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**Globalisation
and the European Union:
Which Countries are Best
Placed to Cope?**

**David Rae,
Marte Sollie**

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by
David Rae and Marte Sollie

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ABSTRACT/RÉSUMÉ

Globalisation and the European Union: which countries are best placed to cope?

Globalisation can be a threat or an opportunity, depending on a country's trade mix and its economic and regulatory structure. This paper assesses which EU countries are most exposed to globalisation using, among other indicators, measures of revealed comparative advantage. It then looks at which countries are best placed to cope. This depends on labour and product market flexibility, the average skill level of the workforce, the innovation framework, the quality of the education system and the level and type of support, such as job-search assistance, that is given to those who are harmed by globalisation.

This paper relates to the 2007 Economic Survey of the European Union (www.oecd.org/eco/surveys/eu).

Key words: Globalisation; trade; labour market flexibility; regulation.

JEL classifications: E60; F10; F43.

Mondialisation et Union européenne : quels sont les pays les mieux placés pour y faire face ?

La mondialisation peut être une menace ou une opportunité, selon la composition des échanges des pays, leur structure économique et leur réglementation. Cet article évalue les pays de l'UE qui sont les plus exposés à la mondialisation en utilisant, parmi d'autres indicateurs, des mesures des avantages comparatifs révélés. Il examine ensuite quels sont les pays les mieux placés pour faire face à ce défi. Ceci dépend de la flexibilité des marchés du travail et des produits, du niveau de qualification moyenne de la main-d'œuvre, du cadre concernant l'innovation, de la qualité du système éducatif et des niveaux et types de soutien, comme les aides à la recherche d'un emploi, qui sont mises à la disposition de ceux qui ont subi des préjudices à cause de la mondialisation.

Ce document se rapporte à l'Étude économique de l'Union Européenne 2007 (www.oecd.org/eco/etudes/ue).

Mots clés : Mots clés : Mondialisation ; commerce ; flexibilité du marché du travail ; réglementation.

Classification JEL : E60 ; F10 ; F43.

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GLOBALISATION AND THE EUROPEAN UNION: WHICH COUNTRIES ARE BEST PLACED TO COPE?

David Rae and Marte Sollie*

Introduction and main findings

Globalisation is a long-standing phenomenon that has accelerated spectacularly in recent years. Geopolitics and technology have come together to generate a substantial shift in consumption and production patterns across the globe. The re-emergence of some large developing countries, such as China, India and the former Soviet bloc, has lifted world demand, especially for raw materials and capital goods. It has also meant that over the past decade around a billion workers have joined the global marketplace. The importance of these countries to the world economy comes not just through sheer weight of numbers, though population clearly matters. It is also because China in particular is an unusually open economy for its size. On the technology side, better communication tools and falling transport costs have expanded the range of goods and services that can be traded (“tradability” is not a black-and-white concept; a more precise statement is that more goods and services have their prices largely determined in world rather than local markets). Technologies have also become more global in the sense that similar capital goods are available worldwide. The combination of a greater supply of cheap labour alongside technologies that facilitate trade has led to a splintering of production lines across the globe.

This paper looks at the impact of globalisation on the European Union. It assesses which countries are most exposed to these forces and which ones are best able to cope. Overall, the EU has done well out of globalisation so far. By one estimate, at least a fifth of Europe’s post-war income gains can be attributed to globalisation (Denis *et al.*, 2006). But there are winners and losers across countries and within each country, and even if a country benefits overall the adjustment costs cannot be ignored. This is one of the reasons why the gains from trade are being questioned more this time, since globalisation nowadays is increasingly based on changing patterns of specialisation coming from differences in factor endowments rather than the intra-industry trade deepening that was characteristic of the post-war period. This type of globalisation has greater adjustment costs and concentrates the pain more narrowly.

The big winners from globalisation are consumers as they get access to a wider range of less expensive products. But most consumers are also workers, and industries in some countries are more exposed than others. The main findings of this paper are as follows:

- For most Western European economies, globalisation is more of an opportunity than a threat because their exports do not compete head-to-head with exports from the emerging countries. For example, the EU15 is strong on high-value-added engineering, pharmaceuticals and services, which are not strong points for the dynamic Asian exporters (at least, not yet). But there are some exceptions among the more developed EU economies: Italy, for example, has an export mix that competes with rather than is complementary to dynamic Asia.

* This paper is based on and provides some additional background material for Chapter 1 of the 2007 *OECD Economic Survey of the European Union*. The authors would like to thank their colleagues in the Economics Department, especially Peter Hoeller, Andrew Dean and Val Koromzay. They would also like to thank the staff of the European Economics Department of Goldman Sachs for their technical advice. Isabelle Duong provided invaluable research and production assistance. Any errors are ours alone.

- Southern and Eastern European economies are more exposed because they are competing for similar businesses, namely the low-wage assembly operations of global production chains. They are also vulnerable because they have a large pool of unskilled labour that is harder to shift into high-value-added, high-tech products.
- Internal trade in the EU is more similar to trade from the developing world in the sense that intermediate inputs and semi-finished products make up a large share of trade within the Union. Thus, it is by no means inevitable that intra-European trade will increase over time; it could fall, despite the intention of the single market programme, if the developing world captures a bigger slice of trade in semi-finished products.
- Regardless how exposed they are, countries differ widely in their ability to cope with globalisation. The ability to manage change depends on many factors, including flexibility of labour and product markets, the innovation framework, the education system and the support available to workers who lose their jobs as a result of globalisation. This paper looks at how each country performs in each of these areas, and constructs a synthetic indicator that tries to summarise the information in a single indicator. Northern European countries are very well placed, mainly because of their education levels, their focus on high-tech products and their strong innovation frameworks. Southern and Eastern European countries have a low ability to cope because they score below average on all indicators, but their relatively poor human capital levels have an especially strong influence on their overall ranking. Some Western European countries, such as France and Italy, also have a weak ability to adjust due to weaknesses in their labour and product markets.
- A country that has less ability to cope with the forces of globalisation because of weaknesses in its framework conditions can buy itself out of the problem by making sure wages remain in line with productivity or by importing labour and capital to fill in any shortfalls. Ireland is an example of a country that has thrived on globalisation even though its score on the “ability to cope” indicator is not high (reflecting its low average education levels, weak innovation framework and over-regulated utility industries). It has achieved this by attracting skills from abroad through high immigration and by keeping its wages in check. In this sense, countries with less ability to adjust to the forces of globalisation are also the ones that are more susceptible to pricing themselves out of the global market through excessive wage increases. But the flip-side of this argument is that income levels in countries such as Ireland could be higher still if they could improve their basic framework conditions.
- Building a flexible economy in order to cope with globalisation does not come at the cost of abandoning Europe’s “social model.” Regulation does not buy security; in fact, the opposite appears to be true. Several Scandinavian countries have shown that flexible economies can be combined with low unemployment and high levels of social protection.

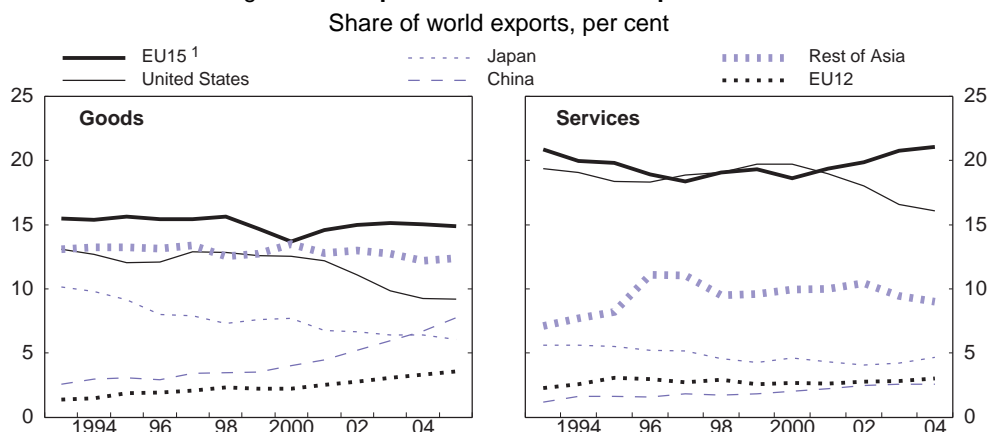
Export trends

Unlike the United States and Japan, the EU has more or less maintained its market share of world exports over the past 15 years (Figure 1). Market shares for the EU15 have been fairly stable, while the EU12 has increased its share of world trade in goods but has not made significant progress in services. The rise in China is the most striking feature of Figure 1 and it has now overtaken Japan in world goods trade.

