to also assess the EU's performance in terms of the technology level of exports, which differentiates exports not by price or quality level, but by the level of the technology embodied within them. The analysis undertaken for this work relies on a classification of the technology level of industries developed by Lall (2000). This differentiates between high, medium and low technology industries as well as resource-based industries and primary products. The details of the key sectors included in each product category are given in annex in Table A1.

Table 4 below shows the results of the analysis of the world market share of the EU and its key competitors classified according to technology level. It is notable that, in spite of oft-voiced concerns about the performance of its high tech industry, the EU actually has the largest market share in high tech products of the Triad countries (17.3%) and, as importantly, it is retaining this market. In contrast, the US and, especially, Japan, are both losing ground. The latter has halved its market share in high tech products in 10 years. Nevertheless the EU's performance is not as good as would be expected from a highly developed economy. Its share in high tech trade is lower than its share in world trade as a whole (which is 19.5%), in contrast to the US where the reverse is true – the US share of world trade is 13%, but of world high tech it is over 14%. Furthermore, in spite of its recent losses, Japan's shares of high tech and all trade are more or less identical. The EU, therefore, is continuing to underperform in high tech trade, although its market share has at least been relatively stable in recent years.

The most striking development in the table is the huge increase in China's market share in high and low tech products – respectively, a 14 and 12 percentage point increase over 10 years. Although China's market share has increased in all sectors, the most impressive performance is in the high tech sector: China now commands a higher share of high tech trade than of overall trade and has overtaken the EU as the first supplier of high tech goods to the world market. Clearly this development represents a competitive threat to all companies in the sector.

The table also enables us to look at EU performance at other technological levels. It is clear from the figures that the EU's key strength is in medium-tech goods, where it commands almost a quarter of the world market, making it by far the key global supplier of such products – which include cars, chemicals and industrial machinery. Again, the EU is managing to

maintain its market position to a greater extent than the US and Japan, but it has nevertheless lost more market share in medium tech than in high tech goods. The key 'winner' in this market was, once again, China.

Table 4: World market shares in 2005 and change in the period 1995-2005 detailed by technological level – Triad and BRICs

	All	HT	MT	LT	RB	PP
EU 25	**19.6**	17.3	24.0	15.8	22.3	9.6
	-1.39	*-0.57*	*-1.32*	*-3.29*	*-1.49*	*-0.84*
USA	**13.0**	14.3	14.7	8.1	11.3	16.2
	-4.35	*-7.63*	*-3.07*	*-2.29*	*-3.65*	*-5.87*
Japan	**9.5**	9.5	15.4	4.8	4.9	0.7
	-4.08	*-9.26*	*-5.16*	*-2.01*	*-0.58*	*0.13*
Brazil	**1.7**	0.6	1.6	1.1	2.7	7.1
	0.32	*0.36*	*0.42*	*-0.08*	*-0.05*	*3.69*
Russia	**1.4**	0.4	1.3	0.9	4.2	1.1
	0.36	*0.18*	*0.60*	*0.35*	*0.92*	*-0.35*
India	**1.5**	0.4	0.8	3.1	2.7	2.8
	0.43	*0.18*	*0.42*	*0.68*	*1.11*	*0.44*
China	**14.0**	17.8	8.8	28.2	6.7	5.2
	8.20	*13.94*	*5.53*	*11.55*	*3.40*	*1.03*

Source: BACI, authors' calculations. Italic figures give the percent point change in the 1995-2005. period. Technological classification of exports from Lall (2000) in primary products (PP) and 4 categories of manufactures: resource based (RB), low medium and high technology (LT, MT, HT).

Finally, it is also worth noting that the EU retains large market shares not only in medium tech but also in low tech products and resource-based industries, reflecting important exports in agro-food and beverages sectors, as well as metals. Clearly, in spite of its high costs, the EU retains a significant share of these more basic industries.

In addition to looking at world market share it is also interesting to look at the structure and development of the exports of each of the key actors. Table 5 below shows the importance of each category in total exports of the EU and its key competitors. Here we see that the EU is slowly orienting its exports more towards high and medium tech goods, while the US and, especially Japan, are reducing the share of high tech goods in their exports, moving instead towards medium tech products as well as raw materials based goods, in the case of Japan. However we note, once more, that the EU has a lower share of high tech goods in exports than either of the other Triad members, thus, although its evolution is positive, the EU has quite some ground to make up.

The evolution of China in this table is very striking, with a huge shift from concentration on low tech to high tech exports. The latter sector increased its share of Chinese exports by over 18 percentage points and it is now more important in Chinese exports than in those of any other major exporter. The other emerging BRIC countries also saw increases in this category,

particularly Brazil, but they still remain well behind China in terms of the structure of their export mix, with resource-based and/or primary goods exports being much more important.[10]

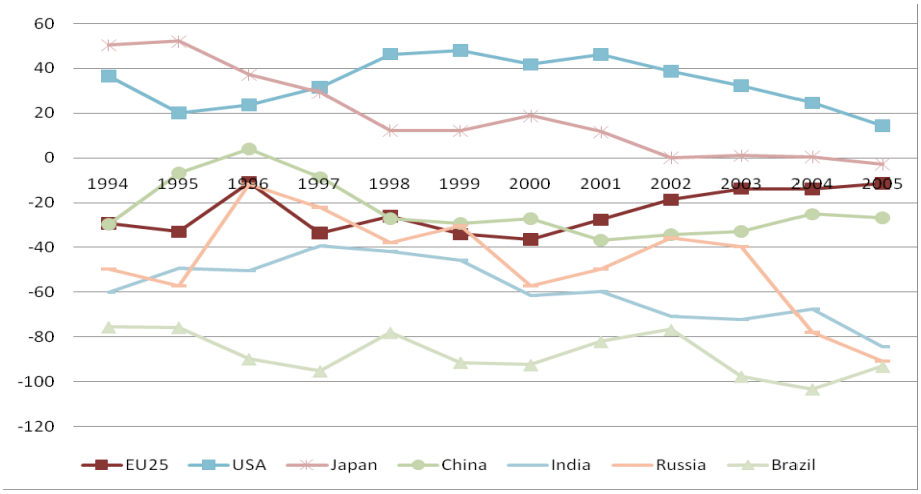
Table 5: Technological structure of exports – Triad and BRICs

	Categories weights in 2005 (%)					1995-2005 change (p.p.)				
	HT	**MT**	**LT**	**RB**	**PP**	**HT**	**MT**	**LT**	**RB**	**PP**
World	**26,9**	**34,5**	**17,2**	**14,8**	**5,4**	**3,1**	**0,7**	**-0,3**	**-1,4**	**-1,9**
EU 25	23.7	42.3	13.8	16.8	2.6	3.4	1.5	-2.1	-1.5	-1.0
USA	29.6	38.8	10.7	12.8	6.7	-0.5	4.4	0.2	-1.1	-2.6
Japan	27.0	56.1	8.6	7.7	0.4	-6.0	4.8	-0.1	1.1	0.1
Brazil	9.4	32.1	11.3	23.7	22.7	5.4	3.6	-4.0	-8.8	4.4
Russia	6.9	31.8	11.3	44.7	4.4	2.7	9.4	1.6	-6.9	-6.1
India	7.1	19.5	35.9	26.7	10.5	2.3	6.1	-4.6	2.6	-6.6
China	34.3	21.7	34.7	7.0	2.0	18.4	2.7	-15.9	-2.1	-3.2

Source: BACI, authors' calculations. The sum of market shares across product categories is 100 (minus the Other Transaction category not reported here).

If we consider performance in the different technological sectors in terms of the CTB indicator, the situation is relatively encouraging for the EU. Figure 5 shows that although the EU retains a comparative disadvantage in high tech goods, nevertheless it is improving its performance over time and in 2005 only had a slight disadvantage of 11 compared to 29 at the start of the period. In contrast, although their overall indexes are more positive, both Japan and the US are losing comparative advantage, particularly the former. The BRIC economies show no clear trend over the period: all reveal a comparative disadvantage in the high tech sector.

Figure 5: Comparative advantages evolution in High-tech goods – CTB indicator for Triad and BRICs

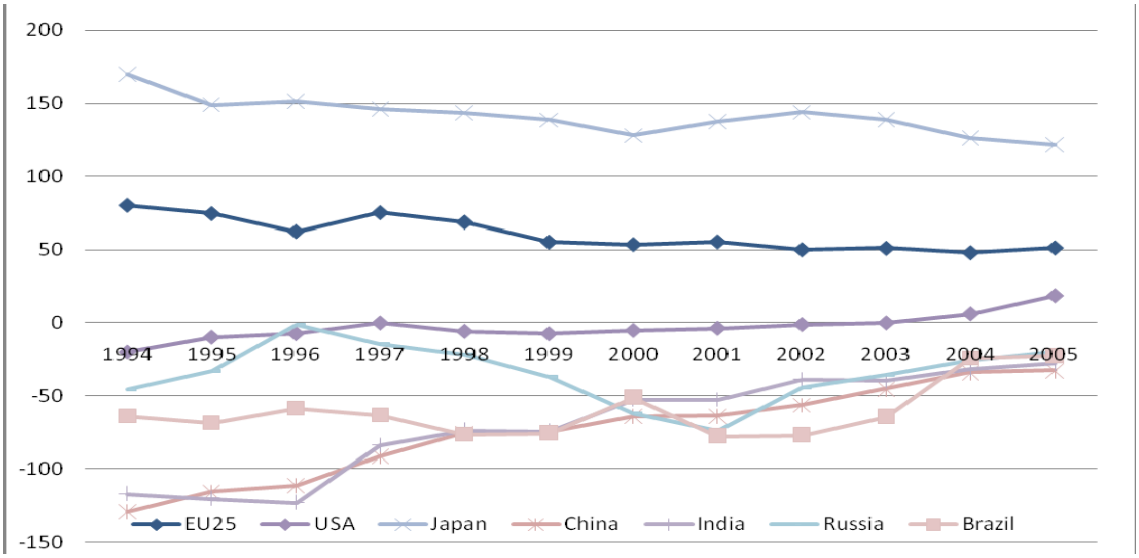


Source: BACI, authors' calculations. The contribution to trade balance (CTB) indicator is explained in the technical appendix.

[10] Note that these trade figures do not include energy, which accounts for the sometimes surprisingly low level of exports in primary products.

In medium tech products, presented in Figure 6, the EU shows consistent strength, although its advantage is eroding somewhat over time. The US and Japan have quite different trajectories, with the former improving competitiveness, although it remains less competitive than the EU, while Japan is losing competitiveness, although it is still more competitive than the EU. The comparative advantage of all of the BRICs is improving, although all retain a comparative disadvantage at this technology level.

Figure 6: Comparative advantages evolution in medium tech goods – CTB indicator for Triad and BRICs



Source: BACI, authors' calculations. The contribution to trade balance (CTB) indicator is explained in the technical appendix.

3. MEMBER STATE PERFORMANCE: MANY ROUTES TO COMPETIVENESS?

The previous section has given an overview of the situation at the level of the Union as a whole, which is clearly a function of the performance of all of the 25 member states (which were members in 2005). The objective of this section is to look at the evolution of trade at member state level in order to identify key strengths and weaknesses as well as key complementarities.

The EU member states share many commonalities. They are relatively high cost economies with access to highly developed technology, skilled workers and effective quality control mechanisms. However history, geography and chance have resulted in economic structures that differ substantially between countries. As this section will show, although certain member states have similar structures and trajectories, there is no clear common strategy by which their companies have succeeded in world markets. Rather companies within the Union have adopted a mix of approaches with varied levels of success. This chapter will try to highlight the most successful strategies as well as some of the specific challenges which certain member states face.

3.1. Trade specialisation of the Member States and its evolution

Overall the impression from the analysis of specialisation at the EU level in the previous section is that, far from a 'hollowing out' of EU manufacturing, the sector is actually surprisingly resilient. However the region is far from heterogeneous and the picture changes

significantly at Member State level. One key difference is in terms of variability, with most member states seeing major changes over the period, while the EU as a whole was more stable. In order to explore this issue, the analysis of specialisation was also undertaken at Member State level.[11] The results are presented in Figure 7 to Figure 10. Note that, as for the previous analysis, a positive (negative) value for the indicator shows that the country has a comparative advantage (disadvantage) for the sector in question.

The figures indicate that the EU's overall strength in manufacturing is by no means generalised, with only eight countries showing consistent comparative advantage (Belg-Lux, Finland, Germany, Ireland, Italy, the Netherlands, Slovakia and Sweden). For these countries the contribution of the manufacturing sector to their trade balance is stronger than either services (with the exception of Belgium in recent years) or the primary sector. Amongst them, Germany, Ireland and Italy have a stable pattern of specialisation in manufacturing. Several new member states, especially the Czech Republic, Hungary and Poland have seen significant improvement in their relative performance in manufacturing, with corresponding declines in services specialisation. Austria shows a similar pattern. Overall all, new member states are increasing their specialisation in manufacturing, with the exception of Slovenia which has shown fairly stable industrial specialisation.

Although the EU is often considered a services-based economy, less than half the sample - 10 countries - show consistent strength in services (Estonia, France, Greece, Latvia, Lithuania, Poland, Portugal, Slovenia, Spain and the UK) and the source of this strength varies significantly. Greece, Lithuania and Slovenia have specialised in transport service. Portugal and Spain owe much to the tourism sector but have also made progress in 'other services'. Lastly, the United Kingdom has strengthened their specialisation in 'other services' over the period, largely due to progress in financial services. Progress in this latter sector has also helped to boost services specialisation in Belgium-Luxembourg, Finland, the Netherlands and Sweden.

Germany is disadvantaged in travel services, while Italy is advantaged in this sector. Ireland suffers from a marked disadvantage in the category of "other services", due to the significant presence of foreign affiliates in the sector and the associated royalties paid abroad.[12] France has maintained a positive indicator in services, mostly due to the country's leading edge in travel services.

3.2. Up-market positioning – A German story?

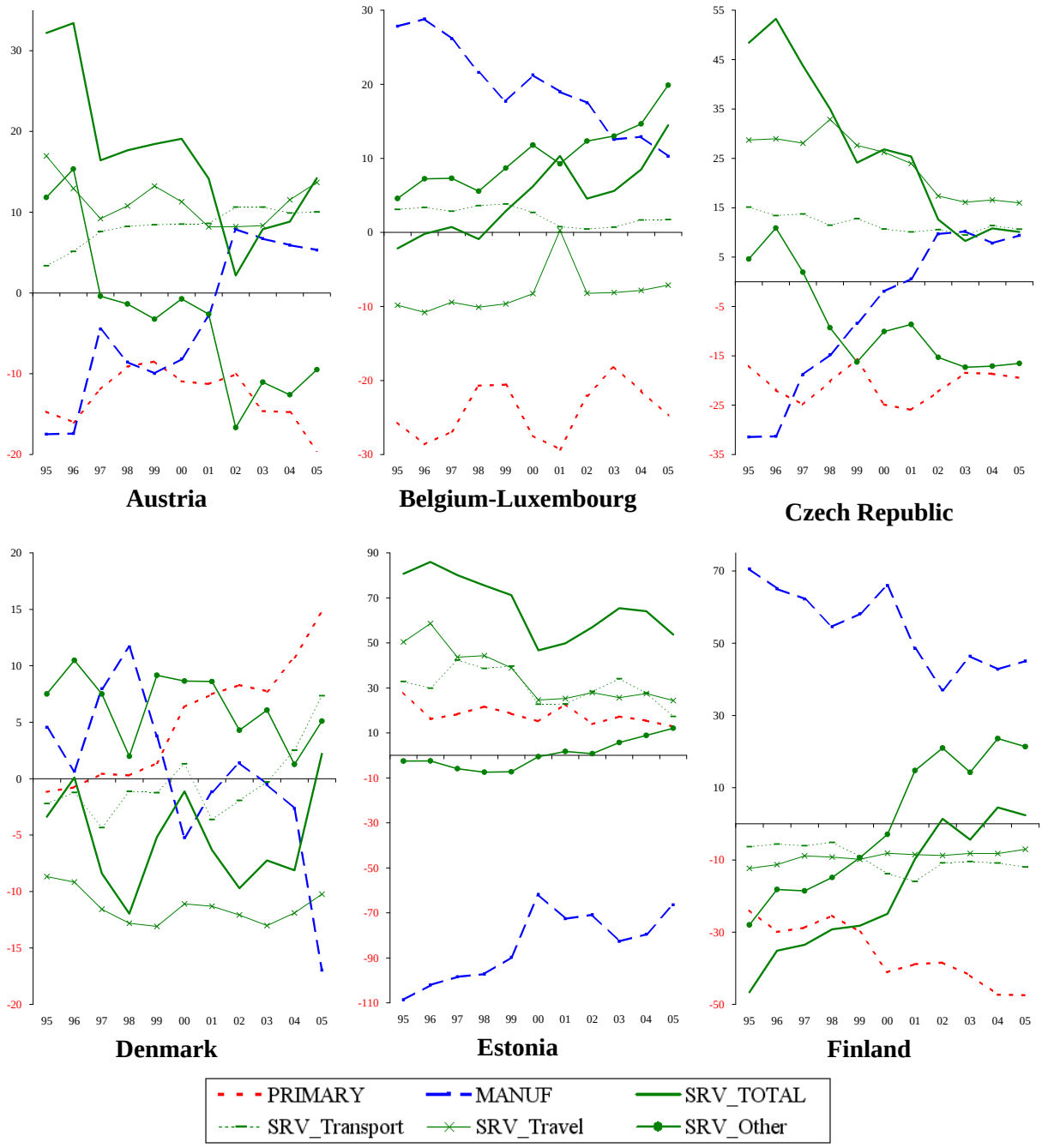
In the first section we highlighted that the EU as a whole is performing strongly in up-market levels of the market, although less well in high-tech products. In this section, we will look in more detail at Member State performance in these different market segments, starting with up-market products. In defining the different price levels of the market, we use the same approach as for the previous section to characterise the market positioning of the exports of the various Member States (see the technical appendix). The importance of the different member states in the different world markets are represented in Table A5 in annex. Market performance is fairly concentrated, with Germany accounting for one third of total EU exports in up-market products, just 1% less than the other three big economies – the UK, France and

[11] Unfortunately, data on the balance of payments is only available for 22 European countries in the CHELEM database used for this exercise, so not all Member States are included.

[12] The Irish position in other services is however positive, due to an excellent performance in computer services. The CTB in other services is negative because the surplus in manufactures is even larger.

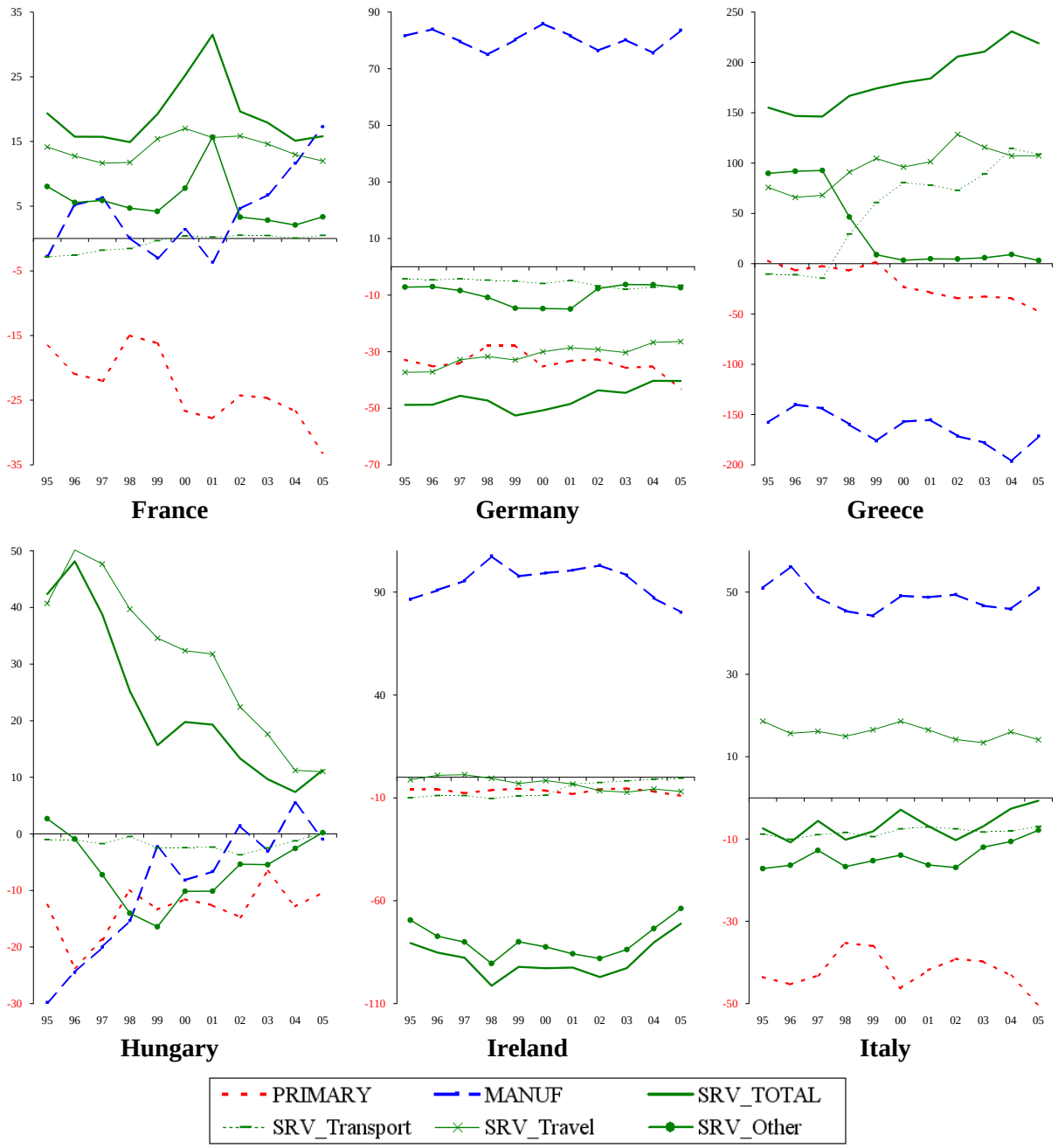
Italy - combined. However, the table does exhibit some convergence between Member States. Traditional exporters of up-market products (including Germany) are slightly losing or just maintaining their market share, however this is more than compensated by the gains of relatively newer actors in this segment and the EU as a whole increased their global market share in up-market products by 0.5%.

Figure 7: International specialisation of EU Member States (1/4) (CTB in goods & services balance, in thousands of total trade)



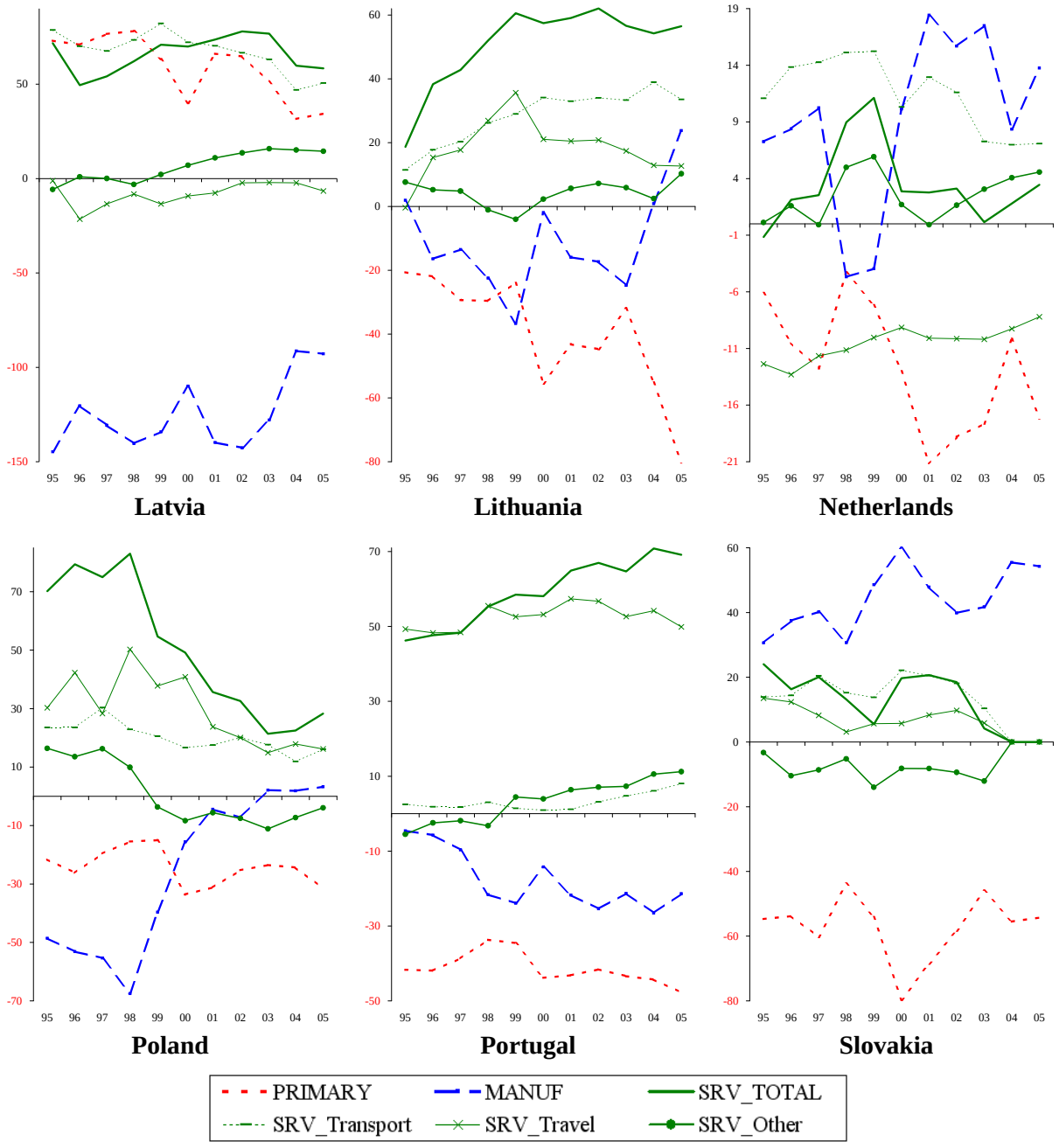
Source: CHELEM database, Bensidoun and Ünal-Kesenci (2008) calculations (see footnote 8 and the appendix on the CTB indicator).

Figure 8: International specialisation of EU Member States (2/4)
(contribution to the trade in goods & services balance, in thousands of total trade)



Source: CHELEM database, Bensidoun and Ünal-Kesenci (2008) calculations (see footnote 8 and the appendix on the CTB indicator).

Figure 9: International specialisation of EU Member States (3/4)
(contribution to the trade in goods & services balance, in thousands of total trade)



Source: CHELEM database, Bensidoun and Ünal-Kesenci (2008) calculations (see footnote 8 and the appendix on the CTB indicator).

Figure 10: International specialisation of EU Member States (4/4)
(contribution to the trade in goods & services balance, in thousands of total trade)

Source: CHELEM database, Bensidoun and Ünal-Kesenci (2008) calculations (see footnote 8 and the appendix on the CTB indicator).

Overall the figures indicate a rather positive picture with the majority of Member States maintaining or increased their global market share in the up-market segment, although often by very small amounts. The evolution of Ireland, however, is striking. Its gains in market shares in this segment have made it the top EU exporter after the big four and significantly contributed to the EU's favourable evolution. In parallel, Austria, Bulgaria, Czech Republic, Hungary, Italy, Poland, Romania, Slovakia and Spain gain more than 0.1 p.p. of the world market of up-market products.

Looking at the structure of member state's trade in terms of the relative importance of different market segments we see the changes in market positioning even more clearly. Table 6 shows the structure of trade in 2004 and changes over the ten previous years. Here the increasing importance of up-market trade for the EU is confirmed, but we see most particularly major up-grading by the new member states. There have been large falls in the importance of low level goods in their export mix and increases in medium and up-market products. This same tendency for up-grading in seen in several 'old' member states – Ireland, but also Italy, Greece and the UK, although the changes are generally less major than for the new members.

Table 6: Export structure of EU member states by market segment in 2004 and changes over the period

	2004			1995-2004 p.p. change		
	Low	**Mid**	**Up**	**Low**	**Mid**	**Up**
EU25	**20.6**	**33.3**	**46.1**	**-3.4**	**-1.0**	**4.4**
Austria	18.6	30.1	51.3	-0.3	-5.1	5.4
Belgium/ Luxembourg	23.7	30.8	45.5	-0.2	0.3	-0.1
Bulgaria	35.4	30.2	34.5	-23.3	8.1	15.2
Cyprus	38.0	21.5	40.4	-31.1	10.1	21.0
Czech Republic	33.9	32.8	33.3	-20.5	7.3	13.3
Denmark	17.8	42.8	39.4	-4.3	6.5	-2.2
Estonia	39.8	24.8	35.5	-19.6	3.7	15.9
Finland	24.3	27.6	48.1	-1.1	-6.2	7.2
France	21.2	37.3	41.5	-2.2	4.1	-1.9
Germany	16.3	33.3	50.4	0.4	-3.0	2.6
Greece	35.3	28.3	36.4	-8.1	0.0	8.1
Hungary	34.0	26.9	39.2	-19.3	4.2	15.1
Ireland	9.1	33.3	57.6	-12.9	3.8	9.2
Italy	24.9	34.4	40.7	-9.0	1.4	7.7
Latvia	42.5	19.4	38.2	-18.0	-6.6	24.6
Lithuania	49.3	26.0	24.6	-15.5	7.2	8.3
Malta	12.8	59.4	27.8	-11.0	41.8	-30.8
Netherlands	24.3	32.0	43.7	1.6	-7.1	5.5
Poland	42.3	34.0	23.7	-20.3	12.6	7.7
Portugal	21.9	31.3	46.8	-4.0	3.8	0.2
Romania	30.8	33.6	35.6	-26.3	8.4	17.9
Slovakia	26.6	17.0	56.5	-39.1	-2.5	41.5
Slovenia	38.3	30.8	31.0	-0.4	-6.0	6.4
Spain	29.8	33.9	36.3	-5.6	1.6	4.0
Sweden	20.3	25.9	53.8	1.5	-5.7	4.2
United Kingdom	17.6	33.1	49.3	-8.4	-2.0	10.4

Source: BACI, authors' calculations.

The figures on the revealed competitive advantage of the different member states in Table A4 in annex confirm this up-grading, with the majority having growing or sustained competitive advantage in up-market products. Striking figures are seen in Ireland (107), Portugal (67), Cyprus (62), the UK (59) and Slovakia (51), all well above the figure of 21 for Germany. In low market products, most member states appear to be uncompetitive, although several new

member states (Slovenia, Estonia, Poland) show comparative advantages and there are some surprisingly high figures for Austria (20) and Belgium-Luxembourg (17).

3.3. The technological level of trade – varied trajectories, consistent concentration

As discussed earlier, the market level at which products are sold is not the only important feature in trade structure. It is also important to consider the technological level of the goods traded. The structure of the Member States' trade was thus also analysed in terms of technology level. Table A6 in annex provides indications of the world market share of the different EU member states.

A few features are notable. Firstly a high level of concentration exists in the market shares. More than half of the EU's market share in high tech products comes from the contribution of three countries - Germany, the UK and France (together they make up almost 10% of world trade in high tech products). More than half of the share in medium tech products (almost 15% of the world market) also comes from the top three countries – Germany, Italy and France. Even in low tech products, where market shares are spread more widely within the EU25, the top three countries – Italy, Germany and France – again make up more than half of the market share of the EU25. Only in resource-based manufacturers do the top three exporters (in this case Germany, Belgium-Luxembourg and the UK) make up less than half the EU's market share.

Partly this concentration is a reflection of the overbearing effect of the German 'juggernaut', where Germany alone represents large percentages of the EU's total market share. This is particularly the case in medium tech industry where German exports represent 37% of the EU market share. However it also reflects the strength of certain smaller exporters in key sectors – Italy in low tech goods (mainly textiles, clothing and other fashion goods) and France and the UK in high tech goods. In addition, some smaller countries have developed significant capacities in certain technologies. The relatively small Irish economy commands more than 1% of the world market in high tech goods, as does the Netherlands, while Belgium and Luxembourg command a similar share in medium tech goods.

Looking at changes over time, it is clear that, in general the EU is losing world market share in all sectors. The most worrying losses are UK (-1.7 percent point), the Netherlands (-0.5 p.p.) and France (-0.3 p.p.) in high tech goods. Although Ireland (+0.5 p.p.), Germany (+0.4 p.p.), Finland (+0.3 p.p.) and Hungary (+0.3 p.p.) all made significant progress in this sub-sector, it was not adequate to compensate for the losses of other Member States and the EU as a whole lost 0.6 p.p. of the market.

More significant, but perhaps more predictable, loses were seen in the low tech sector where the EU lost 3.3% of the world market. Italy saw the largest losses (-1.1%), but others were also affected, including Germany (-0.7%), the UK (-0.7%) and France (-0.6%). No Member State made significant progress in this market segment.

In the medium tech sector, absolute losses were lower than for the low tech sectors, however the key EU exporters all lost market share – the UK (-0.5%), France (-0.4%), Germany (-0.4%) and Italy (-0.4%) - and no member states made significant progress. Similarly, in resource based manufactures, in spite of significant progress by Ireland (+1.2%), the EU as a whole lost market share due to losses by most other countries, especially France (-0.6%), Germany (-0.6%), the UK (-0.6%) and the Netherlands (-0.5%).

Given the very dynamic global environment in the past decade, it is not surprising that the EU is losing market share across sectors as other exporters enter new markets. Overall its companies have managed to maintain a significant market share of the global market in high tech goods which is eroding only relatively slowly. Most market share losses are in the medium and low tech or resource-based industries, where it would be expected that a high cost region would face greater competitive threats. Nevertheless, the situation of certain member states, particularly the UK in the high tech sector, does give cause for concern. Analysis of the evolution of the UK's market share indicates that most of its losses (-1.34%) occurred in the 1995-2000 period.

As many member states are relatively small producers, important changes at country level can be obscured if only global market share is considered. In order to look in more detail at developments on member state level it is therefore useful to look at their individual export structures, in terms of the importance of technological sectors, and the changes over time. These details are provided in Table 7. Here we see that, 10 EU member states have export structures where high tech goods make up a higher percentage of their trade than the global average of 27%. The most impressive progress was registered by Hungary with a 29 percentage point increase in the importance of high tech trade. The UK was the only one of this latter group to register a fall in the high tech sector's share of their trade (of 3 percentage points).

Germany has an export structure which is skewed towards medium technology goods, which make up more than half of its exports (55%). The EU as a whole reflects this structure, with medium tech goods making up 8 percentage points more of trade than the global average of 34.5%, and 12 member states having higher than average levels of medium tech goods in their export mix most strikingly Slovakia (58%) and Italy (45%).

Finally low tech goods remain important to certain member states. Although the EU as a whole has a lower percentage of low tech goods in their exports than the global average, several member states have a higher level including Austria, Czech Republic, the Baltic states, Greece, Italy, Portugal and Slovenia.

3.4. Comparative advantage in key sectors – what do the revealed comparative advantages of the Member States tell us?

The EU industry's performance in up-market and high technology goods is clearly a function of the performance of individual companies in a variety of industrial sectors. In this section we will look at member states' sectoral performance by looking at the contribution to trade balance of the different sectors in trade.[13] Table A3 shows that the EU member states are very heterogeneous in their industrial strengths. There is no single industrial sector where all EU member states have a comparative advantage or disadvantage, although clearly there are sectors where most exhibit similar tendencies. Throughout the EU and across the sectors we find pockets of competitiveness in sectors where the EU as a whole is uncompetitive and vice versa. Companies in most EU member states are uncompetitive in textiles, but this is not the case for Greece, Portugal, the Baltic states and Malta. EU companies are generally competitive in chemicals, but in nine countries, including six new member states, they are not.