The destination of European exports has changed in several respects (Figure 2). While the share of exports going to Europe’s biggest markets – the United States and the non-EU OECD – have not shown any noticeable trend, exports to China and to the EU’s European neighbours have become more important.

The increased trade with China has come at the expense of other dynamic Asian countries, so to some extent reflects trade diversion within Asia.

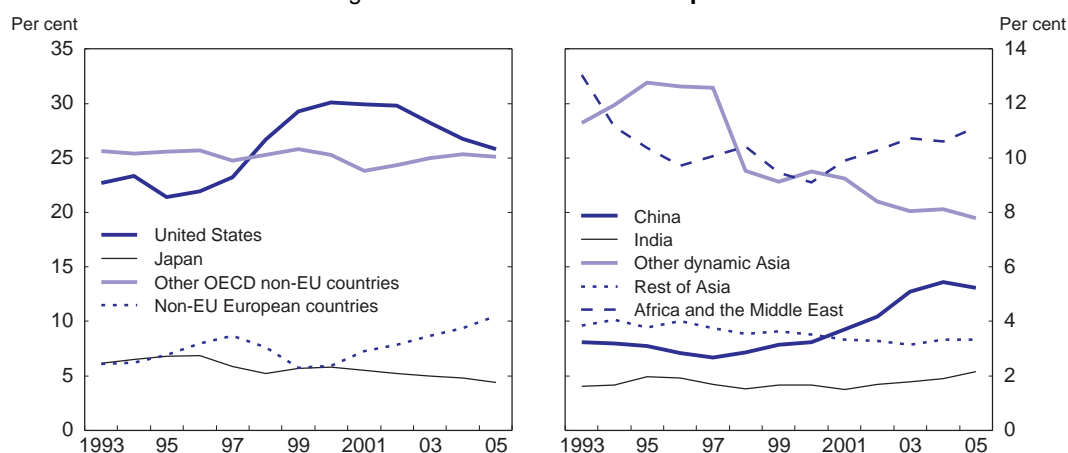
Figure 1. **Europe has maintained its export share**



1. EU15 excludes intra-region trade.

Source: UN, Comtrade database, IMF and OECD calculations.

Figure 2. **Destination of EU27 exports**

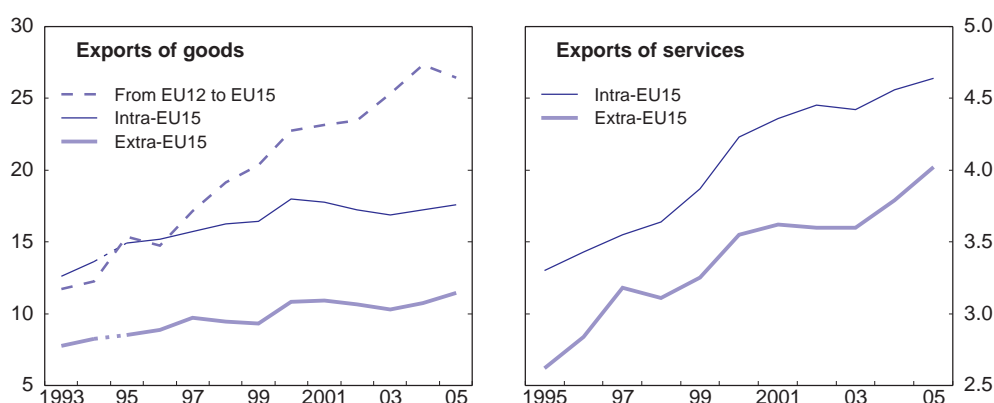


Source: UN, Comtrade database, IMF and OECD calculations.

Internal trade is greater than external trade, though the gap has declined to some extent since the early 1990s (Figure 3). However, trade in services remains low, partly reflecting the EU's fragmented national markets for services (OECD, 2007).

Despite the rhetoric and the attempts by some member states to protect "their" national champions, Europe's major export companies are becoming increasingly "Europeanised" (Box 1). In terms of openness, the 100 largest listed European companies generate a similar share of sales from abroad as do the top-100 US companies.

Figure 3. **Internal trade and external trade**
As a percentage of GDP



Source: Eurostat; UN, Comtrade database, IMF and OECD calculations.

Which countries are most exposed to globalisation?

This section discusses various indicators of the exposure to globalisation: who is facing the most competition from the developing world; who is hooked in to the fastest-growing and/or most profitable industries; who specialises in ICT exports; who is likely to gain the most from outsourcing and lose the most from off-shoring; and who has the most skilled workforces, which presumably are the ones that are most adaptable?

Who is competing head-to-head with China and other emerging economies?

Measuring comparative advantage

Trade is determined in large part by a country's comparative advantage (interpreted broadly, so that for example export subsidies or import restrictions are taken as part of the package). Comparative advantage is not directly observable but Balassa (1965) argued that it can be revealed through actual trade patterns when observed over a long enough period so that out-of-equilibrium behaviour does not substantially distort the estimates. He proposed an index of revealed comparative advantage (RCA) which essentially is just a measure of a country's export share of each commodity compared with the world export shares of that commodity. If $x_{k,i}$ is exports of commodity i from country k , then the (un-normalised) revealed comparative advantage index is:

$$RCA_{k,i}^* = \frac{x_{k,i} / \sum_i x_{k,i}}{x_{w,i} / \sum_i x_{w,i}}$$

where the subscript w refers to the rest of the world, *i.e.* total world trade excluding country k . The RCA is then normalised so that it lies between -1 and $+1$:

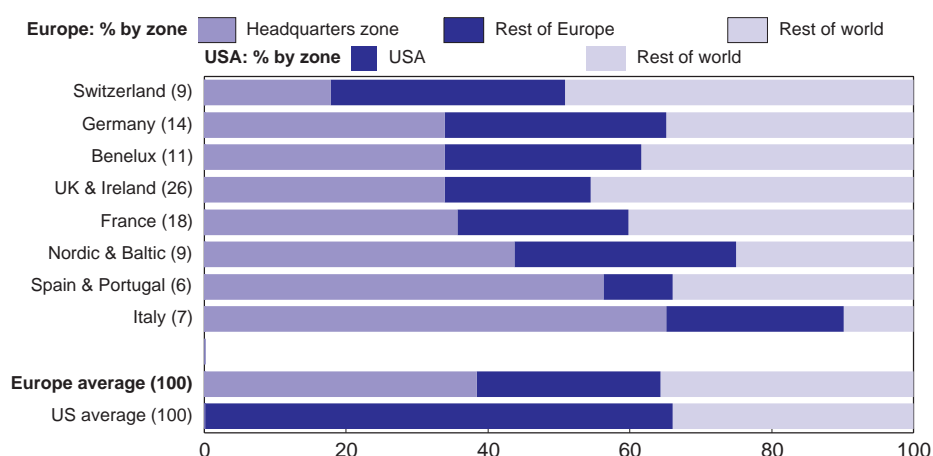
$$RCA_{k,i} = \frac{RCA_{k,i}^* - 1}{RCA_{k,i}^* + 1}$$

Box 1. National or European champions?