[13] This section takes the same approach as the earlier discussion for the EU as a whole. Note that a positive figure indicates comparative advantage and a negative figure comparative disadvantage.

Table 7: Technological export structure of EU member states

	Share in total exports (%)					1995-2005 change (percentage points)				
	HT	**MT**	**LT**	**RB**	**PP**	**HT**	**MT**	**LT**	**RB**	**PP**
World	**26.9**	**34.5**	**17.2**	**14.8**	**5.4**	**3.07**	**0.72**	**-0.35**	**-1.36**	**-1.89**
EU 25	23.7	42.3	13.8	16.8	2.6	3.44	1.50	-2.10	-1.48	-0.98
Austria	17.8	42.4	20.6	16.9	1.8	4.00	0.83	-2.48	-2.86	0.54
Belg/lux.	15.2	33.5	10.0	38.8	2.2	4.29	0.14	-2.36	-0.85	-0.93
Cyprus	25.7	29.3	13.2	20.6	10.8	12.55	5.83	2.01	-27.24	6.75
Czech Rep	20.9	42.1	22.9	11.4	2.3	11.23	2.34	-8.78	-2.57	-2.37
Denmark	27.4	28.3	14.8	14.4	14.4	9.36	-3.33	0.44	-3.13	-3.27
Estonia	11.9	28.1	22.9	29.6	6.6	4.73	1.89	0.70	-3.20	-4.80
Finland	37.4	30.8	7.1	22.5	1.5	18.32	-5.02	-2.17	-9.41	-1.24
France	32.2	37.2	12.8	13.9	3.2	5.39	0.75	-2.09	-2.56	-1.14
Germany	20.5	55.2	10.5	12.0	1.2	4.44	0.53	-1.86	-2.41	-0.47
Greece	6.6	29.9	25.0	23.7	14.3	3.34	12.40	0.88	-9.04	-6.69
Hungary	43.2	28.9	10.9	11.6	5.2	29.47	1.35	-2.83	-16.98	-10.80
Ireland	41.1	12.9	7.6	36.5	1.8	2.71	0.10	-0.53	7.01	-8.99
Italy	12.5	44.5	28.4	12.5	1.6	1.98	2.13	-4.05	0.08	-0.22
Latvia	12.6	26.0	25.6	31.2	4.1	0.89	0.37	2.39	-1.73	-2.23
Lithuania	16.6	40.2	18.2	17.1	7.1	5.56	9.47	-0.61	-8.70	-6.38
Malta	72.4	12.7	4.7	5.3	2.4	15.85	-7.44	-5.36	-2.56	1.14
Netherlands	29.4	32.9	9.2	18.8	9.4	1.00	3.06	-0.55	-2.45	-0.99
Poland	8.3	42.6	21.9	21.0	5.6	0.33	12.17	-4.69	-5.91	-2.12
Portugal	26.9	24.3	22.3	24.0	2.1	18.14	2.17	-16.78	-1.46	-2.05
Slovakia	11.3	57.9	18.5	10.0	1.2	6.87	20.12	-14.44	-11.85	-1.41
Slovenia	19.1	35.7	24.2	18.8	1.3	1.07	8.12	-1.48	-6.26	-1.70
Spain	15.3	43.9	16.0	19.3	4.5	3.05	5.72	-4.13	-3.70	-0.33
Sweden	29.6	41.9	12.6	14.6	0.8	3.32	-2.19	0.03	-0.81	-0.12
UK	29.8	39.4	10.1	17.4	1.3	-3.08	6.10	-1.38	0.28	-0.74

Source: BACI, authors' calculations. Lall (2000) classification technological contents of goods (see the technical appendix).

Looking at the balance of strengths in different sectors, exporters in Germany – the EU's key exporter – are uncompetitive in fourteen of the twenty five sectors analysed, although often only very slightly. Their major strengths are clearly in motor vehicles, machinery and chemicals. France also shows strength in these key sectors, while Italy is strong particularly in machinery, with some strength in chemicals, as well as in the metals, minerals and food industries in which Germany is disadvantaged. Ireland, the EU's 'tiger' economy, seems to have built its status almost exclusively on the strength of its chemicals companies (with a CTB of 182).

New member states represent important sources of comparative advantage in several sectors, most notably Slovakia (with a CTB of 149) and the Czech Republic (63) in motor vehicles and Malta in televisions (266). Other sectors where the new members exhibit strengths include the food and wood sectors (especially Estonia and Poland), chemicals (Slovenia, Hungary), minerals (Cyprus, Slovakia) and machinery (Slovenia, Czech Republic, Poland).

4. ENLARGEMENT AND TRADE – TOWARDS A NEW INDUSTRIAL STRUCTURE?

The recent enlargement of the EU is a major change for the economic landscape of the Union. Although small traders in absolute terms, the new member states have important capacities and complementarities which help to strengthen the EU as a global trader. This section will look in detail at the differences in performance between the 'old' member states and the ten member states which joined in 2005.[14] Five years after the EU-10 enlargement, it is opportune to look at the impacts of this enlargement on the EU and its trade.

This work finds that, although there remain important differences and indeed complementarities, between the two EU sub-regions, in general the trend is towards convergence in key elements of trade performance. In addition, this evolution of the EU10 is helping EU industry as a whole to retain its leadership in key sectors – especially up-market products. The section will look in some detail at the evolution of industrial integration by looking in particular at trade in intermediate products. Here we see clear impacts of enlargement with several EU15 countries expanding their intermediate sourcing in the EU10 while the latter are expanding sourcing both at EU and global level. These trends indicate that enlargement is fostering a new industrial division of labour both within the new EU economic space and with the wider world. Figure 11 shows the changes in world market shares between 2000 and 2005 in the EU. This clearly illustrates this geographical concentration of strong performance in Eastern Europe including Germany.

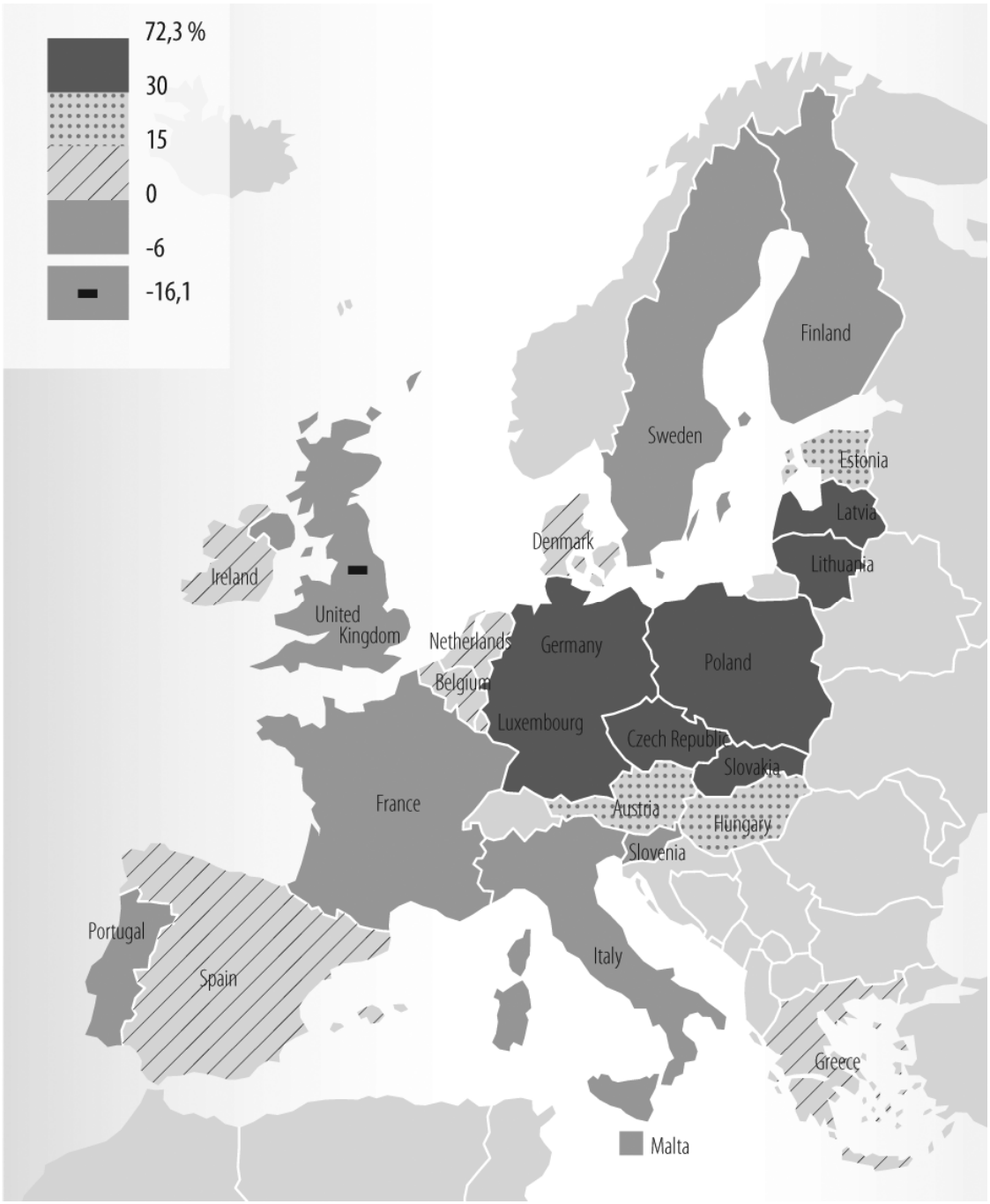
4.1. Intra-zone trade

Although, as reported above, intra-EU trade is a falling share of global trade, it remains a very important element of EU trade. Figure A2 shows that intra-EU trade is particularly important in agro-food sectors. This is likely to reflect both the particularity of the sector (high level of perishability favouring local sourcing, differing global tastes in food, high non-tariff barriers) and public policy, in particular the CAP. However, even in manufactured goods trade, intra-EU trade is a very high 65% of the EU's total trade.

The graphs show the level of intra trade for both EU15 and, in this case, the new EU27. We see that enlargement seems to have stabilised the share of trade from EU sources in both food and manufacturing sectors (in both the EU27 figures are stable, compared to small, but steady falls in EU15 sourcing). This indicates that expanding the EU has enabled EU companies and retailers to extend their sourcing within the Union in such a way as to increase the variety of sources, while maintaining the importance of EU sourcing at a stable level.

[14] Where feasible figures on Romania and Bulgaria are included in this analysis, but in most cases, this was unfortunately not possible.

Figure 11: Changes in world market shares between 2000 and 2005 – EU countries



Source: Crozet and Zignago (2009), based on our calculations using BACI.

4.2. Trade at different market levels

We saw in Section 1 that the EU has particular strengths in up-market products. However we can see in Table 8 that the performance at different levels of the market varies quite considerably between the EU15 and the EU10. Specifically, the importance of low market products is much higher in the EU10 than in the EU15 (36% of exports compared to 20% respectively), while the importance of up-market products is lower (33% compared to 46%).

Table 8: Exports by market segment – EU25/15/10, 1995-2004

		2004			1995-2004 change (% for total exports and p.p otherwise)		
		Low	**Mid**	**Up**	**Low**	**Mid**	**Up**
EU25	total exports (million USD)	224,410	362,082	502,447	45,0	64,4	87,1
	share in total exports (%)	20.6	33.3	46.1	-3.4	-1	4.4
	world market share (%)	14.3	18.4	31.2	-3.9	-1.5	0.5
EU15	total exports	204,677	345,629	484,238	42.1	60.3	82.9
	share in total exports (%)	19.8	33.4	46.8	-3.3	-1.1	4.4
	world market share (%)	13	17.5	30.1	-3.9	-2	-0.2
EU10	total exports	197,331	16,453	18,210	84.3	263.3	378.2
	share in total exports (%)	36.3	30.2	33.5	-19.9	6.5	13.5
	world market share (%)	1.3	0.8	1.1	0	0.4	0.7

Source: BACI, authors' calculations. EU10 are the new member states.

However this structure is changing rapidly in the EU10, which has witnessed a major re-orientation from low to medium and, especially, high level products. This evolution has resulted in a significant increase of 0.7% percentage points in global market share in up-market goods, more than doubling their share. Although this may seem a rather small advance, looking at the figures it is clear that it is this EU10 advance that has enabled the EU25 as a whole to increase their share of the global market for up-market products. Thus the progress of the new member states in moving up-market is both significant in itself and vital to the maintenance of the EU's market share in this important sector.

4.3. Trade in technology

Looking at performance in world trade by technology level in Table 9, we see that here too the EU10's globally positive performance has contributed to a relatively more robust performance by the EU25. Overall, the EU10 has strongly re-oriented its exports away from low tech goods and towards medium and, especially, high tech goods in the last ten years. These changes mean that the export profile of the EU10 is no longer very different to that of the EU15. Although low tech goods remain more important in exports and medium tech goods less important, in high tech goods the difference is only 1.5 percentage points.

In summary, the EU10s export structure is rapidly evolving from one more based on primary products and labour intensive goods towards one more based on technology and capital based goods. This evolution is exactly what would be expected from a rapidly developing region. Furthermore, EU10 companies have increased their global market share in all market segments. This positive performance has helped to mitigate the loss of global market share by EU 15 industry, resulting in a more positive performance for the EU overall. In contrast to the up-market segment, however, the gains of the EU10 in high tech goods were not sufficient to ensure a positive performance for the EU as a whole.

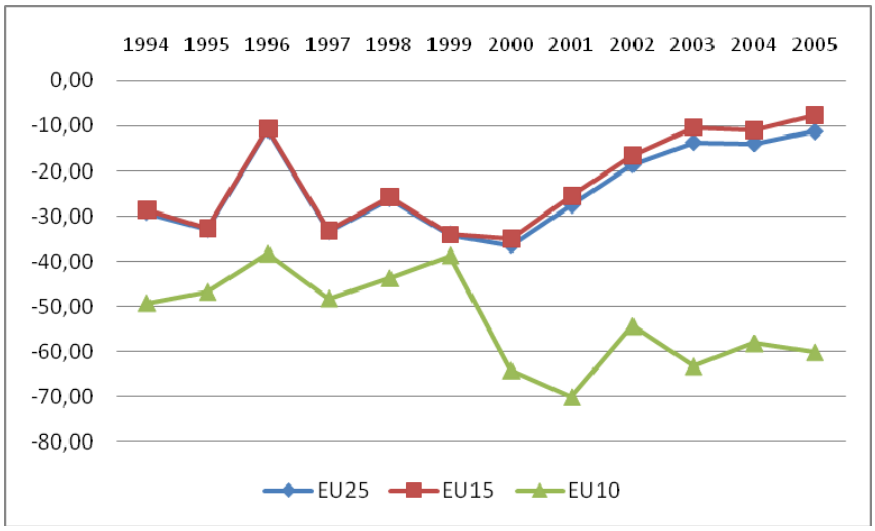
Table 9: Structure of exports and global market share at different technology levels – 2005 and change 1995-2005

		2005 (%)					1995-2005 change (p.p.)				
		HT	**MT**	**LT**	**RB**	**PP**	**HT**	**MT**	**LT**	**RB**	**PP**
EU 25	share in total exports (%)	23.7	42.3	13.8	16.8	2.6	3.4	1.5	-2.1	-1.5	-1
	world market share (%)	17.3	24	15.8	22.3	9.6	-0.6	-1.3	-3.3	-1.5	-0.8
EU15	share in total exports (%)	23.8	42.5	13.5	16.9	2.5	3.3	1.4	-2.2	-1.2	-0.9
	world market share (%)	16.4	22.8	14.5	21.2	8.7	-1.2	-1.9	-3.6	-1.7	-1
EU10	share in total exports (%)	22.2	38.3	19	15.8	4.1	10.1	7.3	-4.8	-9.1	-3.7
	world market share (%)	0.9	1.2	1.2	1.2	0.8	0.6	0.6	0.3	0.2	0.2

Source: BACI, authors' calculations. EU10 are the new member states.

In terms of revealed comparative advantage as seen through the CTB indicator, the performance of the EU 15 and the EU 10 in high tech trade has varied considerably over the time period considered. In the first half of the period there was a trend towards convergence between the EU15 and the EU10. This trend changed significantly in the second part of the period, with the EU15's CTB in high tech trade improving and that of the EU10 falling.

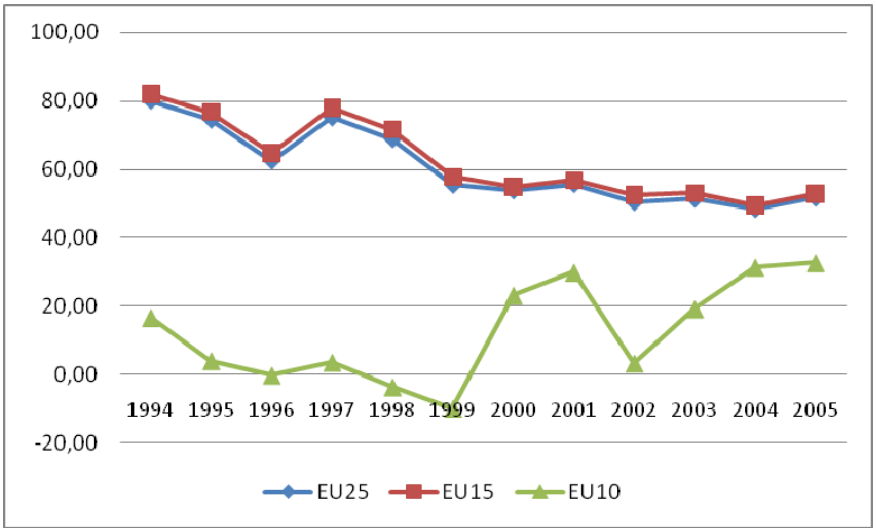
Figure 12: Comparative advantages in high tech goods, 1995-2005



Source: BACI, authors' calculations of the CTB indicator (see the technical appendix). EU10 are the new member states.

In medium tech industry, the story is more positive for the EU10. Here, not only do both groups – EU15 and EU10 - show strong comparative advantage, but there are also clear signs of convergence. It is likely that the gap between the two groups will soon disappear. In addition it can be hoped that the EU10's strengths in this sector will help rhe EU25 to retain its comparative advantage in medium tech goods in the future.

Figure 13: Comparative advantages in medium tech goods, 1994-2005



Source: BACI, authors' calculations of the CTB indicator (see the technical appendix). EU10 are the new member states.

4.4. Deconstructing trade – Inter and extra EU intermediate and capital trade flows and their implications

The final issue which this work will seek to elucidate is the importance of EU trade in intermediate products and capital goods for the EU's competitiveness. There is now quite a body of work linking international sourcing strategies with competitiveness. Germany has been a particularly active user of offshoring strategies and several researchers have examined the levels of integration and their effects on that economy. They have highlighted the high and increasing level of integration between the German economy and those of the new member states, with impacts for wage costs (Geishecker, 2006) and competitiveness (Marin, 2008). Of course the internationalisation of the German economy is not new. Frobel and his colleagues highlighted in 1980 the complex and growing level of integration of the German manufacturing system with the rest of the world (Froebel et al, 1980). What is new however is the role of other EU countries, which were rather unimportant in the early years of international integration. We will see in the analysis outlined below that EU countries have become more important sources for the German industry. This is clearly linked to EU enlargement and the complementary capacities which the new member states bring to the Union.

Much of the work on out-sourcing and off-shoring has been undertaken outside Europe. This research has tended to shown that firms with an outward orientation in terms of inputs are also the most productive and drive the productivity of their sector. For example, analysing Colombian firms, Fernandes (2003) finds that import penetration of intermediate goods has a large, positive and significant impact on plant level productivity. Kasahara & Rodriguez (2004) also found significant impacts in Chilean enterprises.

Impacts can also be witnessed further down the supply chain in suppliers not directly involved in importing. For example, Blalock and Veloso (2007) found that firms supplying import intensive sectors in Indonesia had higher productivity growth than others. Muendler (2004) found similar impacts in Brazilian firms exposed to import competition. Clearly imports

matter at the firm level, both directly, through productivity effects and indirectly through increased competition.

Although most of the research on this issue has been undertaken elsewhere, positive impacts of out-sourcing have been identified in Europe. Halpern et al. (2005) found imports to contribute significantly to productivity in Hungary. In their study of Belgian firms, Coucke and Sleuwaegen (2008) found that international sourcing activities increased the probability of survival. Understanding the extent and nature of EU intermediate trade is therefore important to understanding how EU companies construct their competitive advantage. Apart from the few studies of the German situation referred to above, little work has been done on this important issue.

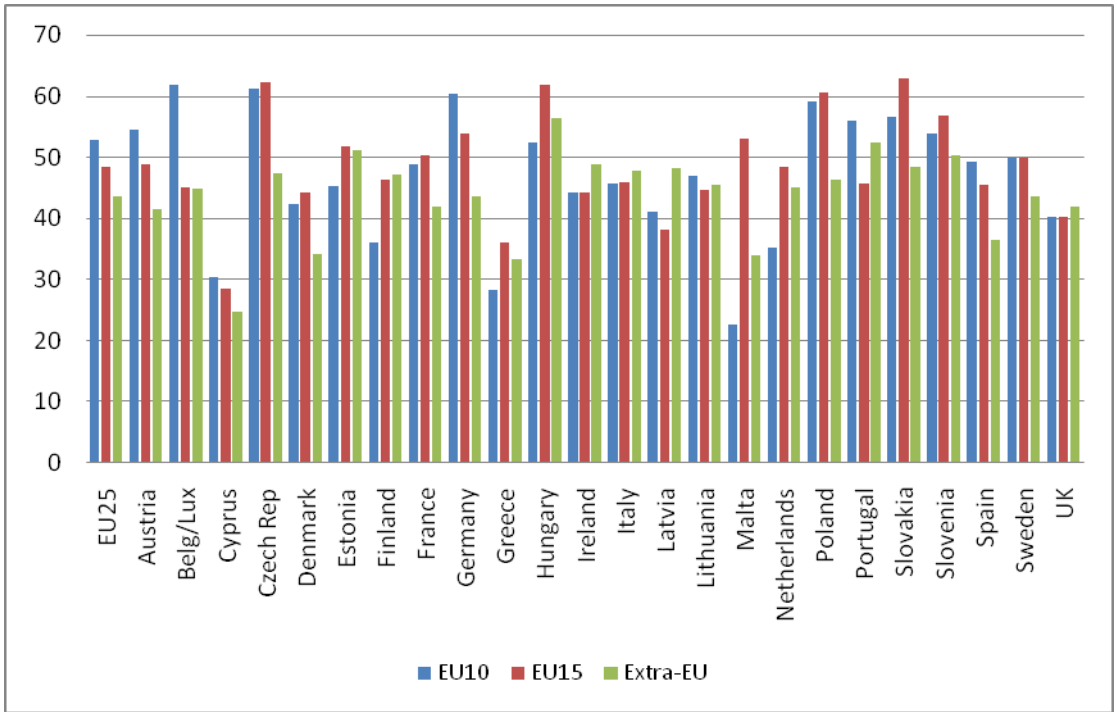
4.4.1. Analysing the structure of the EU's trade

To understand the structure of EU trade and the interactions between companies in the EU10 and EU15, the complex inter-linkages between different actors in the EU value chain need to be illuminated. In today's interconnected global production structure, an increasing amount of trade is in intermediate products rather than finished goods. Dividing up the production chain in order to exploit to a maximum the relative advantages of diverse sources enables companies to maximise their competitiveness while maintaining added value in high cost locations. Looking at the import structure of EU countries in this light helps us to better highlight the key differences between countries and their production structures. In contrast to the figures in the rest of the work, where the EU is counted as a single trader, intra-EU trade clearly had to be included in this analysis.

Table A7 and Table A8 in the annex provide details of the import structure of the EU and its member states in 1995 and 2005 differentiated by intermediate, capital and consumer goods, while Table A11 provides details of changes in this trade over time[15]. One of the key indicators in these tables is the importance of intermediate products in imports. This gives an indication of the extent to which companies in the EU and its member states have integrated their production structure both within the Union and with the world economy. Figure 14 shows the situation in 2005. Overall, the EU25's imports from EU10 countries consist of a relatively high share of intermediate goods compared to EU15 and, especially compared to imports from non-EU sources. Thus, within the EU, the EU10 plays a relatively important role as a source of sub-assemblies and other intermediates. Their level of importance is particularly high in Germany, Belgium/Luxembourg, Austria, Portugal and within many EU10 countries themselves. Indeed, looking at the tables several new member states (Czech Republic, Hungary, Poland, Slovakia and Slovenia), have high levels of intermediates in total imports from all sources. These countries seem to have become particularly integrated in the broader production structures of both the EU and the broader world economy.

[15] We use the stages of production as defined by Fontagné, Freudenberg and Ünal-Kesenci (1995,1996, based on the UN Broad Economic Categories, BEC).

Figure 14: % of imports made up of intermediate goods from EU15, EU10 and extra-EU (2005)



Source: BACI, authors' calculations. EU10 are the new member states.

Looking at the percentage of intermediates in total imports in a given year gives only a snapshot of the situation. In addition, the share of intermediates in trade depends, not only on the level of integration of the productive economy, but also on what is happening in other areas of trade – particularly consumer goods trade. To get a good view of the evolution of industrial integration, we need to look at trends in the value of trade in intermediate products, as well as capital goods, which although lower in absolute value, are also vital to production. Table 10 below reports the changes, in terms of percentage increases, in imports of intermediate and capital goods over the time period. Note that EU imports of all goods increased by 80% over the period, thus intermediate goods trade increased by slightly less than total trade, whereas the opposite is true of trade in capital goods.

Looking at the figures for intermediate goods, we see a clear effect of enlargement. With the exception of Malta and Cyprus, all new member states show significant increases in their imports of such goods from all sources which are well above the EU average of 70%. However, the key sources of such inputs differ. Certain countries (the Baltic States) have increased imports most especially from other EU10 countries. Others have increased from these sources, but also from the rest of the world (Hungary, Poland), while still others are integrating more with the 'old' member states and the rest of the world (Czech Republic and Slovakia) and less so with EU10.

Table 10: Cumulated nominal rates of imports in intermediate and capital goods 1995-2005 (%)

	Intermediate goods				Capital goods			
	EU10	**EU15**	**extra-EU**	**All**	**EU10**	**EU15**	**extra-EU**	**All**
EU25	**220**	**59.9**	**73.7**	**70.2**	**504.7**	**75.5**	**113**	**97**
Austria	169.2	60.4	61.9	68.3	301.7	67.2	115.3	85
Belg/Lux	382.8	64.4	102.3	77.9	610.8	81	232.2	122.7
Denmark	261.5	43	55.1	50.7	835.4	100.6	88	103.7
Finland	289.8	48.4	71.7	63.7	1,193.0	63.9	90.7	100.4
France	350.7	50.6	55.4	56.1	1,269.6	43.3	80.4	61.7
Germany	221.5	50	54.4	64.1	324.9	31.6	105.6	75.3
Greece	115.3	41.7	90.2	55.3	173.8	84.7	208.4	128.5
Ireland	307.7	87.9	93.7	91.8	1,008.5	181.6	94.7	134.9
Italy	119.7	44.2	78.4	57.2	634.3	80.9	112.2	96.6
Netherlands	127.8	27.3	101.4	53.2	1,636.9	30.1	175.3	99.7
Poland	298.5	205.7	328.1	234.5	652.7	167.1	400	236.3
Portugal	604.6	53.6	75.2	60.9	218.7	58	126.3	70.3
Spain	375.4	93.6	121.7	104	2,065.4	183.2	227.3	204.2
Sweden	389	40.3	54.8	51.4	799.7	49.7	79.2	65.2
UK	190.4	39.5	33.8	39.5	910.2	106.9	28.1	72.8
Cyprus	65.2	30.2	66.5	44.3	-57	65.9	161.9	106.5
Czech Rep	124.6	229.9	405	230.3	83.4	107.7	287.4	143.4
Estonia	760.3	205.2	466.4	290.2	1,507.9	275.3	468.4	354.7
Hungary	362.2	273.5	411.7	310.9	647.9	197.9	693.8	318.3
Latvia	559.3	271.9	209.3	300.4	1,020.5	362.6	377.7	418.3
Lithuania	536.4	348.5	132.6	282.1	535.2	470.6	409.7	462.3
Malta	8.5	0.3	63.5	15.7	-5.4	-0.9	219	109.2
Slovakia	147.8	349.6	614.1	299.3	132.3	186	595.8	256.6
Slovenia	142.6	112.6	121.3	116.5	321.8	85.8	53.8	84

Source: BACI, authors' calculations. EU10 are the new member states. Exporting zones in columns.

Given the high growth rates in intermediate goods of the new member states, it is unsurprising that many 'old' member states have seen growth rates which are below the EU average. The exceptions are Belgium/Luxembourg, Ireland and Spain. All have also seen particularly high growth rates in intermediates from the EU10. Of the remaining 'old' member states Austria, Finland and Germany all have relatively high growth rates, again with especially high rates for imports from the EU10. Although these high growth rates often reflect a relatively low level of imports at the beginning of the period, EU10 intermediates are becoming important in several markets. They represented 14% of intermediate imports to Germany in 2005 and 11% in Austria.

Enlargement is also impacting on capital goods trade, with above average increases in imports in all of the EU10 countries with the exception of Slovenia. The table is somewhat distorted by the very high figures for increases from EU10 countries for several member states which are mostly a reflection of the very low level of trade in the beginning of the period. Even after impressive growth of well over 1000%, EU10 capital goods imports still only account for 4% of French capital goods imports and 5% of those in the Netherlands. Extra-EU sources have generally been more important than EU15 sources of capital goods, but in certain countries (Ireland, the UK, Denmark) the reverse is true.

4.4.2. Intermediate trade within the EU in different technological and market categories

In order to see the extent to which intermediate goods trade is concentrated in certain sub-sectors, trade in intermediate products was also analysed by technological category and by market level. Table 11 below shows trade in intermediate goods in high, medium and low tech products and changes in that trade between 1995-2005. It is notable that there is a high level of concentration in intermediate goods imports from the EU10 in the medium tech sector, which represents almost half of their intermediate goods trade. This share has seen a 13 percentage point increase since 1995, indicating a major re-orientation of intermediate goods exports towards this sector at the expense of low tech, but especially resource-based intermediates which are not reported here for simplicity.

Table 11: Intermediate goods imports to the EU25 by technological level 20

	HT			LT			MT		
	EU10	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**
Imports ($m)	10794	121277	121365	24292	170001	57248	53043	416121	151290
95-05 growth (%)	*252,6*	*77,7*	*70,0*	*170,3*	*46,4*	*83,2*	*340,4*	*69,9*	*84,1*
Tech category contribution to the region market share	9,61	12,59	25,7	21,62	17,65	12,12	47,21	43,21	32,04
p.p. change (95-05)	*0,89*	*1,26*	*-0,57*	*-3,97*	*-1,63*	*0,63*	*12,91*	*2,55*	*1,82*
Share of region in tech category trade	4,26	47,85	47,89	9,66	67,58	22,76	8,55	67,07	24,38
p.p. change (95-05)	*2,11*	*0,03*	*-2,14*	*3,91*	*-6,69*	*2,78*	*5*	*-5,15*	*0,15*

Source: BACI, authors' calculations. EU10 are the new member states.

Notable too is the importance of high tech goods in extra-EU intermediate trade. This category represents 25% of the intermediates trade from the rest of the world and this figure is stable over the time-period.

Looking at the source of high tech intermediate goods, the EU15 and the rest of the world represent almost exactly the same share of the EU's imports, with the EU10 at a rather low 4%. It is interesting that the level of EU15 sourcing of intermediate goods is much higher in both low and medium tech than in high tech, although in both it is falling. This latter trend is mainly benefiting EU10 in medium tech and both EU10 and the rest of the world in low tech.

The details of trade in intermediate products in high-tech sectors at member state level are included in the annex (Table A10 and Table A11. Here we note a high level of heterogeneity. Although the EU15 and rest of the world supply the same percentage of high tech intermediates to the EU25 as a whole, there are large differences in member state profiles. Finland and the Netherlands high tech sectors have very low levels of sourcing in EU15, although Finland sources higher than average levels in the EU10. Portugal and Slovenia, on the other hand, have high levels of high tech intermediate sourcing from the EU15.

In medium tech intermediates, there is less variation across member states, with most member states sourcing high levels from the EU15. Only one country – Latvia – sourced less than half their imported medium tech intermediates from EU15, while the figure goes up to 84% in Portugal. Wider relative variations are seen in sourcing of this sector from EU10, where figures vary from a low of 2% for Ireland to a high of 28% for Latvia. Germany, Lithuania and Slovakia also had relatively high rates.

In terms of evolution over time, there were large falls in the share of high tech intermediates sourced from the EU15 in Czech Republic, Estonia, Hungary, the Netherlands, Poland and Slovakia. In all cases the main gains were made by extra-EU exporters. In spite of these losses, however, overall the EU25 sourced more intermediates from EU15 in 2005 than in 1995. This is due to increases in large importers like Germany, the UK and France. In low and medium tech goods, the picture is slightly more uniform with most member states seeing falls in intermediate imports from EU15 and increases in EU10, as reflected in the situation for the EU as a whole.

In summary, the trends in intermediate trade at different technological levels indicate that the EU10 have experienced significant increases in intermediate trade with the EU as a whole, especially in the medium and low tech sectors.

Table 12 shows the structure and evolution of intermediate goods imports to the EU25 by different market segment (using the approach explained above to define the market segment of goods, see the technical appendix). The most notable feature of the table is the major re-orientation of EU10 companies from exporting mainly intermediates for the EU's low market goods, to intermediates for medium and up-market goods (both increasing their importance to EU10 intermediate trade by over 11% as a result of growth rates of over 300%). As the EU10 (and, even more so, the EU15) have reduced their role in low market intermediate sourcing, extra-EU sources have strengthened their presence, with an increase of over 5% in their market share. In both medium level and up-market products we see a clear trend towards a re-orientation of intermediates sourcing from both the EU15 and the rest of the world, towards sourcing in EU10. This trend again confirms the importance of the new member states to the positive performance of the EU overall in the more expensive market segments.

Table A12 in annex provides details of the structure of intermediate imports in the individual member states by market segment. Here we see that in the EU's most successful up-market exporter, Germany, a higher than average level of intermediate imports in the sector comes from the EU10, whereas for the other key up-market traders in the EU –France, Italy and the UK and indeed, the new emerging sources- Ireland - the opposite is true. Overall we see from the table that the EU15 is the key supplier to all member states in the up-market segment, although EU10 is particularly important for Latvia, Lithuania and Slovakia.

In summary, this work has highlighted how companies in many EU member states have made major changes in their sourcing strategies in recent years, which have been reflected in important re-orientations of trade. The most striking is the re-integration of the new member states into the global economy, expanding their sourcing of intermediates to the global level

and maximising the effects of openness. At the same time, highly successful exporters, principally Germany, are increasingly looking inside the EU for their inputs, leveraging the benefits of improved division of labour within the Union.