Bruegel, a think tank based in Brussels, has looked at how globalised are the largest listed companies in Europe and the United States. They are surprisingly similar. In 2005, the top 100 European companies generated two-thirds of their revenues in Europe and one-third abroad (Figure 4). This is almost identical to the top 100 US firms, which also generate one-third of their revenues abroad. Among the European firms, around 37% of global revenue was generated in the home country and 28% in other EU countries. There are large differences across countries, however. German companies are among the front-runners of both europeanisation and globalisation – *i.e.* they are significant exporters to other EU countries and to the rest of the world. Italian and Spanish companies remain strongly biased towards their home markets. Comparing across sectors, the home bias is lowest for goods such as pharmaceuticals, chemicals and consumer products. The more regulated industries such as banking and telecoms remain predominantly national.

The study also looked at how these patterns have changed since 1997 (for a subset of around half the companies). Interestingly, the increase in globalisation has been almost identical in Europe and the United States. The share of revenues coming from the rest of the world rose from 28 and 29% respectively in 1997 to reach 35% in both regions in 2005. For European companies, europeanisation has been stronger than globalisation. The share of sales generated at home has decreased by around 15 percentage points while the share coming from the rest of Europe has gone up by around 8 percentage points. Once again, the patterns differ across countries. The home bias has decreased in the United Kingdom, Italy, Germany and France by 25, 21, 17 and 12 percentage points respectively. French and Italian companies have tended to europeanise, with the proportion of non-European revenue remaining stable. In Germany and the United Kingdom, europeanisation and globalisation have occurred simultaneously.

Figure 4. Europe Top 100: Average revenue structure by headquarters zone



Source: Véron, N. (2006), "Farewell National Champions", *Bruegel Policy Brief*, Issue 2006/04, June, Figure 4.

The greater the value of the RCA, the greater the *relative* weight that the commodity has in country k 's export basket. An RCA of +1 means that country j is the world's only exporter of that product. A value of -1 means that the country does not export it at all. A value of 0 means that the country's export share is the same as the world trade share.

The analysis is similar to that undertaken by Broadbent *et al.* (2006) except that we look at a broader range of partner countries. But their basic conclusions for the EU are similar to ours. Baumann and di Mauro (2007) contains similar analysis for the euro area.

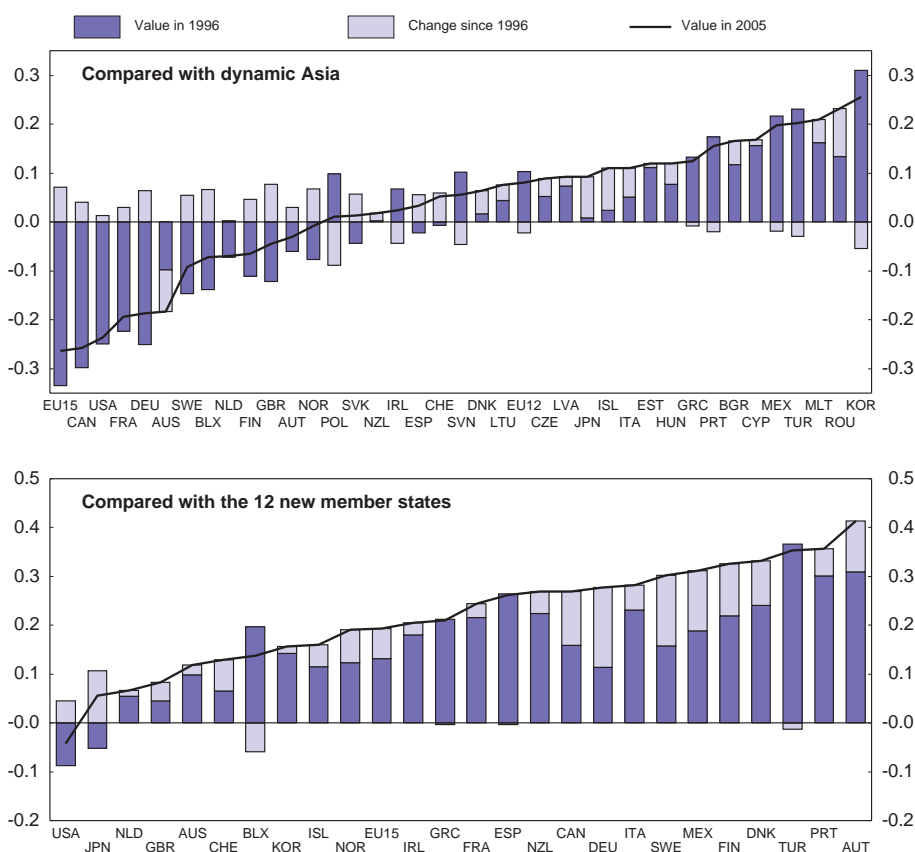
The main results in this paper are based on RCAs that are calculated at a highly disaggregated level, consisting of 1 033 goods categories plus 11 service categories. The calculated RCAs show that the EU15

is strong on engineering, pharmaceuticals and services while the new member states concentrate more on medium and lower-technology manufactures and forestry related products. Annex A provides a more detailed presentation of the RCAs for EU15, EU12 and Dynamic Asia, and the change between 1996 and 2005.

The RCAs can be used to assess which countries are competing more directly with the emerging world. Figure 5 shows the correlation coefficient between a country's RCAs and the equivalent RCAs of dynamic Asia's. Here dynamic Asia refers to China, India, Chinese Taipei, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore and Thailand. It excludes intra-regional trade. The highly disaggregated RCAs are used for this exercise.

The top panel of Figure 5 shows that the export specialisation of most of the high income OECD countries, including most of the EU15, show a low or negative correlation with the RCAs of dynamic Asia. For them, globalisation is more of an opportunity than a threat. In contrast, most of the new member states and the poorer OECD countries have an export mix that is relatively similar to dynamic Asia, and are therefore facing more direct competition. But several of the EU15 countries, notably Italy, Greece and Portugal, are also in this category mainly because of their reliance on the textile, clothing and leather industries. Over time, they need to shift out of these industries or become niche players in the higher value-added segments, such as luxury or brand-name goods.

Figure 5. Trade specialisation
Rank correlation coefficient of RCAs¹



1. The revealed comparative advantage index is calculated across 1 042 categories of goods and services. The EU aggregates exclude intra-regional trade.

Source: UN, Comtrade database, IMF and OECD calculations.

By this measure, most OECD countries have become more exposed since 1996 as Asian companies have moved up the value-added chain. The increase in the correlation of RCAs is largest for the mainly richer countries that were least exposed in 1996 (*i.e.* those on the left hand side of the chart). However there are exceptions, such as Australia, Ireland and Poland, which have moved away from the exports that Asian companies are now specialising in.

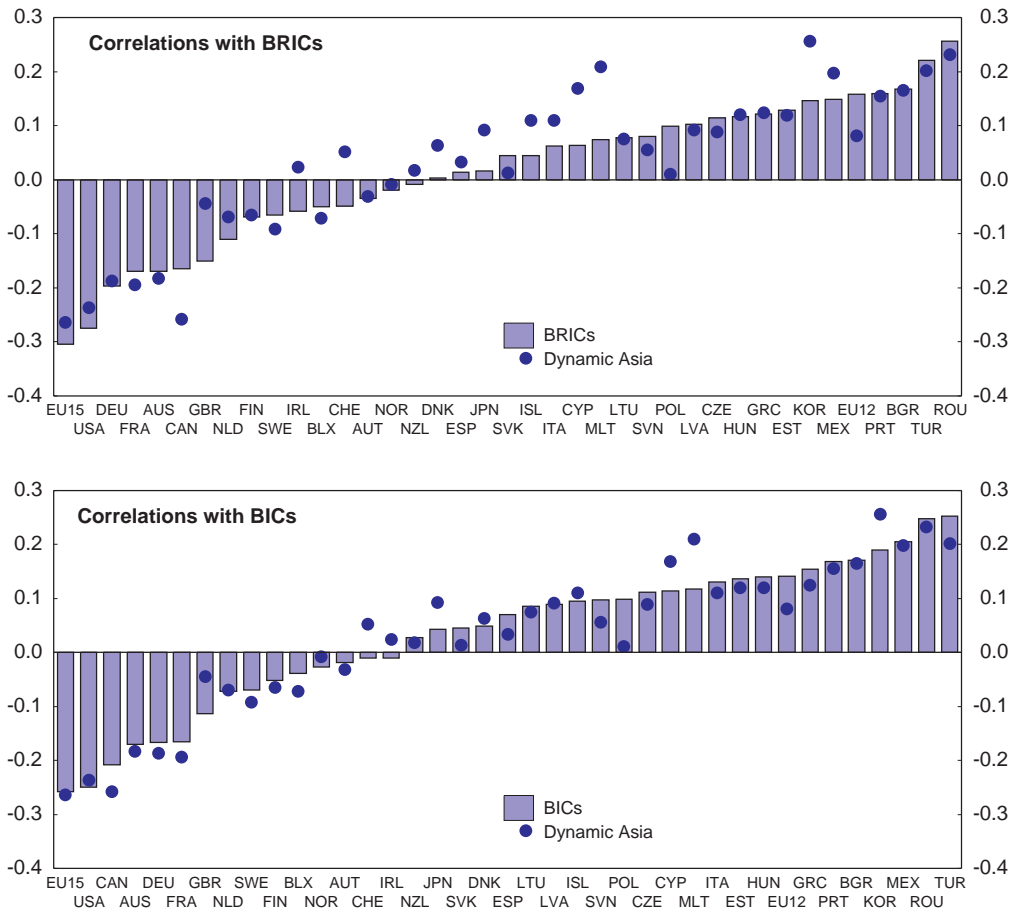
The figure also shows correlations for the EU15 and the EU12 excluding intra-area trade. For the EU15, the correlation with dynamic Asia is more negative than for any of the individual member countries. The reason is that trade between EU15 countries is dominated by intermediate inputs and semi-finished products of the type that dynamic Asia specialises in. One implication of this finding is that it is not inevitable that intra-European trade will increase over time, despite the best intentions of the single market programme. The EU's internal trade could go into reverse as the developing world raises its market share of intermediate and semi-processed products.

The second panel of Figure 5 shows the export correlations compared with the 12 new EU member states rather than compared with dynamic Asia. EU15 countries in particular are affected by a similar process of “internal globalisation”, or europeanisation, as their remaining low-wage manufacturing and medium-skilled service jobs face increased competition from the new member states. Of all the OECD countries, Austria's trade mix is the most similar to the EU12, which aside from its geographical proximity may explain why it is one of the heaviest investors in Eastern Europe. However, it may also reveal a potential weakness of the RCA index. If an Austrian firm sets up a subsidiary in Eastern Europe to manufacture some components of a product, and the subsidiary exports those parts to its parent company to be assembled into a finished product, then this will show up as a high export intensity in that product category in both countries. The company concerned clearly is not competing with its own subsidiary, but other Austrian parts suppliers are. Thus, the interpretation of RCAs can be difficult when transactions among related companies are widespread.

Sensitivity tests

To assess whether this measure of the exposure to globalisation depends on the comparator region, Figure 6 shows the equivalent correlations compared with the BRIC countries (Brazil, India, Russia and China) and the BICs (the BRICs excluding Russia, since a sizeable proportion of Russia's trade is oil and gas, so it is therefore a special case to some extent). For comparison, the figure also shows the correlations with dynamic Asia that were calculated above in Figure 5. In general, the conclusions are broadly similar in terms of exposure to the developing world. However, there is a group of countries – including the UK, Japan, Cyprus, Malta and Korea – that is less exposed to the BRIC countries than it is to dynamic Asia.

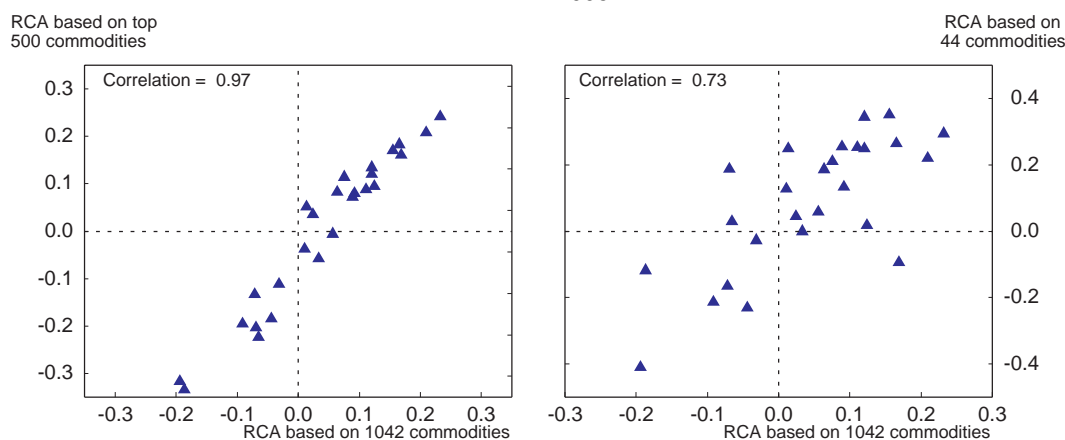
Figure 6. Trade specialisation against BRICs and BICs
Rank correlation coefficient of RCAs,¹ 2005



1. The revealed comparative advantage index is calculated across 1 042 categories of goods and services. The EU aggregates exclude intra-region trade.
Source: UN, Comtrade database, IMF and OECD calculations.

A second sensitivity test is to check whether the results are distorted by outliers that do not reflect the broad patterns of trade. The left panel of Figure 7 calculates RCAs based on the 500 most heavily traded goods and services, which collectively account for 94% of world trade. The results are essentially the same as when RCAs are calculated on the full dataset of 1 042 commodities. The right-hand panel compares RCAs calculated at a much higher level of aggregation, namely 44 goods and services. The correlation between the aggregated and disaggregated RCAs is high (0.73), though the assessment for a handful of countries is modified to some extent. These are usually small countries that have a low level of export diversification, and therefore are more sensitive to the level of aggregation.¹ Nonetheless, the two panels combined suggest that the earlier conclusions are quite robust. To a large extent this reflects the fact that we calculate *rank* correlation coefficients, and these will be less affected by spurious data or outliers.

Figure 7. Comparison of RCA based on disaggregated and aggregated data
2005



Source: UN, Comtrade database and OECD calculations.

A third test is to compare the stability of measures across time since the graphs typically show a snapshot based on exports for a single year. Table 1 shows that the RCAs based on exports for 2003 or 2004 are very highly correlated with those based on 2005 exports.