Table 12: Intermediate goods imports to the EU25 by market segment, 2004

	Low			Mid			Up		
	EU10	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**
Imports ($m)	35 023	215 238	140 629	38 356	361 834	130 635	26 760	336 140	158 791
95-05 growth (%)	*76*	*39*	*84*	*303*	*51*	*50*	*394*	*65*	*72*
market segment contribution to the region market share	34,94	23,53	32,07	38,27	39,56	29,79	26,7	36,75	36,21
p.p. change (95-05)	*-21,71*	*-2,15*	*3,94*	*11,16*	*-0,24*	*-2,35*	*11,28*	*2,99*	*2,18*
Share of region in market segment trade	9,0	55,1	36,0	7,2	68,2	24,6	5,1	64,4	30,4
p.p. change (95-05)	*1*	*-6,6*	*5,5*	*4,4*	*-3,1*	*-1,4*	*3,3*	*-3,1*	*-0,3*

Source: BACI, authors' calculations. EU10 are the new member states.

4.5. Building competitiveness in the new Europe – Different routes to the same goal

Has increased integration within the EU and the rest of the world helped the EU as a whole to become a more competitive global exporter? Certainly, but different member states, or groups of member states have taken different approaches to this integration process. This section will look at the success of various EU members in the light of their level of industrial integration with the EU and the global economy as evidenced by the development of trade in intermediate products.

Looking at those EU countries which show comparative advantage in manufactures, this advantage has been maintained through quite different strategies in terms of industrial integration. Clearly the EU's most successful exporter – Germany – has been increasingly integrating its industrial structure with EU10 sources. Germany's success in up-market product exports and especially in medium tech products is therefore underscored by the extensive and growing inputs from their EU partners, especially in new member states. The success of German companies in the global market cannot therefore be seen in isolation from the important contributions made by their suppliers within the EU15 and EU10 whose global presence may be more muted.

The country which has seen the most impressive progress in recent years – Ireland – has also seen increased integration with the EU10, although the latter remain rather unimportant sources (together making up less than 2% of Irish intermediate goods imports). Most notably, Ireland has seen high growth rates in its imports of intermediate goods from all sources, reflecting an increasing integration with the global economy.

Certain member states are retaining competitiveness in manufactures through increased integration, often both within the EU and globally. Belgium and Luxembourg have maintained a comparative advantage in manufactures while increasing intermediate imports, especially from EU10 and the rest of the world. Finland has also increased imports in intermediates at relatively high levels, in particular from EU10 countries. Slovakia has maintained a persistent comparative advantage in manufactures while rapidly increasing their intermediate imports from all sources, especially the rest of the world.

Other member states have seen less rapid changes in their level of industrial integration. France is retaining and even increasing its comparative advantage in manufacturing while intermediate imports have grown at relatively low rates, except from the EU10, where they had a low base. Italy has a similar profile, although growth rates for EU10 imports are significantly lower. Sweden remains competitive in manufactures, but has seen major falls in recent years. Their imports of intermediate goods are increasing relatively slowly, except from the EU10. The Netherlands has also seen relatively low levels of growth in intermediate imports, particularly for EU15, while their comparative advantage in manufactures has been volatile, but globally positive.

There are also several new member states with growing comparative advantage in manufacturing which have seen a restructuring of intermediate goods sources towards greater reliance on the global market (Czech Republic, Hungary, Poland). Indeed in all new member states except the Baltic States and Slovenia, imports of intermediate goods from extra-EU sources are growing the fastest of all sources. This is likely to reflect both a re-orientation of production structures away from the old patterns of Comecon and the impact of greater openness to the global economy bringing increased choice. Clearly many companies in new member states are changing their sourcing structures significantly as they re-integrate into the world economy. Thus as they rapidly increase their importance as sources of intermediate and intermediate products for their EU partners, many are also increasingly looking globally to source their inputs.

Amongst those countries which are increasingly specialising in services, we see varying trajectories. The EU's key service-based economy, the UK, is clearly seeing a relative fall in its integration in production structures on a global level – consistent with such an orientation. Its overall imports of intermediate goods showed the second lowest growth rate in Europe. Greece and the Netherlands are also seeing similar developments, although the growth rates of intermediate imports are higher in these countries.

Finally, growing strength in services does not inevitably mean that industrial integration is underdeveloped. Belgium/Luxembourg companies have boosted their competitiveness in the services sector while increasing the level of industrial integration in manufacturing. However this strategy has not stopped a decline in relative competitiveness of the latter sector.

Overall, the evidence in this work indicates that although EU member states are adopting different strategies, the two most successful countries in terms of market share and growth – Germany and Ireland – are clearly integrating into the world economy and, particularly in the former case, with the new member states. At the same time these new member states are themselves raising their level of integration significantly, with major increases in intermediate goods imports from all sources. Thus the competitiveness of many EU companies throughout the Union is increasingly supported by a complex network of inputs from within and beyond the EU's borders which have enabled the EU as a whole to continue to command large market shares in key sectors.

CONCLUSION

As the EU enters what is clearly going to be a period of economic difficulties with the major challenges which they will bring, this report provides some solace. The starting point of EU industry is not fundamentally weak, at least not in many sectors. There are major challenges ahead, not least the growing economic muscle of many emerging country competitors, especially in China. However, so far the EU and its companies have resisted such threats relatively well. EU companies are outperforming other developed country competitors on several levels. They are successfully defending their market share in up-market products, commanding significantly higher prices for their goods than the global average. Although their performance in high tech products is less impressive, they have a large market share in the sector which they have managed to maintain in recent years. In addition, in medium tech products EU companies show consistent strengths in terms of trade performance and competitiveness.

At member state level, the picture is highly heterogeneous, but the industries of several member states are performing well in key sectors and markets – especially in medium tech industries like chemicals, machinery and cars. While others undoubtedly have pockets of underperformance and challenges in key industries, like information technology, the economic actors of the Union as a whole have some important complementarities.

These complementarities are also seen in the emerging integration of EU industry. Enlargement has clearly been a motor both for restructuring the EU's internal division of labour. There is evidence of increasing inter-EU sourcing, especially of intermediate products and capital goods in many member states, including the EU's key exporter, Germany. The success of German firms in international trade, therefore, reflects not only German strengths but those of its many suppliers from EU15 and increasingly EU10 countries which provide important contributions to competitiveness.

Other member states' industries have exploited growing openness to increase their overseas sourcing and their broader integration into the world economy. This is particularly true in the new member states and Ireland. Overall, EU industry is adopting a variety of approaches to maximising competitiveness, but the majority of successful exporters have increased their use of inputs from both intra and extra EU sources to underscore their global performance. This openness to global sourcing, together with investments in marketing, research and innovation, should enable EU companies to continue to defend their position as up-market, technology oriented global suppliers.

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TECHNICAL ANNEX

BACI DATABASE

Trade data used in this paper are from the BACI database, a new database for the analysis of international trade developed by Gaulier & Zignago (2009). BACI draws on the UN COMTRADE information but, contrary to COMTRADE, in which imports are reported CIF (cost, insurance and freight) and the exports FOB (free on board), BACI provides FOB data for both types of trade flows. Thus, exports from exporter i to importer j are equal to j imports from i. This reconciliation of mirror flows is done for both values and quantities, and relies on estimated indicators of the quality of import and export country reporting. The quantity units are converted into tons, making possible the computation of homogeneous unit values. BACI is available to COMTRADE users at: http://www.cepii.fr/anglaisgraph/bdd/baci.htm

In this work, we consider world exports from 1995 to 2005 for largest exporters in the world: EU, US, Japan, and four larger emerging countries (BRIC for Brazil, Russia, India and China). However, due to changes in the quantities estimation methodology used by the UN to build COMTRADE, unit values are only available in BACI until 2004. Accordingly, when the unit values are involved in the analysis (to classify bilateral flows in the three market segments or to consider trade in volume) the period covered is 1995-2004.

BACI covers trade between more than 200 countries and in about the 5,000 products of the 6 digits Harmonised System (HS) classification. However, this study excludes intra-EU25 trade flows. This choice must be kept in mind when it comes to market shares and changes therein. We exclude also mineral products, specific, and non-classified products.[16]

We rely on observed values of traded products to infer their market positioning. Trade flows are ordered according unit values and classified accordingly into three ranges: flows with the lowest unit value form the low-market, the ones with intermediate unit values – the mid-market, and the ones with the highest unit value - up-market. For each product, we consider the world distribution of their unit values and market segments are simply defined by percentiles in each year: down-market under the 33th percentile of unit-values, up-market above the 67th percentile, middle-market in the middle of the distribution.[17] Each flow is then classified into a market segment according to its unit value positioning in this world distribution. There is also a small 'non classified' range of trade flows for which data on trade quantities is not available and unit values can not be computed. But they represent less than 10% of the world trade. We assume that differences in prices (unit values) reflect quality differences. Since exports and imports are analysed separately, flows for the same product with a given trade partner can exist in different price/quality ranges.

[16] More precisely, we exclude the six following chapters of the Harmonized System: the mineral products (chapters 25, 26 and 27), the works of art, collectors' pieces and antiques (chapter 97) and the two last chapters, 98 and 99, dedicated to special classifications or transactions.

[17] The shortcoming of this method is that we assume there is differentiation into three market segments for all goods, even the most homogeneous commodities.

Concerning the technological classification, Lall (2000) distinguish the following product categories (with acronyms in parentheses): high-tech manufactures ("HT"), medium-tech manufactures ("MT"), low-tech manufactures ("LT"), resource-based manufactures ("RB") and primary products ("PP"). The main sectors covered by each product category are indicated in the Table A1 below.[18]

In terms of stage of production of goods, we use the classification of Fontagné, Freudenberg and Ünal-Kesenci (1995, 1996) based on the UN Broad Economic Categories (BEC).[19]

Table A1: Technological classification of exports from Lall (2000) – main sectors covered by each product category

Primary products (PP)	Fresh fruit, meal, rice, cocoa, tea, coffee, wood, coal, crude petroleum, gas
Manufactured products:	
Resource-based manufactures (RB)	
Agro/forest-based products	Prepared meats/fruits, beverages, wood products, vegetable oils.
Other resource-based products	Ore concentrates, petroleum/rubber products, cement, cut gems, glass
Low-technology manufactures (LT)	
Textile/fashion cluster	Textile fabrics, clothing, headgear, footwear, leather manufactures, travel goods
Other low technology	Pottery, simple metal parts/structures, furniture, jewellery, toys, plastic products
Medium technology manufactures (MT)	
Automotive products	Passenger vehicles and parts, commercial vehicles, motorcycles and parts
Medium technology process ind.	Synthetic fibres, chemicals and paints, fertilizers, plastics, iron, pipes/tubes
Medium technology engineering	Engines, motors, industrial machinery, pumps, switchgear, ships, watches
High-technology manufactures (HT)	
Electronics and electrical prods	Office/data processing/ telecommunications equip, TVs, transistors, turbines, power-generating equipment
Other high technology	Pharmaceuticals, aerospace, optical/ measuring instruments, cameras
Other transactions (OT)	Electricity, cinema , film, printed matter, "special" transactions, gold, art, coins, pets.

Source: Lall (2000).

[18] The approach is broader than that used in earlier studies. For instance Cheptea, Fontagné and Zignago (2008) focus on high-tech goods and use their HS6 level definition given by Fontagné, Freudenberg & Unal-Kesenci (1999), based on the Eurostat-OECD list. Given the EU's many strengths in technologies like automobiles, chemicals and machinery, which are usually classified as more 'medium technology' sectors, we prefer in this work the classification of products defined by Lall (2000), less restrictive, since it allows the analysis of different levels of embodied technology in goods. The results show a market share for high tech products for all Triad countries which is slightly lower than, but quite consistent with, the analysis undertaken with the OECD's classification – which were 18.5% for the EU, 10.3% for Japan and 16.5% for the US (to compare with results of Table 4). The advantage of the approach taken here, however, is that it enables us to also assess performance in other sectors.

[19] The BEC classifies transportable goods at three digit level according to their main use. See http://unstats.un.org/unsd/class/family/family2.asp?Cl=10

CONTRIBUTION TO TRADE BALANCE INDICATOR (CTB)

The comparative advantage is the building block of traditional trade theories, and derives from differences in pre-trade relative prices across countries. Uneven costs of traded products across countries define a country's comparative advantages and disadvantages, and shape the pattern of international trade flows. The difficulty of measuring comparative advantages empirically consists in the fact that relative autarky prices are not observable. Balassa (1965) affirms that comparative advantages are "revealed" by observed trade patterns. Rather than determining the underlying sources of comparative advantage, he develops an index that identifies whether a country has a comparative advantage in a given sector / product. Since first introduces by Balassa (1965), the definition of *relative* comparative advantage has been revised and modified, such that an excessive number of measures exist today. Still, they all provide an answer to the same question: "Which are the strong and the weak points of an economy?"

Instead of relative export structures, as in the classic Balassa (1965) method, we opt for an analytical indicator based on the share of total trade balance, which also takes into account the size of each country's market. Thus, we compute first the trade balance for country i and product k relative to its total trade:

$$y_{ik} = 1000 \ * \ \frac{X_{ik} - M_{ik}}{X_{i.} + M_{i.}},$$

where *X* and *M* stand for country's exports and imports respectively.

The contribution of product *k* to the trade balance, in relation to total trade flows, is defined by:

$$f_{ik} = y_{ik} - g_{ik} * y_{i.}, \text{ where } \ g_{ik} = \frac{X_{ik} + M_{ik}}{X_{i.} + M_{i.}} \ \textit{and} \quad y_{i.} = 1000 * \frac{X_{i.} - M_{i.}}{X_{i.} + M_{i.}}.$$

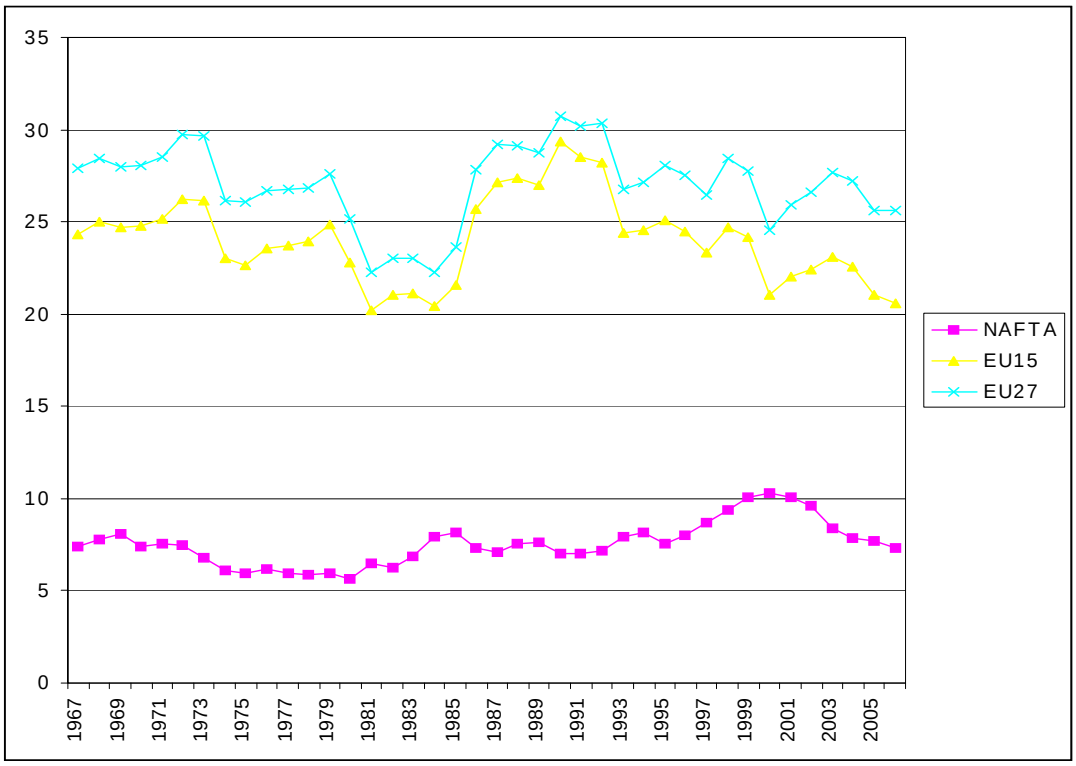
In addition, it is necessary to eliminate the influence of changes that are not specific to the country in question but result from the evolution of the share of the product in world trade. In relation to a base year (τ), the flows *X* and *M* in the other years (*t*) are adjusted by multiplying them all by $e_k^t = \frac{w_k^\tau}{w_k^t}$.

The comparative advantage indicator f_{ik} is therefore calculated using world weights for the base year (τ). For this year it is identical to the relative contribution, e_k^t. For the other years (*t*) the difference is all the greater, the more world trade in product *k* diverges from the average tendency for all merchandise.

In this work, we present contributions to trade balance using two sources of data: CHELEM has the advantage of including trade in services whereas BACI allow very detailed analysis for trade in goods. We are indebted to I. Bensidoun and D. Ünal-Kesenci for having computed this indicator (see Bensidoun and Ünal-Kesenci, 2008, for more details). The CTB detailed by member state and presented in the statistical appendix come from Cheptea, Fontagné and Zignago (2008). Comparative advantages are calculated for individual products at the most detailed level of BACI (exporter – HS6 product). The advantage by chain or by stage or production is then obtained by summing up results across products within the particular chain or stage.