Table 1. Correlations of RCAs in different years

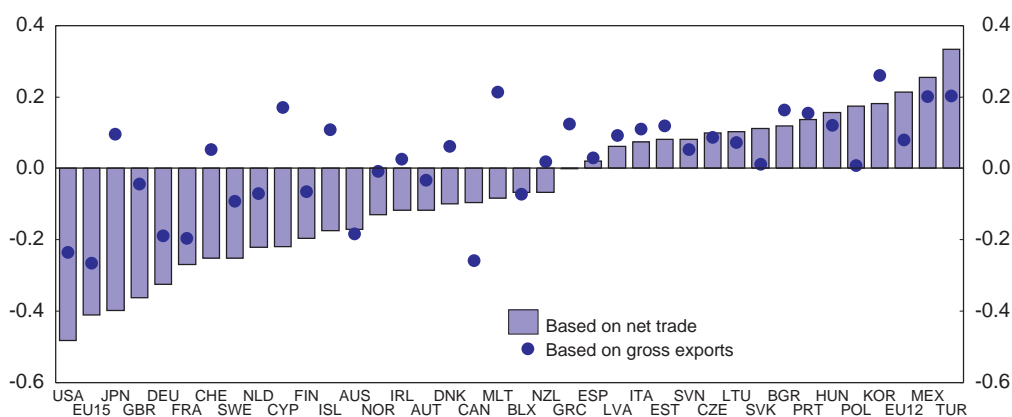
	Based on exports for these years:		
	2003 compared with 2005	2004 compared with 2005	Average 2003-05 compared with 2005
EU	0.97	0.95	0.99
EU12	0.96	0.91	0.97
EU15	0.97	0.95	0.99

Net trade measures

Up to this point, the analysis has been based on total exports for each country. A potential drawback is that it does not distinguish between products in which a significant amount of value is added locally before exporting compared with the increasingly common import-export trade where semi-finished products are imported, improved slightly and then re-exported to another part of the production chain. In the latter type of trade, a country may export a semi-finished product to China, for instance, then China exports it back slightly improved, and this could show up as that country “competing” in the same export products as China, whereas in fact it is in collaboration rather than competition.

One way to tackle this problem is to calculate RCA indices based on *net* trade in each commodity rather than total exports. This is the approach taken by Havik and McMorrow (2006), for example. The results of such an exercise are shown in Figure 8. The differences between estimated exposure based on net trade versus gross trade are large for some countries. Most of the main industrialised countries are less exposed to dynamic Asia when the analysis is done on net trade. This is to be expected since trade in semi-finished products has a significantly lower influence in this measure whereas the weight on natural resources for example will be higher. There are some exceptions among the bigger countries however. For example, on this measure Canada is more exposed to dynamic Asia largely because of its timber and oil resources. For those countries on the right-hand-side of the chart, which are predominately the new member states, the picture is fairly consistent regardless whether net trade or gross exports is used.

Figure 8. **RCA correlation based on net trade**
RCA relative to dynamic Asia, 2005



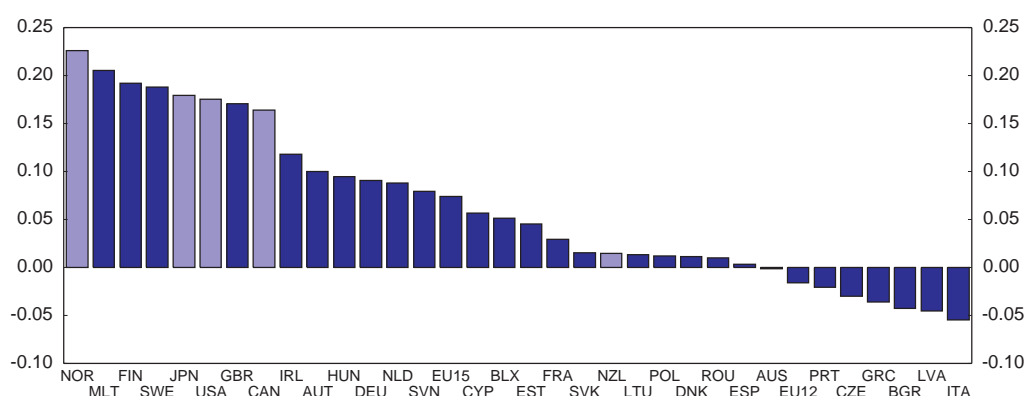
Source: UN, Comtrade database, IMF and OECD calculations.

The net trade measure has the potentially serious drawbacks of, firstly, putting zero weight on two-way trade flows even though they are an element of the international competition that countries are facing today, and secondly under-weighting industries where intra-industry trade is important. For example, Germany is both an exporter and importer of cars, and looking at net exports of cars may understate the importance of that industry to the country. In addition, the more competition that Germany's car manufacturers face from abroad, and presumably therefore the more imports Germany buys from those competitors, the *lower* the RCA measure based on net trade becomes. This is counter-intuitive. To sum up, both indicators are imperfect and their defects need to be borne in mind.

Who specialises in the fastest growing industries?

Another way to look at exposure to globalisation is to ask which countries specialise in the fastest growing sectors. For each country, Figure 9 shows the correlation between its RCAs and the growth of world trade in each product.² Apart from Denmark, the export sectors of the northern European economies are geared towards fast-growing products. Finland and Sweden, for instance, specialise in the fast-growing telecoms sector. At the other end of the scale, Greece specialises more in textiles, agriculture and fishing while Italy is exposed due to its reliance on slow-growing leather-goods and clothing industries and its relatively low export intensity in some of the fast-growing high-tech industries. When intra-EU trade is excluded, Europe's exports overall are not particularly skewed towards high-growth products.

Figure 9. **Correlation of trade shares with market growth**
Rank correlation of RCA index with the growth rate of world exports,¹ 1996-2005

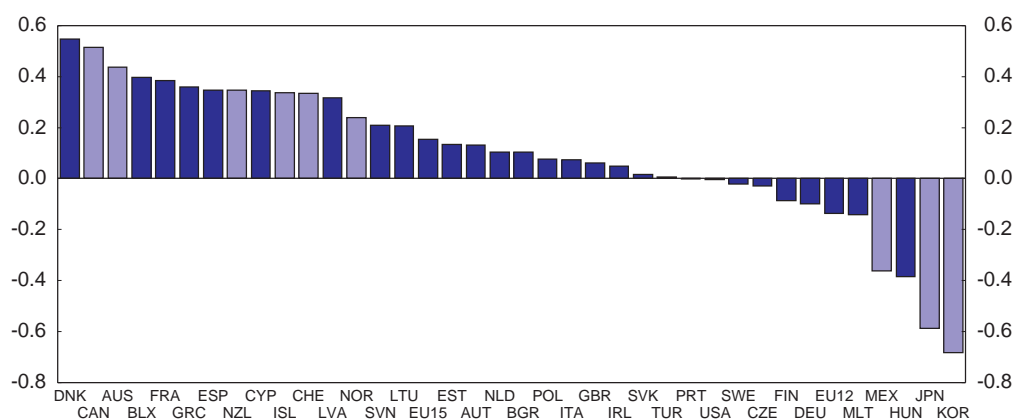


1. Weighted by export values, for 500 most traded commodities. Growth rate is based on nominal values.
Source: UN, Comtrade database, IMF and OECD calculations.

Who specialises in high-margin products?

Fast-growing industries are not necessarily the most profitable ones. For example, some parts of the high-growth ICT industry deal in low-margin commodity items such as basic memory chips. Figure 10 shows the correlation between each country's RCA and a measure of the global profit margin of each product.³ The rankings differ noticeably compared with the correlations against world trade growth. Australia and Denmark specialise in relatively profitable products even if world-wide growth of those items is not high. Dynamic Asia, the BRICs and the EU12 are more likely to be exporting low-margin products.

Figure 10. **Correlation of trade shares with global profit margin**
Rank correlation of RCA index with global profit margin, 1996-2002



Source: UN, Comtrade database, IMF, STAN database and OECD calculations.

Who specialises in high-tech products?

High-tech goods (especially ICT products) make a smaller share of EU15 manufacturing exports than in Japan and the United States (Table 2). Instead, the EU15 is more concentrated in medium-high technology exports while the new member states have more weight on medium-low and low-technology products.

China has shifted towards high-tech exports extremely rapidly. The share of its exports that is classified as high-tech doubled between 1996 and 2005.⁴ While it appears that China has overtaken the EU, the figures here may overstate the gains. While China is no longer just a low-wage country assembling cheap manufactures, in the high-tech field it specialises mainly in the labour intensive and low value-added parts of the production chain (Denis *et al.*, 2006).

Table 2. **Export shares in manufacturing, by skill intensity**
2005

	High technology	ICT (part of high-tech)	Medium-high technology	Medium-low technology	Low technology
World	27.8	19.5	37.5	14.3	20.5
EU15	25.7	12.8	44.6	12.9	16.8
EU12	15.2	15.1	41.1	18.7	25.1
US	36.1	20.2	40.0	10.1	13.8
Japan	27.1	21.9	55.7	12.8	4.4
China	36.2	33.2	20.7	12.8	30.3
SE Asia (excluding China)	47.8	43.4	23.1	8.9	20.2
Austria	14.1	8.7	43.7	17.4	24.8
Belgium	20.3	5.9	44.9	14.9	19.9
Bulgaria	5.4	4.6	23.3	27.4	43.9
Cyprus	49.2	32.3	21.9	4.3	24.6
Czech Republic	15.8	15.8	46.7	20.1	17.4
Denmark	23.2	10.8	29.8	11.7	35.3
Estonia	23.8	24.4	23.9	14.8	37.5
Finland	26.7	24.0	29.8	17.0	26.5
France	24.4	9.1	42.2	13.3	20.1
Germany	20.5	11.4	51.8	13.7	14.0
Greece	14.8	6.0	19.1	25.7	40.4
Hungary	32.8	31.6	43.6	9.4	14.2
Ireland	52.8	24.4	32.2	2.4	12.6
Italy	11.8	5.0	41.7	17.7	28.8
Latvia	7.7	4.6	17.4	13.0	61.9
Lithuania	11.3	10.6	29.5	15.5	43.7
Malta	57.3	50.3	15.7	6.3	20.8
Netherlands	34.7	24.6	31.7	10.2	23.4
Poland	6.8	7.4	40.4	24.3	28.6
Portugal	12.5	11.9	32.6	16.7	38.3
Romania	4.2	9.6	32.3	17.5	45.9
Slovakia	12.9	14.6	46.9	19.3	20.8
Slovenia	10.4	3.6	45.0	19.9	24.7
Spain	11.9	5.6	47.3	18.2	22.6
Sweden	24.0	15.3	38.9	15.3	21.8
United Kingdom	33.8	20.0	37.8	12.1	16.4

Source: OECD calculations based on UN COMTRADE.

Who stands to gain from outsourcing?

Reductions in transport and communication costs have contributed to the internationalisation of production chains. Outsourcing, or more accurately the international sourcing of intermediate inputs, has increased from around 8% of world GDP in 1982 to around 12% today. The trend has been more prevalent

in manufacturing, where the share of imported inputs has doubled to 29% over the same period. Not all of this is true outsourcing, however, as some of this trade will take place between subsidiaries of multinational companies.

While outsourcing reduces production costs, there are fears that it can lead to job losses and wage cuts for certain groups. However, the balance of evidence suggests that EU15 countries have been among the biggest winners from this trend (Havik and McMorrow, 2006). It has a positive trade balance of intermediate goods and services, and this surplus has increased over the past decade. Overall, it appears to be in-sourcing more jobs than it is outsourcing.

There has been considerable public debate about the outsourcing of services in recent years. The service sector used to be a safe haven in places where low-wage manufacturing jobs were being lost to the developing world. But advances in technology mean that even these jobs no longer seem safe. The loss of security may be one reason why peoples' fear of increased trade in services is out of all proportion to the actual economic effects that it is having on the ground. The available evidence suggests that the international outsourcing of services is a small-scale phenomenon. Only the most basic and codifiable services can be easily outsourced; the majority of services require ongoing relationships, which means local providers will have an advantage. In any case, the EU15 has done well out of this trend: it has about a third of the global market for trade in services excluding tourism. Several EU countries have done particularly well. Several EU countries have large trade surpluses in services (including The United Kingdom, Sweden, Finland, Luxembourg and Ireland all have trade surpluses in business services,⁵ and only one EU country has a deficit in services greater than 1% of GDP (the Czech Republic). Nevertheless, some countries⁶ have a low import intensity of services suggesting their companies have scope to boost outsourcing in the future.

Who stands to gain from off-shoring?

There are related concerns about off-shoring, which refer to the shifting of whole production plants to other countries. Indeed, foreign investment flows are often seen as a bellwether of economic health since it reflects capital markets voting with their feet. The situation varies widely across EU member states. The new member states have received net capital inflows over the past five years (FedEx?). Most of this money has come from other EU countries. In contrast, most EU15 countries have seen a modest net outflow. In most cases the outflows from the EU15 are small and investment has tended to go to other developed countries. For example, *delocalisation* to low-wage countries represents less than 3% of French investment abroad (Fontagné and Lorenzi, 2005). Evidence from a study of Italian and French firms shows that investing in low-wage countries had a positive long-term effect on a firm's output and (in Italy) its productivity, suggesting that efficiency gains could enhance the long-term competitiveness of investing firms and therefore be a net benefit to the investing country (Navaretti *et al.*, 2006).

Who has the largest pools of less-skilled labour?

The re-emergence of China and India into the global trading system has substantially increased – by some measures, doubled – the effective global workforce. Least-skilled workers are the most affected because they face strong competition from cheap labour abroad and are less able to move into new jobs in other industries. The importance of education and on-the-job training has therefore risen. The average educational level in most EU countries is high, which should help the workforce to be relatively adaptable by international standards. In countries such as France, Belgium, Ireland and Spain, for instance, a large proportion of younger workers have tertiary qualifications. However some Eastern European and Mediterranean countries face a considerable challenge, especially regarding their older workers.

Which countries are best placed to cope?

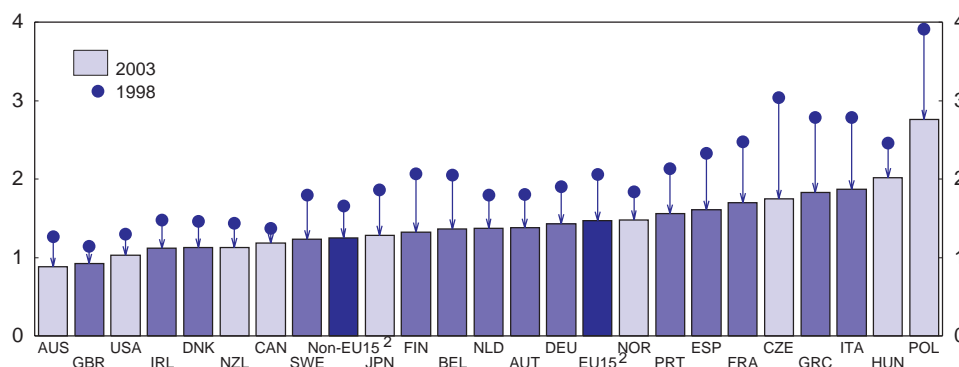
Coping with globalisation is about coping with change. Faced with a changing economic environment, adjustment costs can be reduced through a regulatory environment that emphasises competition so that resources move quickly towards the most profitable areas. Similarly, flexible labour markets help people move into new jobs in growing sectors. Sound welfare policies, especially active labour market interventions, can smooth the transition from one job to another and from inactivity to employment. In the rest of this section, countries are assessed against a range of indicators of adjustment capacity.

Who has the most flexible economies?

Over-regulation reduces adaptability and long-term growth

An overly regulated businesses environment can hamper adjustment by sheltering uncompetitive industries. Despite having made considerable progress in reducing anti-competitive product market regulation, the EU remains more heavily regulated than the average OECD economy (Figure 11). In contrast, the English-speaking countries have fewer barriers to competition. But even there, the extent of anti-competitive regulation varies widely across sectors. For example, Ireland's overall regulatory environment is among the most light-handed in the OECD but barriers to competition in its network industries are comparatively high.