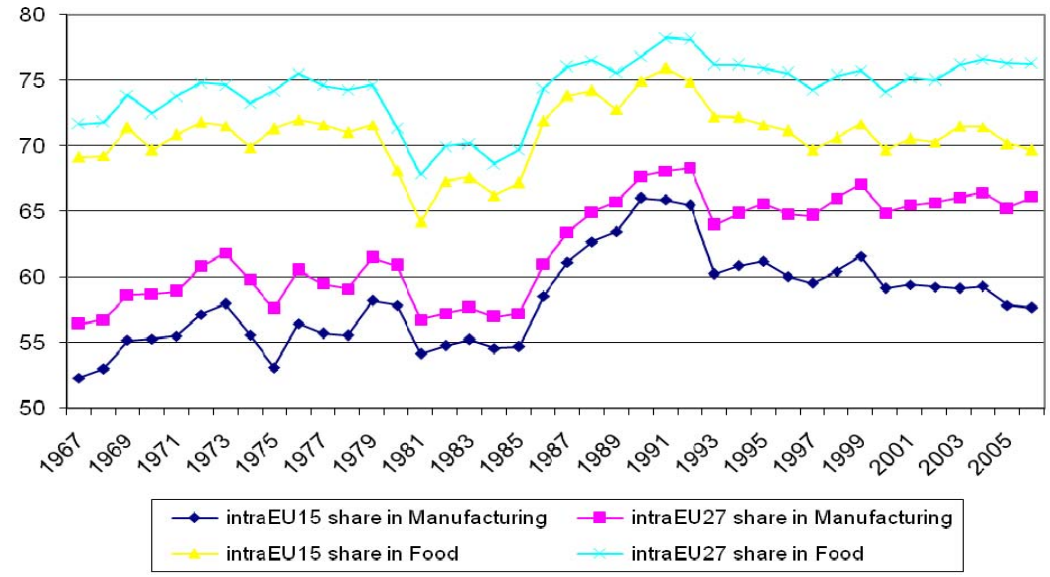
STATISTICAL ANNEX

Figure A1: Trend in intra-zone trade's share of world trade (1967-2006)



Source: CHELEM, CEPII, author's calculations.

Figure A2: Trend in intra-zone trade's within EU27 - Agri-Food and manufacturing (1967-2006)



Source: CHELEM, CEPII, author's calculations.

Table A2: Contribution to Trade Balance (CTB) by sector and Intensity of Specialisation (IS), 1995 and 2005

	Agr	Forst	fish	food	Tob	tex	app	Lthr	wood	papr	print	ptrl	Chem	plst	minl	mtl	Mtl pr	mach	comp	elec	tv	med	cars	trans	furn	*IS*
1995																										
EU15	**-22.6**	**-1.4**	**-1.4**	**5.4**	**1.0**	**-5.4**	**-17.6**	**-2.0**	**-3.5**	**1.6**	**1.9**	**-0.3**	**25.1**	**-0.9**	**6.1**	**-8.2**	**3.5**	**48.9**	**-32.3**	**1.7**	**-15.5**	**-4.8**	**21.7**	**3.4**	**-2.2**	***14.0***
EU25	**-22.8**	**-1.3**	**-1.3**	**6.2**	**0.9**	**-5.5**	**-17.1**	**-2.0**	**-3.3**	**1.7**	**1.8**	**-0.3**	**24.1**	**-0.8**	**6.2**	**-7.2**	**3.5**	**47.6**	**-32.3**	**1.9**	**-15.4**	**-4.9**	**21.1**	**3.1**	**-1.9**	***13.7***
USA	20.2	2.1	-0.2	6.6	3.7	-4.7	-19.9	-9.1	-3.3	2.2	5.2	0.4	26.8	1.1	-1.5	-4.4	0.3	15.4	-7.3	-0.3	-9.0	10.6	-37.4	17.8	-15.0	*11.8*
Japan	-24.0	-7.8	-5.5	-61.5	-3.4	-13.8	-22.1	-9.5	-17.3	-6.0	-2.4	-2.4	-1.6	1.9	0.5	-14.9	1.6	49.4	12.7	15.5	44.9	4.5	64.8	10.5	-14.2	*22.9*
China	-10.5	-0.9	1.9	-5.1	1.5	15.4	65.9	29.9	-1.5	-9.2	0.9	0.1	-54.3	3.1	3.0	-24.3	5.5	-61.2	12.7	9.3	-2.7	0.7	-10.5	-8.4	39.4	*22.4*
India	17.1	-0.9	0.8	39.6	0.3	68.7	64.1	20.9	0.8	-10.7	-1.7	-0.5	-61.5	1.6	2.2	-45.3	6.3	-72.9	-3.8	-15.0	-13.9	-13.0	-1.2	-11.1	79.0	*33.1*
Russi	-7.3	15.6	4.1	-76.7	-5.2	-12.5	-19.1	-17.4	10.0	13.3	-3.8	10.8	32.4	-11.1	-5.4	242.1	-10.4	-59.5	-16.8	-8.7	-32.5	-16.8	-17.0	-3.1	-9.2	*49.3*
Brazil	21.9	1.0	0.1	48.9	4.5	-1.3	-1.1	20.6	12.6	18.7	-3.1	-0.2	-47.6	-4.6	2.3	66.7	-0.8	-36.6	-15.2	-8.8	-34.5	-14.7	-23.3	-4.2	-1.6	*22.1*
2005																										
EU15	**-7.7**	**-0.4**	**-0.6**	**2.2**	**0.2**	**-10.8**	**-18.1**	**-4.2**	**0.2**	**3.1**	**1.3**	**-0.8**	**44.6**	**0.8**	**3.1**	**-6.7**	**2.6**	**30.4**	**-26.1**	**1.3**	**-29.1**	**-3.0**	**24.5**	**0.4**	**-6.4**	***13.8***
EU25	**-7.4**	**-0.4**	**-0.6**	**2.7**	**0.2**	**-10.4**	**-17.2**	**-4.2**	**0.6**	**3.4**	**1.3**	**-0.8**	**43.0**	**1.2**	**3.5**	**-6.1**	**2.7**	**29.3**	**-25.3**	**-0.1**	**-29.4**	**-4.4**	**24.8**	**-0.1**	**-5.6**	***13.5***
USA	7.9	0.4	-0.1	2.0	0.1	-8.1	-16.0	-5.0	-5.6	2.3	2.1	0.1	29.1	2.2	-1.4	-2.7	0.0	16.5	-10.9	-0.1	-20.2	23.4	-22.0	24.0	-17.9	*11.6*
Japan	-10.2	-1.3	-1.5	-34.0	-0.4	-12.6	-17.6	-6.3	-7.7	-1.2	-0.9	-1.0	-14.5	1.6	-0.3	-0.1	-2.1	29.7	-14.6	5.7	13.0	4.1	77.3	5.8	-11.1	*18.1*
China	-6.0	-1.3	0.1	-0.3	0.0	19.8	27.6	13.2	1.5	-3.4	0.7	-0.1	-54.3	4.3	3.7	-34.1	8.2	-10.2	42.5	6.4	30.9	-68.0	-9.0	-2.1	30.5	*21.7*
India	5.5	-1.5	0.2	11.9	0.3	42.5	40.7	10.9	-0.1	-3.5	-3.7	0.0	20.9	4.6	4.0	-50.6	7.7	-23.2	-16.6	-3.8	-68.9	-12.1	10.2	-28.3	81.2	*26.4*
Russi	-7.6	7.5	-0.8	-32.4	-0.1	-8.2	-7.5	-4.1	6.8	-1.2	-0.5	12.2	-2.2	-11.7	-4.8	236.9	-7.7	-54.9	-13.3	-9.0	-64.1	-7.5	-35.9	2.4	0.2	*47.1*
Brazil	29.1	-0.1	0.0	60.5	0.3	0.6	-0.2	12.5	12.5	6.7	-0.5	-0.3	-89.4	-6.8	4.4	47.3	-3.4	-18.7	-12.4	-13.3	-28.8	-37.3	34.4	-0.4	3.5	*25.8*

Source: Cheptea, Fontagné and Zignago (2008) calculations on BACI datasets. The degree of specialisation (last column) for each country is the standard deviation of the sector CTBs.

Table A3: Contribution to Trade Balance (CTB) by sector and Intensity of Specialisation (IS) of Member States, 2005

	Agr	Fores	Fish	Food	Toba	Tex	App	Lthr	wood	Papr	Print	Petrl	chem	Plast	Minr	Metl	Metl	mach	comp	Elec	TV	Med	Cars	Othr	furn	*IS*
EU25	**-7.4**	**-0.4**	**-0.6**	**2.7**	**0.2**	**-10.4**	**-17.2**	**-4.2**	**0.6**	**3.4**	**1.3**	**-0.8**	**43.0**	**1.2**	**3.5**	**-6.1**	**2.7**	**29.3**	**-25.3**	**-0.1**	**-29.4**	**-4.4**	**24.8**	**-0.1**	**-5.6**	***13.5***
Aust.	-5.4	-0.6	-0.1	13.1	0.3	-11.2	-22.0	-7.6	15.1	9.5	1.7	0.0	19.4	2.5	18.0	26.4	8.0	43.8	-22.9	-1.8	-40.3	-9.1	-29.0	-3.2	-4.6	*16.3*
Belg-L	-11.7	-0.2	-0.2	11.9	0.1	-5.5	-15.5	-6.7	3.5	0.3	0.1	0.4	50.1	-1.8	-0.7	2.2	-0.4	8.9	-8.8	0.1	-23.6	-13.2	-10.5	-10.3	10.6	*12.6*
Dmk	9.3	1.2	-3.8	30.7	0.5	-19.9	-32.3	-6.9	-4.9	0.9	1.3	0.0	116.5	1.2	-0.6	-15.5	0.2	25.2	-17.7	12.8	-84.2	14.9	-16.4	-10.6	-1.9	*29.5*
Fin	-2.4	-7.1	-0.9	-3.8	0.0	-7.7	-11.8	-3.2	4.8	25.8	-0.5	-0.4	-35.9	-1.6	0.8	-20.3	0.8	19.6	-24.2	-2.5	93.0	-2.8	-10.2	-4.3	-5.2	*20.4*
France	-4.2	-0.4	-0.9	13.1	0.1	-13.0	-22.0	-3.6	-0.9	1.1	1.3	-2.7	38.8	0.3	1.7	4.7	1.8	13.0	-26.1	1.7	-38.1	-18.3	33.6	27.2	-8.2	*15.2*
Ger.	-7.7	-0.1	-0.3	-5.5	0.3	-13.9	-20.3	-4.8	1.8	2.7	1.2	-0.5	41.8	2.6	1.9	-3.5	1.9	42.2	-37.1	0.9	-55.0	-2.8	67.9	-4.5	-9.3	*21.1*
Greece	11.0	-0.6	-0.8	18.8	2.3	9.1	8.0	-6.7	-1.9	2.0	0.6	0.0	-0.5	10.2	0.9	13.3	12.3	-5.6	-2.2	4.1	-9.2	-7.8	-2.4	-44.9	-10.0	*11.1*
Irl	-1.8	-0.2	0.1	7.1	0.0	-4.4	-6.9	-2.2	-3.6	-2.3	1.8	0.0	182.5	-5.0	-2.0	-1.9	-3.5	-13.4	-60.0	-20.0	-31.3	19.9	-19.7	-26.7	-6.3	*37.2*
Italy	-9.3	-0.7	-0.7	7.5	0.0	-1.8	-9.2	1.1	-3.9	0.4	0.7	0.0	10.2	4.0	12.3	-37.7	10.0	72.8	-4.8	4.7	-37.0	-3.7	-27.1	-2.6	15.2	*18.0*
NL	-0.9	-0.4	-0.2	23.1	0.9	-3.3	-7.8	-2.6	-1.9	4.0	1.3	0.2	32.7	1.3	0.2	-0.3	3.6	21.3	-42.4	0.7	-68.5	23.4	10.5	10.1	-5.0	*17.7*
Port	-26.9	-2.3	-0.9	11.3	0.0	19.8	9.9	4.4	17.2	9.5	1.1	0.0	-12.1	7.8	13.6	-94.6	10.3	1.2	32.7	8.9	9.4	-9.1	-0.7	-10.4	0.1	*21.2*
Spain	-10.3	0.2	-1.5	5.9	-0.5	-9.5	-19.5	-3.7	0.0	2.9	1.5	-0.3	44.9	2.8	13.3	-10.9	3.4	6.9	-12.3	2.0	-33.3	-25.6	37.1	12.8	-6.4	*15.0*
Swed	-3.3	-1.2	-1.4	-9.1	0.1	-17.3	-17.7	-4.4	3.1	9.8	1.6	-0.8	34.8	-3.4	-1.4	0.2	-0.4	25.2	-4.3	-6.4	22.1	-12.2	12.2	-16.4	-9.2	*11.4*
UK	-7.6	-0.2	-0.3	-7.5	0.5	-16.5	-25.5	-6.9	-3.5	0.4	2.4	-1.1	45.9	-2.7	-0.6	1.0	-1.4	19.1	-17.0	0.7	14.3	-1.1	20.4	10.5	-17.5	*12.8*
Cypr	4.1	0.0	1.4	11.6	8.3	-2.3	0.1	-1.3	-3.1	3.2	1.9	0.0	61.8	-5.9	-5.0	31.0	-4.9	-3.2	2.4	-3.6	3.9	3.3	-19.6	-79.9	-5.4	*20.3*
Czech	-5.7	0.1	-0.1	0.9	0.1	-2.3	-14.2	-6.2	3.6	5.1	1.2	-1.1	-14.7	8.1	37.6	17.0	7.7	23.7	-29.1	-4.3	-74.1	-20.4	62.8	5.2	-1.0	*21.7*
Est.	-2.6	-1.4	-0.3	21.6	-0.1	7.7	6.9	-3.8	19.5	4.6	2.6	0.0	-2.9	0.8	2.2	12.9	17.1	4.6	-13.2	-44.9	-31.7	6.1	-34.0	17.3	11.3	*15.0*
Hung.	1.5	-0.3	0.0	14.9	0.0	-1.6	-2.5	-1.5	1.1	5.2	0.0	-1.4	35.3	4.8	2.1	-7.3	0.1	-8.1	6.2	-56.8	36.8	-37.1	14.4	-5.1	-0.6	*16.8*
Lat.	-7.8	-4.2	-2.1	16.9	0.0	11.3	4.6	-5.2	11.3	-0.1	-1.7	0.0	24.7	-0.1	-2.3	-27.0	7.7	-4.1	-5.2	-0.2	-8.1	1.8	-10.0	8.2	-8.2	*9.1*
Lith	-4.9	-1.2	-1.0	9.0	0.4	3.1	1.6	-4.6	2.1	4.2	0.4	-10.3	-24.9	4.9	4.1	-25.4	4.1	9.4	-9.1	-0.8	-17.7	-1.9	33.9	1.4	23.5	*11.6*
Malta	-3.1	-0.5	0.4	15.3	0.1	1.1	-3.6	-1.1	-1.3	-0.3	10.4	0.0	-4.5	-0.8	-2.8	-13.4	-3.0	-20.1	1.4	11.4	265.8	-5.1	-29.7	-213.5	-3.0	*65.0*
Pol	-4.0	-0.7	-1.6	18.0	1.4	-12.2	-6.0	-5.0	17.5	15.8	0.9	-0.1	-10.7	15.4	10.0	8.7	9.2	21.1	-27.4	-6.7	-79.8	-10.3	20.9	8.6	16.9	*18.8*
Slovk	-3.7	-0.2	0.0	-5.9	-0.1	-7.4	-3.9	-0.8	8.3	7.3	0.8	-3.0	-8.7	0.8	2.5	26.6	-0.9	2.0	-16.2	-5.2	-48.5	-98.6	149.2	3.9	1.5	*35.1*
Slovn	-6.8	-1.7	-0.1	-4.7	-0.3	-1.3	-0.2	-6.9	5.8	6.8	1.6	0.0	52.9	8.8	2.6	-26.3	9.2	31.6	-5.3	4.2	-2.8	0.9	-54.7	0.4	-13.6	*16.7*

Source: Cheptea, Fontagné and Zignago (2008) calculations on BACI datasets. The degree of specialisation (last column) for each country is the standard deviation of the sector CTBs.