Figure 11. **Product market regulation**
Index scale of 0-6 from least to most restrictive¹



1. These indicators measure the level of anti-competitive regulation but not how strictly they are enforced.

2. Weighted average, excluding Luxembourg for the EU15.

Source: OECD, *Product Market Regulation database* (www.oecd.org/eco/pmr).

The most common type of protection differs across countries (Table 3). In general, countries with a Germanic legal tradition tend to have relatively complex administrative procedures. Those that have a Napoleonic or civil legal system tend to have relatively high state control and high barriers to business start-ups. The new member states are more likely to protect their industries with sector specific regulation and ownership barriers, including state ownership.

Table 3. **Product market regulation**
PMR index minus average for the OECD, by type of regulatory barrier

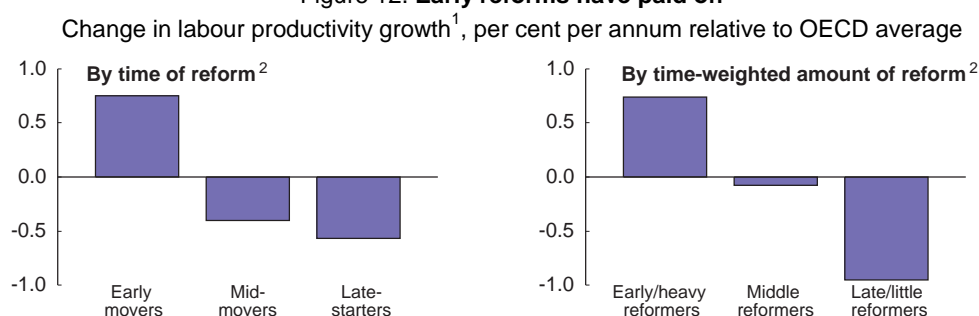
	Legal origin ¹				New members
	Napoleonic / civil	Germanic	British / common law	Scandinavian	
State control					
Scope of public ownership	0.3	-0.4	-0.9	0.0	0.8
Regulatory burden on business procedures	0.4	0.0	-0.5	-0.6	0.3
Barriers to entrepreneurship					
Administrative burdens on start-ups	0.5	0.3	-1.0	-0.8	0.9
Sector-specific administrative burden	0.3	0.3	-1.0	-0.7	0.9
Barriers to entry					
Barriers to entry in industries	0.1	0.0	-0.4	0.4	-0.4
Complexity of administrative procedures	-0.3	0.2	0.0	0.2	-0.2
FDI Barriers					
Ownership barriers	-0.2	-0.1	0.0	-0.4	0.7
Discriminatory procedures	0.2	0.0	-0.4	-0.2	0.3
Network industries	0.3	0.0	-0.2	-0.2	. .
Professional services	0.3	0.0	-0.4	-0.8	0.6

1. Countries are grouped according to the classification in La Porta *et al.* (1997), "Legal Determinants of External Finance", *Journal of Finance*, Vol. 52, No. 3. Specifically, Napoleonic/civil: Belgium, France, Greece, Italy, Mexico, Netherlands, Portugal, Spain, Luxembourg; Germanic: Austria, Germany, Japan, Korea, Switzerland; British: Australia, Canada, Ireland, New Zealand, United Kingdom, United States; Scandinavian: Denmark, Finland, Iceland, Norway, Sweden; New members: Czech Republic, Hungary, Poland, Slovakia.

Source: OECD international regulation database (www.oecd.org/eco/pmr).

Evidence suggests that anti-competition regulation reduces an economy's adjustment capacity and thereby harms welfare. For instance, Duval *et al.* (2007) show that while product market regulations tend to dampen the initial impact of economic shocks, they make their effects more persistent. The total output loss is higher than for the fast-adjusting economies that experience a short sharp shock. Excessive regulation also dampens labour productivity growth in the long term, possibly because it reduces the incentive to innovate and adjust. Countries that liberalised their product markets early and aggressively have been rewarded with higher productivity growth (Figure 12) and with stronger labour markets (Bassinini and Duval, 2006).

Figure 12. **Early reforms have paid off**



1. Labour productivity growth from 2000-05 minus productivity growth in 1970-80.

2. Reform is measured by the change in the product market regulation (PMR) index between 1975 and 2003. The sample of 21 OECD countries is split into three groups based on the timing of reform efforts. In the left panel, it is based on the proportion of the change in the PMR occurring in each time period (1975-85; 1985-95; 1995-2003). In the right-hand panel, the change in the PMR is weighted so that early reforms get a higher weight (weights of 4, 2 and 1 respectively for reforms in the three periods).

Source: OECD, *Product Market Regulation database* and OECD calculations.

Firm creation and destruction

The impact of firm turnover on economic performance is hard to gauge accurately, but there is evidence that the entry of new firms in the most innovative industries makes a considerable contribution to aggregate productivity growth. In more mature industries, productivity growth has more to do with within-firm efficiency improvements and by the exit of obsolete firms (OECD, 2001; Rincon and Vecchi, 2003).

Comparing across countries, firm turnover is high in the English-speaking countries and some of the new member states. It is comparatively low in Switzerland, Sweden and Portugal. There is also evidence that once established, new firms have in the past grown faster in the United States than in Europe. This could suggest that the US is better at shifting resources towards the winners. One reason may be that it can be harder in Europe to find finance to grow (Aghion and Howitt, 2006).

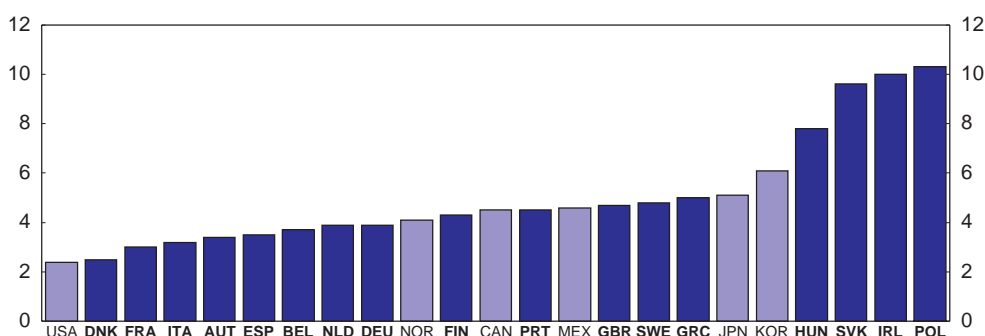
The pace of structural change

The extent to which the industrial structure of an economy has changed can be assessed by looking at the change in value-added shares in each sector. A proxy indicator for this can be constructed using a Lilien-type index:

$$\frac{1}{44} \sum_{i=1}^{44} |\Delta s_i| \times 100 / 11.$$

where s_i is the share of value added in sector i . It measures the average absolute rate of change in value added shares in the 11-year period from 1992 to 2003, or the nearest available years. Up to 44 sectors are included. A comparison across countries is shown in Figure 13. The new member states and Ireland have seen relatively large shifts in sector shares over the period in question, whereas the pace of change has been quite low in Italy, France and Denmark. Perhaps surprisingly, the United States is the lowest of all. This might reflect its size, but it may also indicate that the US economy underwent structural adjustment relatively early so that by the early 1990s it was well placed to deal with subsequent changes in the global economy. Indeed, the United States got out of the apparel, footwear and consumer electronics industries several decades ago (Leamer, 2007), whereas these industries still play a major role in some European countries. On the other hand, the low index value for the United States may reflect defects in the index itself.⁷

Figure 13. **The pace of structural change**
Index of structural change in the economy,¹ 1992-2003



1. The structural change index measures the average rate of change of the share of value added generated by each sector between 1992 and 2003 (or the closest possible years), *i.e.* if Δs_i is the change in the value added in sector i between 1992 and 2003, then the index is

$$\frac{1}{44} \sum_{i=1}^{44} |\Delta s_i| / (2003 - 1992) \times 100.$$

The data cover up to 44 sectors. It excludes the oil and mining sectors except for France and Portugal.