Table A4: Contribution to Trade Balance by market segment (1995-2004)

Country	Low-market			Mid-market			Up-market			*Intensity of specialisation*		
	1995	**2000**	**2004**	**1995**	**2000**	**2004**	**1995**	**2000**	**2004**	***1995***	***2000***	***2004***
EU15	-5.1	-11.0	-16.4	-24.9	-17.7	-21.7	33.1	28.2	38.7	*24.2*	*20.2*	*27.3*
EU25	-4.1	-11.3	-16.7	-24.5	-17.1	-19.8	31.2	27.4	36.7	*23.1*	*19.8*	*25.9*
USA	-14.3	6.1	-10.6	-10.8	-25.3	-11.1	18.5	15.4	20.3	*15.4*	*17.6*	*14.7*
Japan	6.7	0.6	-8.6	21.2	-14.8	11.2	-15.2	24.5	0.0	*17.2*	*17.6*	*8.3*
Brazil	-0.8	16.5	27.0	51.9	71.2	41.7	-50.6	-86.5	-68.4	*41.8*	*65.4*	*48.8*
Russia	-36.0	-80.4	-108.1	84.5	35.7	97.9	-99.7	-28.7	2.9	*83.7*	*68.2*	*84.4*
India	55.4	52.2	74.2	-24.5	-5.3	-0.6	-51.6	-55.7	-74.3	*47.5*	*44.5*	*60.6*
China	110.2	90.7	142.8	-22.1	-2.0	-32.2	-38.0	-59.9	-80.8	*74.4*	*64.9*	*98.0*
Austria	-10.2	23.7	19.5	-16.4	-11.7	-27.1	13.5	-17.5	6.9	*15.6*	*18.6*	*19.7*
Bel.-Lux.	-5.9	-17.1	17.3	-17.2	-29.4	-35.8	14.4	12.0	6.6	*14.3*	*28.8*	*24.3*
Denmark	-26.5	-25.3	-24.9	-24.0	-34.1	-2.9	45.6	54.0	23.1	*33.6*	*39.8*	*19.9*
Finland	-6.1	18.0	4.6	38.2	31.6	14.9	-45.0	-52.7	-17.9	*35.0*	*37.0*	*13.8*
France	-0.5	-7.3	-1.5	-25.0	-9.9	-16.2	29.2	20.3	19.7	*22.3*	*13.8*	*14.8*
Germany	-5.4	-23.2	-11.8	-17.0	-0.2	-7.6	25.3	26.7	21.2	*18.0*	*20.5*	*14.7*
Greece	47.2	65.6	19.2	-22.0	-8.7	0.2	-23.3	-54.8	-19.8	*33.0*	*49.6*	*15.9*
Ireland	-5.4	-81.3	-53.0	-44.1	-49.8	-54.8	39.8	143.3	106.5	*34.9*	*99.6*	*75.6*
Italy	35.1	4.6	3.2	-60.8	-39.5	-53.3	22.3	31.3	47.8	*42.6*	*29.3*	*41.4*
Netherlands	-22.9	-3.5	-18.4	-19.4	-32.0	-6.5	40.9	-8.0	25.8	*29.3*	*31.5*	*18.7*
Portugal	-16.7	-2.5	-24.5	-47.8	-43.7	-47.6	65.7	45.8	67.1	*47.9*	*36.6*	*49.6*
Spain	6.8	6.1	-2.1	-29.0	-17.2	-15.9	25.8	14.4	18.7	*22.9*	*13.6*	*14.2*
Sweden	-31.0	7.5	-14.4	2.3	-4.6	-19.7	33.9	-0.9	35.5	*26.7*	*5.2*	*24.9*
UK	-16.1	-10.1	-36.5	-25.8	-19.3	-24.1	45.5	33.6	58.9	*31.7*	*23.2*	*42.4*
Cyprus	-11.1	39.1	-31.9	-16.4	-18.7	-30.2	-32.3	-22.0	61.5	*40.9*	*28.1*	*43.7*
Czech Rep.	60.0	9.7	11.2	-24.7	-3.0	17.2	-40.1	-15.6	-29.7	*44.1*	*11.9*	*20.8*
Estonia	6.1	45.5	39.8	1.8	-8.6	-8.9	-9.2	-44.6	-31.8	*6.5*	*37.4*	*29.8*
Hungary	48.6	1.1	5.4	-40.5	-13.6	20.5	-7.7	9.5	-26.4	*36.8*	*9.8*	*19.6*
Latvia	-7.9	-25.9	-15.2	35.3	47.0	-25.8	-13.4	-26.5	43.3	*23.7*	*34.7*	*30.4*
Lithuania	-18.8	-25.8	-49.2	11.7	16.3	20.4	6.0	5.8	29.7	*13.2*	*18.1*	*35.2*
Malta	-169.3	-32.1	-69.2	-30.6	-18.1	33.0	4.5	47.4	-29.5	*150.3*	*34.7*	*60.7*
Poland	77.3	9.3	23.3	-14.4	9.3	11.4	-64.3	-27.0	-35.2	*58.7*	*18.0*	*25.2*
Slovakia	87.6	20.5	-75.2	-11.0	8.8	21.5	-72.7	-32.2	50.5	*66.1*	*22.7*	*53.8*
Slovenia	65.9	65.1	56.0	-3.4	-20.7	-35.4	-60.3	-41.1	-20.3	*51.6*	*46.1*	*40.0*

Source: Cheptea, Fontagné and Zignago (2008) calculations on BACI datasets. The degree of specialization is the standard deviation of the countries' CTBs across market segments.

Table A5: World market share and changes by market level - EU 25 and Member States

Country	2004			1995-2004 change		
	Low	Mid	Up	Low	Mid	Up
EU25	**14.3**	**18.4**	**31.2**	**-3.94**	**-1.54**	**0.53**
Austria	0.4	0.5	1.0	0.01	-0.03	0.16
Belgium Lux.	0.7	0.7	1.3	-0.1	-0.06	-0.17
Bulgaria	0.2	0.1	0.2	-0.02	0.08	0.12
Cyprus	0.0	0.0	0.0	-0.03	0	0.01
Czech Republic	0.2	0.2	0.2	-0.02	0.08	0.12
Denmark	0.3	0.5	0.6	-0.08	0.08	-0.06
Estonia	0.0	0.0	0.0	-0.01	0.01	0.02
Finland	0.4	0.4	0.8	-0.04	-0.08	0.08
France	1.8	2.5	3.5	-0.57	-0.06	-0.83
Germany	3.4	5.4	10.1	-0.17	-0.72	-0.18
Greece	0.1	0.1	0.1	-0.02	0	0.03
Hungary	0.3	0.2	0.3	0.04	0.09	0.19
Ireland	0.3	0.8	1.6	-0.07	0.43	0.92
Italy	2.1	2.3	3.3	-1.25	-0.21	0.16
Latvia	0.0	0.0	0.0	-0.02	-0.01	0.02
Lithuania	0.1	0.0	0.0	-0.01	0.01	0.01
Malta	0.0	0.1	0.0	0.01	0.06	0.01
Netherlands	0.8	0.9	1.5	-0.3	-0.61	-0.37
Poland	0.4	0.3	0.2	0.05	0.16	0.13
Portugal	0.1	0.1	0.2	-0.02	0.02	-0.01
Romania	0.5	0.4	0.5	-0.05	0.22	0.36
Slovakia	0.1	0.0	0.2	-0.04	0.01	0.14
Slovenia	0.1	0.1	0.1	0.02	0	0.03
Spain	0.8	0.8	1.0	-0.12	0.09	0.15
Sweden	0.6	0.6	1.5	-0.03	-0.22	-0.08
UK	1.4	2.0	3.7	-1.19	-0.6	0.03

Source: BACI, authors' calculations.

Table A6: World market share in different technological categories – EU25 and Member States

Country	2005							1995-2005 change						
	HT	**LT**	**MT**	**OT**	**RB**	**PP**	**All**	**HT**	**LT**	**MT**	**OT**	**RB**	**PP**	**All**
EU25	17.3	15.8	24.0	12.6	22.3	9.6	**19.6**	-0,6	-3,3	-1,3	-5,1	-1,5	-0,8	**-1,4**
Austria	0.3	0.6	0.6	0.2	0.6	0.2	**0.5**	0,1	-0,1	0,0	0,0	0,0	0,1	**0,0**
Belg/Lux	0.6	0.6	1.0	0.2	2.7	0.4	**1.0**	0,1	-0,2	-0,1	-0,2	0,0	-0,1	**-0,1**
Cyprus	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0,0	0,0	0,0	0,0	-0,1	0,0	**0,0**
Czech	0.2	0.3	0.3	0.1	0.2	0.1	**0.2**	0,1	0,1	0,1	0,1	0,1	0,0	**0,1**
Denmark	0.4	0.3	0.3	0.2	0.4	1.1	**0.4**	0,1	0,0	-0,1	0,0	-0,1	-0,1	**-0,1**
Estonia	0.0	0.0	0.0	0.0	0.1	0.0	**0.0**	0,0	0,0	0,0	0,0	0,0	0,0	**0,0**
Finland	0.7	0.2	0.4	0.3	0.7	0.1	**0.5**	0,3	-0,1	-0,1	-0,1	-0,3	-0,1	**0,0**
France	2.8	1.8	2.6	1.3	2.2	1.4	**2.4**	-0,3	-0,6	-0,4	-0,7	-0,6	-0,2	**-0,4**
Germany	4.3	3.4	9.0	3.3	4.6	1.2	**5.6**	0,4	-0,7	-0,4	-0,6	-0,6	-0,1	**-0,2**
Greece	0.0	0.2	0.1	0.1	0.2	0.3	**0.1**	0,0	0,0	0,0	-0,1	0,0	0,0	**0,0**
Hungary	0.4	0.2	0.2	0.1	0.2	0.2	**0.2**	0,3	0,1	0,1	0,0	0,0	0,0	**0,1**
Ireland	1.2	0.3	0.3	0.1	1.9	0.3	**0.8**	0,5	0,2	0,1	0,0	1,2	-0,3	**0,4**
Italy	1.1	3.8	2.9	1.1	1.9	0.7	**2.3**	-0,1	-1,1	-0,4	0,1	-0,1	0,0	**-0,4**
Latvia	0.0	0.0	0.0	0.0	0.1	0.0	**0.0**	0,0	0,0	0,0	0,0	0,0	0,0	**0,0**
Lithuania	0.0	0.1	0.1	0.0	0.1	0.1	**0.1**	0,0	0,0	0,0	0,0	0,0	0,0	**0,0**
Malta	0.1	0.0	0.0	0.1	0.0	0.0	**0.0**	0,1	0,0	0,0	0,0	0,0	0,0	**0,0**
Netherlands	1.1	0.5	1.0	0.3	1.3	1.8	**1.0**	-0,5	-0,2	-0,2	-0,1	-0,5	-0,1	**-0,3**
Poland	0.1	0.4	0.4	0.2	0.4	0.3	**0.3**	0,1	0,2	0,2	0,1	0,2	0,2	**0,2**
Portugal	0.1	0.2	0.1	0.1	0.2	0.1	**0.1**	0,1	-0,1	0,0	0,0	0,0	0,0	**0,0**
Slovakia	0.0	0.1	0.2	0.1	0.1	0.0	**0.1**	0,0	0,0	0,1	0,1	0,0	0,0	**0,0**
Slovenia	0.1	0.1	0.1	0.1	0.1	0.0	**0.1**	0,0	0,0	0,1	0,1	0,0	0,0	**0,0**
Spain	0.5	0.8	1.0	0.7	1.1	0.7	**0.8**	0,1	-0,1	0,2	-0,2	0,0	0,2	**0,1**
Sweden	0.9	0.6	1.0	0.3	0.8	0.1	**0.8**	-0,1	0,0	-0,2	-0,1	0,0	0,0	**-0,1**
UK	2.5	1.3	2.5	3.8	2.6	0.5	**2.2**	-1,7	-0,7	-0,5	-3,3	-0,6	-0,3	**-0,8**

Source: BACI, authors' calculations.

Table A7: Structure of EU member states imports by stage of production from EU10, EU15 and extra-EU -- 1995

	Consumer goods				Intermediate goods				Capital goods				Primary products			
	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All
EU25	**30.0**	**30.8**	**26.8**	**29.5**	**56.5**	**50.8**	**46.7**	**49.7**	**8.6**	**15.5**	**19.1**	**16.4**	**4.9**	**2.9**	**7.4**	**4.4**
Austria	26.7	33.9	31.8	33.1	56.0	47.3	45.0	47.4	8.1	16.6	19.3	16.6	9.1	2.2	3.9	3.0
Belgium-Lux	28.6	30.6	21.0	28.3	58.3	52.0	51.4	51.9	8.6	11.0	10.7	10.9	4.4	6.5	16.9	9.0
Cyprus	9.4	31.3	36.9	33.2	25.7	40.2	25.7	33.0	62.5	26.5	33.6	31.0	2.4	2.0	3.8	2.8
Czech Rep.	23.0	22.2	25.3	22.8	65.2	52.7	38.8	52.4	9.1	23.8	27.2	21.9	2.8	1.4	8.7	2.9
Denmark	46.9	27.9	36.7	30.6	43.8	51.6	38.1	48.0	6.2	18.6	20.1	18.7	3.1	1.9	5.1	2.7
Estonia	44.8	31.1	31.4	32.0	39.7	50.4	44.4	48.3	6.8	16.8	16.8	16.2	8.7	1.6	7.4	3.4
Finland	29.2	24.2	17.5	22.1	45.2	53.6	52.7	53.0	13.5	20.5	21.2	20.5	12.0	1.7	8.6	4.4
France	40.5	32.1	29.8	31.5	51.4	49.8	45.5	48.6	6.1	16.4	20.4	17.5	2.0	1.6	4.3	2.4
Germany	32.5	34.8	30.8	33.2	55.7	49.4	44.9	48.2	8.9	13.7	19.2	15.3	2.9	2.1	5.1	3.2
Greece	29.4	39.8	28.6	36.8	45.1	43.2	42.6	43.1	19.8	14.0	21.1	15.9	5.8	3.1	7.7	4.3
Hungary	18.1	21.4	24.9	22.0	71.5	57.1	51.9	56.9	8.6	20.0	16.7	18.5	1.8	1.5	6.5	2.7
Ireland	22.8	31.3	11.8	23.7	56.6	52.5	54.8	53.4	13.7	14.2	31.7	20.9	6.9	2.1	1.7	2.0
Italy	26.9	29.1	24.8	27.8	58.1	51.6	52.1	52.0	4.8	14.2	13.9	13.8	10.3	5.1	9.2	6.5
Latvia	37.3	34.1	24.3	31.9	50.8	40.4	58.2	47.0	9.0	23.2	13.0	18.1	2.9	2.3	4.6	3.1
Lithuania	43.1	32.5	19.1	29.2	42.2	44.1	55.7	48.1	12.0	20.6	11.2	15.8	2.8	2.8	13.9	6.9
Malta	35.3	24.4	16.0	21.9	45.4	59.2	44.6	54.8	15.9	15.6	36.7	21.9	3.5	0.8	2.7	1.4
Netherlands	33.5	29.7	23.7	27.7	55.4	50.5	46.7	49.3	6.5	16.3	21.6	17.9	4.7	3.5	8.1	5.1
Poland	18.5	19.7	28.9	21.8	64.4	58.2	39.6	54.2	7.8	20.2	19.3	19.2	9.3	1.9	12.1	4.8
Portugal	14.9	31.2	25.8	30.1	48.7	49.3	45.6	48.5	34.7	16.0	11.3	15.2	1.6	3.5	17.3	6.2
Slovakia	24.9	19.7	21.1	21.9	60.2	53.9	43.0	54.5	11.8	25.0	24.2	19.8	3.0	1.5	11.7	3.8
Slovenia	16.0	25.8	28.5	25.7	57.5	54.1	45.0	52.5	5.2	18.3	17.6	17.2	21.3	1.8	8.9	4.7
Spain	20.0	27.0	30.4	27.8	68.6	53.9	42.2	50.9	6.2	14.8	15.9	15.0	5.2	4.3	11.5	6.3
Sweden	32.4	22.9	27.8	24.4	45.0	55.4	47.9	53.2	7.9	19.9	19.4	19.4	14.7	1.8	5.0	3.0
UK	28.0	31.6	23.4	28.0	59.1	49.9	47.8	49.1	8.9	16.4	20.9	18.3	4.1	2.0	7.8	4.6

Source: BACI, authors' calculations. EU10 are the new member states. The stages of production are based on the Broad Economic Categories (BEC).

Table A8: Structure of EU member states imports by stage of production from EU10, EU15 and extra-EU -- 2005

	Consumer goods				Intermediate goods				Capital goods				Primary products			
	.0EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All
EU25	**29.1**	**33.2**	**30.4**	**32.0**	**52.9**	**48.3**	**43.5**	**47.0**	**15.1**	**16.2**	**21.8**	**18.0**	**2.9**	**2.3**	**4.2**	**3.0**
Austria	27.0	31.1	32.9	31.1	54.5	48.8	41.4	47.9	11.8	17.9	23.6	18.5	6.7	2.2	2.0	2.6
Belgium-Lux	23.0	39.4	28.9	36.0	61.9	45.2	44.8	45.5	13.5	10.5	15.3	11.9	1.7	5.0	11.0	6.6
Cyprus	35.3	45.7	22.8	35.0	30.5	28.6	24.7	26.9	19.3	24.1	50.7	36.1	14.9	1.6	1.9	2.1
Czech Rep.	29.2	19.2	24.8	21.8	61.2	62.3	47.4	58.7	7.0	17.7	25.5	18.1	2.7	0.8	2.3	1.4
Denmark	37.7	31.6	41.6	34.4	42.3	44.3	34.2	41.7	15.4	22.5	21.8	21.9	4.6	1.6	2.5	2.0
Estonia	37.5	25.4	24.3	26.6	45.3	51.9	51.1	50.8	14.4	21.3	19.5	19.9	2.9	1.4	5.2	2.8
Finland	23.1	31.6	24.2	28.3	36.0	46.2	47.1	45.6	35.7	19.5	21.1	21.6	5.2	2.7	7.6	4.6
France	32.7	32.6	34.6	33.2	48.8	50.3	41.9	47.6	17.7	15.8	21.8	17.7	0.8	1.3	1.8	1.5
Germany	24.7	31.0	28.7	29.4	60.3	53.8	43.6	50.9	12.8	13.1	24.8	17.3	2.2	2.2	2.9	2.4
Greece	45.0	47.1	34.0	42.8	28.2	36.1	33.4	35.0	15.7	15.3	26.8	19.0	11.0	1.5	5.8	3.2
Hungary	35.8	19.9	14.0	19.9	52.5	61.9	56.4	59.3	10.2	17.3	28.2	19.6	1.6	1.0	1.4	1.1
Ireland	26.2	36.6	21.9	31.0	44.1	44.3	48.8	46.0	29.1	18.0	28.3	22.0	0.6	1.1	0.9	1.1
Italy	37.1	35.0	32.7	34.4	45.6	46.0	47.8	46.6	12.6	15.9	15.1	15.5	4.7	3.1	4.4	3.6
Latvia	43.0	32.9	27.6	34.6	41.1	38.2	48.3	41.4	12.4	27.4	16.6	20.6	3.5	1.5	7.5	3.4
Lithuania	37.5	27.0	31.3	30.5	46.9	44.6	45.4	45.3	13.3	26.6	20.1	21.9	2.3	1.8	3.2	2.3
Malta	27.3	32.0	11.2	22.6	22.6	53.0	33.9	44.1	6.9	13.8	54.4	31.9	43.3	1.2	0.5	1.3
Netherlands	29.8	32.3	22.6	28.0	35.3	48.4	45.1	46.4	31.4	16.0	28.5	22.0	3.5	3.4	3.9	3.6
Poland	24.7	19.6	24.1	21.3	59.1	60.5	46.3	56.6	13.6	18.4	26.4	20.1	2.6	1.5	3.2	2.1
Portugal	23.3	36.4	22.5	33.5	56.0	45.7	52.3	47.1	18.0	15.3	16.8	15.6	2.7	2.7	8.3	3.8
Slovakia	30.5	17.5	23.0	22.5	56.5	62.8	48.4	57.2	10.4	18.5	26.5	18.6	2.6	1.2	2.0	1.8
Slovenia	29.7	24.3	29.3	25.8	54.0	56.9	50.4	55.3	8.4	16.8	13.7	15.4	7.9	2.0	6.6	3.5
Spain	25.7	33.2	38.7	34.6	49.2	45.6	36.5	43.1	20.3	18.3	20.3	18.9	4.7	3.0	4.5	3.5
Sweden	28.9	29.4	33.3	30.4	49.9	50.0	43.6	48.3	16.1	19.1	20.4	19.3	5.1	1.6	2.7	2.1
UK	37.6	39.0	34.6	37.2	40.3	40.2	41.9	40.9	21.0	19.6	17.6	18.9	1.1	1.2	5.9	3.1

Source: BACI, authors' calculations. EU10 are the new member states. The stages of production are based on the Broad Economic Categories (BEC).

Table A9: Changes in the structure of EU Member State Imports by stage of production (BEC) – 1995-2005

	Consumer goods				Intermediate goods				Capital goods				Primary products			
	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All	EU10	EU15	extra-EU	All
EU25	**-0.9**	**2.4**	**3.7**	**2.5**	**-3.6**	**-2.4**	**-3.2**	**-2.7**	**6.6**	**0.7**	**2.7**	**1.6**	**-2.0**	**-0.6**	**-3.2**	**-1.4**
Austria	0.3	-2.8	1.1	-2.0	-1.5	1.5	-3.6	0.5	3.7	1.3	4.3	1.8	-2.4	0.0	-1.9	-0.3
Belgium-Lux	-5.7	8.7	7.9	7.7	3.6	-6.8	-6.5	-6.4	4.9	-0.5	4.6	1.1	-2.8	-1.5	-6.0	-2.4
Cyprus	25.9	14.4	-14.1	1.7	4.8	-11.6	-1.0	-6.1	-43.2	-2.5	17.1	5.1	12.5	-0.3	-2.0	-0.8
Czech Rep.	6.2	-3.0	-0.6	-1.0	-3.9	9.6	8.7	6.3	-2.1	-6.1	-1.7	-3.8	-0.2	-0.6	-6.4	-1.4
Denmark	-9.2	3.7	4.8	3.8	-1.6	-7.3	-3.9	-6.3	9.2	3.8	1.8	3.2	1.6	-0.3	-2.7	-0.7
Estonia	-7.3	-5.7	-7.1	-5.4	5.6	1.4	6.7	2.5	7.6	4.5	2.6	3.6	-5.9	-0.2	-2.2	-0.7
Finland	-6.1	7.4	6.7	6.1	-9.3	-7.4	-5.6	-7.4	22.2	-1.0	-0.1	1.1	-6.8	1.0	-1.0	0.2
France	-7.8	0.4	4.8	1.6	-2.5	0.5	-3.6	-0.9	11.6	-0.6	1.4	0.3	-1.2	-0.3	-2.6	-1.0
Germany	-7.8	-3.9	-2.1	-3.9	4.6	4.5	-1.3	2.7	3.9	-0.6	5.6	2.0	-0.7	0.0	-2.2	-0.8
Greece	15.7	7.3	5.4	6.1	-16.8	-7.1	-9.2	-8.1	-4.0	1.3	5.7	3.1	5.2	-1.6	-1.9	-1.1
Hungary	17.7	-1.5	-11.0	-2.1	-19.0	4.8	4.5	2.5	1.6	-2.7	11.5	1.2	-0.3	-0.6	-5.0	-1.6
Ireland	3.4	5.4	10.1	7.2	-12.5	-8.2	-6.1	-7.5	15.3	3.8	-3.3	1.1	-6.3	-0.9	-0.8	-0.9
Italy	10.3	5.9	7.9	6.6	-12.5	-5.6	-4.4	-5.4	7.8	1.7	1.3	1.7	-5.6	-2.0	-4.8	-2.9
Latvia	5.8	-1.2	3.3	2.8	-9.7	-2.1	-9.9	-5.7	3.4	4.1	3.7	2.5	0.6	-0.9	2.9	0.4
Lithuania	-5.6	-5.5	12.2	1.2	4.8	0.6	-10.3	-2.7	1.3	5.9	8.8	6.1	-0.5	-1.0	-10.7	-4.6
Malta	-8.0	7.6	-4.8	0.7	-22.8	-6.2	-10.7	-10.6	-9.0	-1.8	17.7	10.0	39.8	0.4	-2.3	-0.1
Netherlands	-3.6	2.6	-1.0	0.3	-20.1	-2.1	-1.6	-2.9	24.9	-0.3	6.9	4.1	-1.2	-0.1	-4.2	-1.5
Poland	6.2	-0.1	-4.8	-0.5	-5.3	2.3	6.7	2.3	5.8	-1.9	7.1	0.9	-6.7	-0.3	-9.0	-2.7
Portugal	8.4	5.1	-3.3	3.5	7.2	-3.6	6.8	-1.4	-16.7	-0.7	5.5	0.4	1.1	-0.8	-9.0	-2.5
Slovakia	5.5	-2.2	1.9	0.5	-3.7	8.9	5.4	2.7	-1.4	-6.5	2.3	-1.3	-0.4	-0.3	-9.7	-2.0
Slovenia	13.7	-1.5	0.7	0.1	-3.5	2.8	5.4	2.9	3.3	-1.5	-3.9	-1.8	-13.5	0.2	-2.2	-1.2
Spain	5.8	6.2	8.3	6.7	-19.3	-8.3	-5.7	-7.8	14.1	3.5	4.4	3.9	-0.5	-1.4	-7.0	-2.8
Sweden	-3.5	6.4	5.6	6.0	4.9	-5.4	-4.3	-4.9	8.2	-0.7	1.0	-0.2	-9.6	-0.3	-2.3	-0.9
UK	9.6	7.3	11.2	9.2	-18.8	-9.7	-5.9	-8.3	12.2	3.2	-3.4	0.6	-3.0	-0.8	-1.9	-1.5

Source: BACI, authors' calculations. EU10 are the new member states. The stages of production are based on the Broad Economic Categories (BEC).

Table A10: Share of each exporting region in intermediate goods imports by technological level and by member state, 2005

	HT			MT			LT			RB			PP		
	EU10	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**
EU25	**4.3**	**47.9**	**47.9**	**8.6**	**67.1**	**24.4**	**9.7**	**67.6**	**22.8**	**2.3**	**49.8**	**47.9**	**1.7**	**48.1**	**50.2**
Austria	5.0	62.0	33.0	10.6	73.7	15.7	12.9	73.1	14.1	5.9	61.7	32.4	4.7	56.5	38.8
Austria	5.0	62.0	33.0	10.6	73.7	15.7	12.9	73.1	14.1	5.9	61.7	32.4	4.7	56.5	38.8
Belg-Lux	2.9	64.2	32.9	4.9	72.6	22.6	5.3	73.1	21.6	14.4	68.9	16.8	8.4	76.9	14.7
Cyprus	1.1	60.2	38.7	3.1	65.2	31.7	4.2	48.6	47.2	1.9	63.0	35.1	1.1	84.6	14.3
Czech Rep	3.2	51.2	45.7	13.4	73.0	13.6	16.9	71.6	11.5	21.2	60.1	18.8	11.6	76.1	12.4
Denmark	4.0	61.8	34.3	5.0	78.2	16.9	7.7	76.2	16.2	7.2	74.6	18.2	3.9	50.8	45.3
Estonia	6.0	61.5	32.6	9.4	63.8	26.8	13.8	57.5	28.8	15.7	42.4	41.9	21.7	45.0	33.3
Finland	12.8	28.7	58.5	5.3	71.5	23.2	9.7	71.4	19.0	4.9	53.1	42.0	2.9	45.1	52.0
France	3.6	51.9	44.4	4.2	72.8	23.0	4.8	78.8	16.5	3.7	67.6	28.7	2.6	47.7	49.7
Germany	6.4	42.0	51.6	19.2	54.3	26.6	18.5	58.3	23.2	9.5	61.2	29.4	7.8	67.3	24.9
Greece	3.5	75.0	21.5	1.8	75.2	23.0	2.5	60.7	36.8	3.8	55.5	40.8	2.0	67.5	30.4
Hungary	6.1	47.3	46.6	8.6	71.2	20.3	13.6	71.0	15.4	14.9	61.1	24.1	15.5	72.6	11.9
Ireland	1.1	40.3	58.5	1.6	66.0	32.4	2.7	79.7	17.6	1.7	69.8	28.5	1.0	56.4	42.7
Italy	3.3	63.1	33.6	5.6	66.9	27.5	6.3	55.6	38.1	4.9	60.0	35.1	5.5	58.8	35.7
Latvia	18.6	60.8	20.6	28.1	47.6	24.3	31.1	43.2	25.7	30.3	38.0	31.8	16.3	45.9	37.8
Lithuania	14.1	53.8	32.1	19.6	59.9	20.5	26.4	49.2	24.4	29.7	36.5	33.8	10.4	46.1	43.5
Malta	0.2	63.0	36.8	0.8	66.0	33.2	1.7	66.8	31.5	0.9	71.5	27.7	0.7	95.8	3.5
Netherlands	2.1	30.2	67.7	3.4	65.1	31.6	5.0	75.5	19.5	2.2	55.7	42.2	2.4	45.8	51.8
Poland	5.4	43.2	51.4	8.7	73.1	18.2	11.8	72.3	15.9	11.8	67.2	21.0	7.4	48.6	44.1
Portugal	4.4	87.0	8.7	3.1	84.4	12.6	2.6	80.4	17.0	1.1	59.5	39.5	2.3	55.2	42.4
Slovakia	10.7	33.6	55.7	22.5	59.7	17.9	33.6	47.4	19.0	36.3	42.4	21.2	32.6	47.0	20.4
Slovenia	4.9	74.9	20.2	5.9	79.8	14.3	8.8	74.9	16.3	14.3	59.1	26.6	9.6	66.3	24.1
Spain	2.8	66.7	30.6	4.2	77.5	18.4	2.8	73.0	24.2	2.4	66.3	31.3	2.1	36.5	61.4
Sweden	10.9	62.1	27.0	6.8	71.9	21.3	7.0	73.6	19.5	5.9	64.4	29.8	5.7	77.3	17.0
UK	2.1	42.5	55.5	3.6	62.8	33.7	5.0	62.5	32.4	3.3	56.9	39.8	3.9	52.8	43.4

Source: BACI, authors' calculations. EU10 are the new member states. The stages of production are based on the Broad Economic Categories (BEC).

Table A11: Changes (1995-2005) in the share of each export region in intermediate goods imports by technology category

	HT			LT			MT			RB			PP		
	EU10	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**
EU25	**2.1**	**0.0**	**-2.1**	**3.9**	**-6.7**	**2.8**	**5.0**	**-5.2**	**0.2**	**1.6**	**-3.5**	**2.0**	**2.0**	**-2.7**	**0.7**
Austria	-0.6	2.8	-2.2	4.4	-5.3	0.9	4.9	-4.9	0.0	5.1	-4.2	-1.0	0.8	-7.4	6.6
Belg-Lux	2.2	-1.5	-0.7	3.5	-9.6	6.2	3.6	-7.6	4.0	0.6	-2.0	1.4	0.1	5.9	-6.0
Cyprus	0.5	2.3	-2.7	0.6	-10.8	10.2	1.3	7.7	-9.1	-0.9	-17.4	18.3	0.0	7.0	-7.1
Czech Rep	-2.3	-17.7	19.9	-9.4	5.5	3.8	-4.5	0.3	4.2	-6.5	2.5	4.0	2.6	15.6	-18.2
Denmark	3.3	-10.4	7.1	4.7	-7.3	2.6	3.0	-2.0	-1.0	3.9	-2.8	-1.1	-1.0	8.7	-7.7
Estonia	4.7	-21.3	16.6	6.4	-15.6	9.1	5.0	-10.3	5.3	9.4	-26.4	17.0	13.8	6.1	-19.9
Finland	9.2	-7.7	-1.4	4.3	-8.6	4.3	3.5	0.6	-4.1	1.5	-11.3	9.9	-1.4	-21.8	23.2
France	2.0	3.6	-5.6	3.4	-5.1	1.7	3.2	-3.8	0.6	1.7	-3.2	1.5	2.3	-9.1	6.8
Germany	3.4	5.4	-8.8	7.0	-9.2	2.2	11.3	-9.6	-1.8	2.6	-1.9	-0.7	3.9	5.3	-9.2
Greece	3.0	0.0	-3.0	-0.1	-16.5	16.6	0.3	-2.3	1.9	1.1	-6.5	5.5	1.4	-11.9	10.5
Hungary	3.7	-26.3	22.6	5.2	-8.3	3.2	2.2	-3.6	1.4	-0.3	6.9	-6.6	14.2	27.8	-42.0
Ireland	0.9	-0.7	-0.3	1.7	-4.4	2.7	0.5	-0.4	-0.1	0.7	-1.1	0.4	0.2	4.1	-4.2
Italy	-3.0	-2.4	5.4	1.8	-9.0	7.3	3.1	-7.6	4.5	1.1	-3.8	2.7	4.2	-3.5	-0.7
Latvia	11.5	5.7	-17.3	10.1	-10.6	0.5	16.2	-3.7	-12.6	6.3	0.8	-7.1	6.8	-28.1	21.3
Lithuania	2.0	-1.7	-0.3	9.0	3.9	-12.9	8.2	12.1	-20.3	13.2	1.0	-14.2	7.9	30.5	-38.3
Malta	0.1	-11.4	11.3	0.3	-9.3	9.0	0.1	-12.4	12.3	-1.0	-0.3	1.3	-4.0	13.9	-9.9
Netherlands	1.4	-14.2	12.9	2.9	-6.4	3.5	1.6	-6.1	4.5	-0.1	-7.9	8.1	-3.2	-11.8	15.0
Poland	3.5	-19.8	16.2	3.3	-7.4	4.1	1.1	-4.1	2.9	-0.1	-1.2	1.3	3.9	-27.7	23.8
Portugal	4.0	27.6	-31.6	1.9	-2.1	0.2	2.4	-3.6	1.2	0.7	-19.0	18.3	2.1	9.7	-11.8
Slovakia	-14.6	-16.4	31.0	-26.1	14.0	12.1	-14.0	5.1	8.9	-7.3	7.5	-0.3	14.1	-24.1	10.0
Slovenia	1.9	10.8	-12.7	-0.6	-3.4	4.0	0.2	-0.2	0.0	3.4	-6.0	2.7	5.5	4.0	-9.5
Spain	1.3	5.1	-6.4	1.4	-5.6	4.2	2.6	-3.8	1.2	1.3	-7.8	6.5	1.2	-3.8	2.6
Sweden	9.9	-3.0	-6.9	3.8	-6.1	2.3	5.4	-6.2	0.8	1.3	-7.5	6.2	3.8	1.6	-5.4
UK	1.4	4.8	-6.2	2.5	-2.8	0.3	2.2	-0.8	-1.4	0.9	-1.8	0.9	3.5	5.1	-8.6

Source: BACI, authors' calculations. EU10 are the new member states. The stages of production are based on the Broad Economic Categories (BEC).

Table A12: Share of each export region in intermediate goods imports by market level and by member state

	Low			Mid			Up		
	EU10	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**	**EU10**	**EU15**	**extra-EU**
EU25	**9,0**	**55,1**	**36,0**	**7,2**	**68,2**	**24,6**	**5,1**	**64,4**	**30,4**
Austria	20,7	59,5	19,9	9,7	73,3	17,0	8,4	73,1	18,5
Belgium-Lux	2,9	68,1	29,0	3,4	75,5	21,1	4,8	70,4	24,8
Cyprus	3,3	39,5	57,2	2,1	65,3	32,6	3,0	70,2	26,8
Czech Rep.	15,8	65,5	18,7	13,6	73,4	13,0	9,2	65,0	25,8
Denmark	9,0	59,1	31,9	4,5	82,0	13,5	3,0	76,5	20,5
Estonia	14,6	44,3	41,2	11,8	65,7	22,5	7,6	62,7	29,8
Finland	8,9	57,6	33,6	4,7	60,0	35,3	7,1	60,8	32,1
France	6,0	60,5	33,5	3,3	71,9	24,8	2,0	70,7	27,3
Germany	18,6	48,1	33,3	16,2	60,6	23,2	9,3	53,4	37,3
Greece	2,4	56,8	40,9	1,9	68,8	29,4	2,9	75,6	21,5
Hungary	14,1	50,0	35,9	7,9	77,0	15,1	7,4	70,4	22,2
Ireland	1,2	48,9	49,9	1,2	59,9	39,0	2,0	61,9	36,1
Italy	6,4	46,7	46,9	4,6	65,1	30,3	3,1	70,2	26,8
Latvia	28,5	26,4	45,1	24,3	50,6	25,2	18,5	59,3	22,3
Lithuania	26,6	24,3	49,2	18,2	61,7	20,1	17,4	70,3	12,4
Malta	0,9	53,8	45,3	0,3	49,9	49,9	0,7	75,0	24,3
Netherlands	3,8	50,5	45,7	2,7	63,0	34,4	2,5	55,9	41,6
Poland	10,8	61,9	27,3	9,5	76,2	14,3	7,4	71,4	21,2
Portugal	1,3	74,6	24,0	4,8	79,0	16,2	1,3	83,7	15,0
Slovakia	31,2	38,3	30,6	21,8	64,3	13,9	23,9	60,1	16,1
Slovenia	9,8	68,3	21,8	10,1	70,2	19,6	8,6	77,7	13,7
Spain	3,5	65,5	31,0	4,5	76,1	19,4	1,7	77,6	20,7
Sweden	12,0	61,4	26,7	5,7	76,4	18,0	5,1	72,7	22,3
UK	3,2	49,3	47,5	3,1	64,7	32,3	2,8	54,9	42,3

Source: BACI, authors' calculations. EU10 are the new member states. The stages of production are based on the Broad Economic Categories (BEC).

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CEPII
9, RUE GEORGES PITARD, 75740 PARIS CEDEX 15
SYLVIE HURION – PUBLICATIONS
TÉL : 01 53 68 55 14 - FAX : 01 53 68 55 04
sylvie.hurion@cepii.fr

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