Source: OECD, STAN database.

Who has the most flexible labour markets?

Strict employment protection legislation (EPL) can slow down structural change by reducing job turnover and labour mobility. Its side-effects are felt most strongly by groups on the margins of the labour market such as women, youths and older workers. Most continental European countries have relatively stringent EPL, which partly explains why trade-displaced workers in Europe are slower to find new jobs than their US counterparts (OECD, 2005a). In contrast, EPL in the new member states tends to be low.⁸ Apart from Austria and Slovakia, there has been little progress in reducing EPL on permanent contracts between 1998 and 2003. EPL for temporary workers has eased in some countries, but the level of regulation in the major continental European economies remains higher than the OECD average. Moreover, the different treatment of temporary and permanent contracts has encouraged a two-tier labour market that is undesirable from an economic and equity point of view. Some countries have managed to reduce the adverse impacts of EPL by having dynamic internal labour markets (*i.e.* job reallocation within large firms) but this strategy will be less effective when structural change affects whole industries.

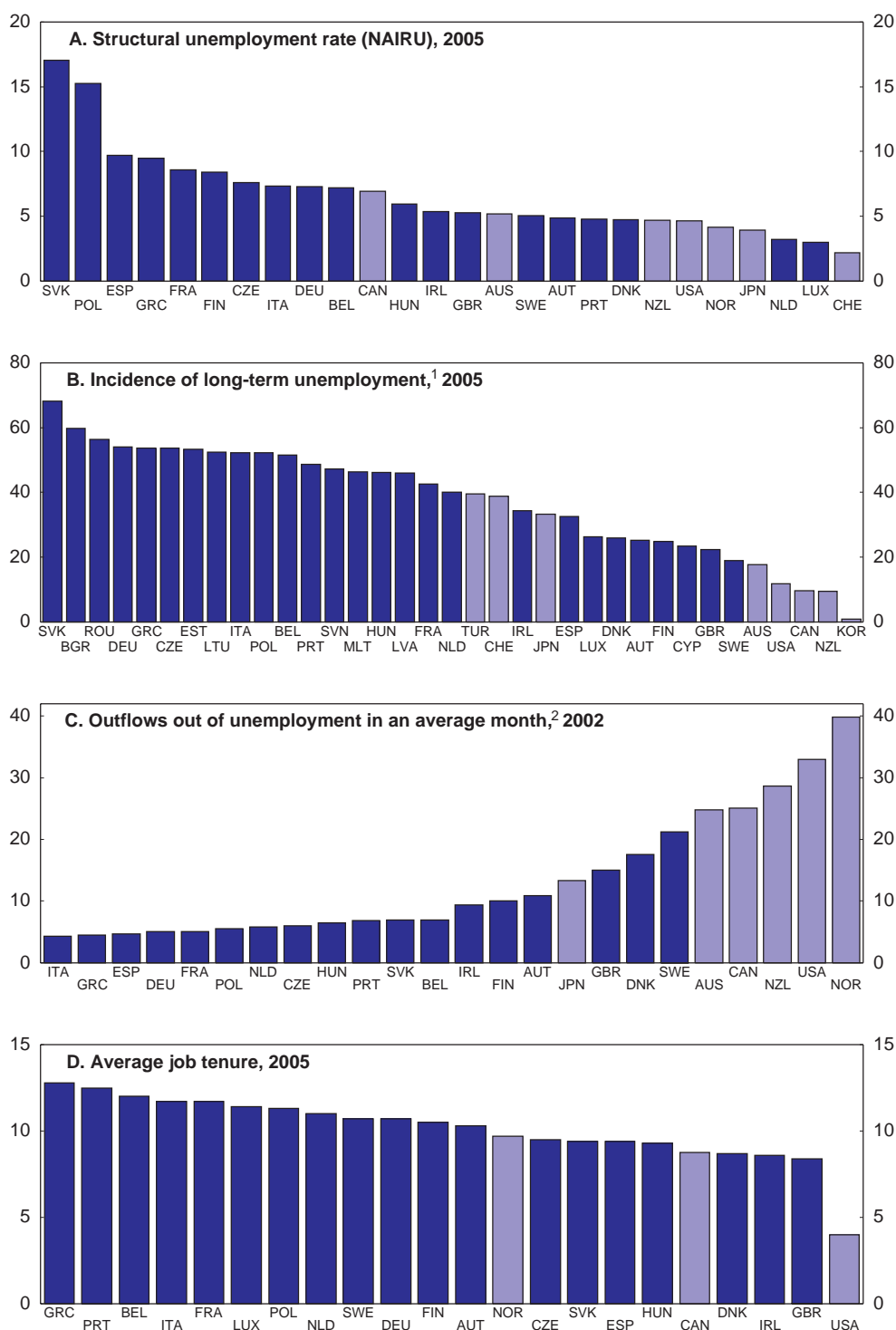
Figure 14 presents several indicators of labour market flexibility. None of the indicators on their own constitutes a definitive measure of flexibility as they will be influenced by differences in the size of shocks that have hit an economy – *i.e.* by differences in the need to adjust – as well as differences in adjustment capacities. However, they tend to be well correlated with each other and when taken together can give a reliable assessment of adjustment capacity across countries:

- The *structural rate of unemployment* (NAIRU) is perhaps the main outcome measure of the full range of labour market policies. As is now well established, structural unemployment remains high in the major continental European countries. A similar conclusion is reached if one looks at a five-year average of the actual unemployment rate rather than an econometric estimate of the NAIRU.
- Low *unemployment persistence* can indicate that a country is good at reallocating workers who have lost their jobs. The Nordics and the English-speaking countries tend to have a low incidence of long-term unemployment but at the other end of the scale at least half of the unemployed in most new member states have been out of work for at least a year. The variation across countries in the *outflow rate from unemployment* is also very large. Each month, fewer than 5% of the unemployed found a job or left the labour market in 2002 in Italy, Greece, Spain and Germany.

In contrast, around 30-40% escaped the pool of unemployment each month in New Zealand, the United States and Norway. Of course, this reflects labour market policies as well as the cyclical labour market situation at the time.

- *Average job tenure* provides a broad indicator of turnover in the job market. Average tenure is around twice as long in France and Japan as it is in Australia and Iceland. However, the indicator can be difficult to interpret since it can be distorted by the extent to which countries use ALMPs and the incentives that EPL can give in favour of temporary contracts.
- *Job turnover* can be measured directly through job creation and destruction rates, though the data is more sparse. In a sample of thirteen European countries, Gómez-Salvador *et al.* (2004) found considerable differences in *job creation rates* across Europe but *job destruction rates* were quite similar. Moreover, there was no clear correlation between creation rates and destruction rates across countries. This suggests that while labour market policies may not be able to do much to prevent job losses, well designed policies may be able to improve job creation rates.
- *Regional labour mobility* can help when economies are faced with structural change that affects regions unequally. Internal migration is high in Japan and the English-speaking countries. Mobility is also relatively high in France, the Netherlands and to a lesser extent Germany. However, regional mobility is almost non-existent in several Eastern and southern European countries such as Poland, Greece, Spain and Slovakia.
- Low regional mobility will lead to greater *dispersion in unemployment rates* within a country. Regional unemployment dispersion is especially high in Germany, reflecting the performance gap between the east and the west, and in Italy, which reflects the endemic unemployment in the mezzogiorno. Unemployment dispersion is also relatively high in Slovakia and Spain. Unemployment is more equally spread in Scandinavia and various low-unemployment countries.
- An effective labour market should find work for the unskilled as well as the skilled. In some Eastern European countries, but also in the United Kingdom and Belgium, the *employment rate of the unskilled* falls well short of the skilled. Perhaps surprisingly, Sweden does well despite high benefit levels and implicit minimum wages. This may reflect the emphasis it gives to active labour market policies.

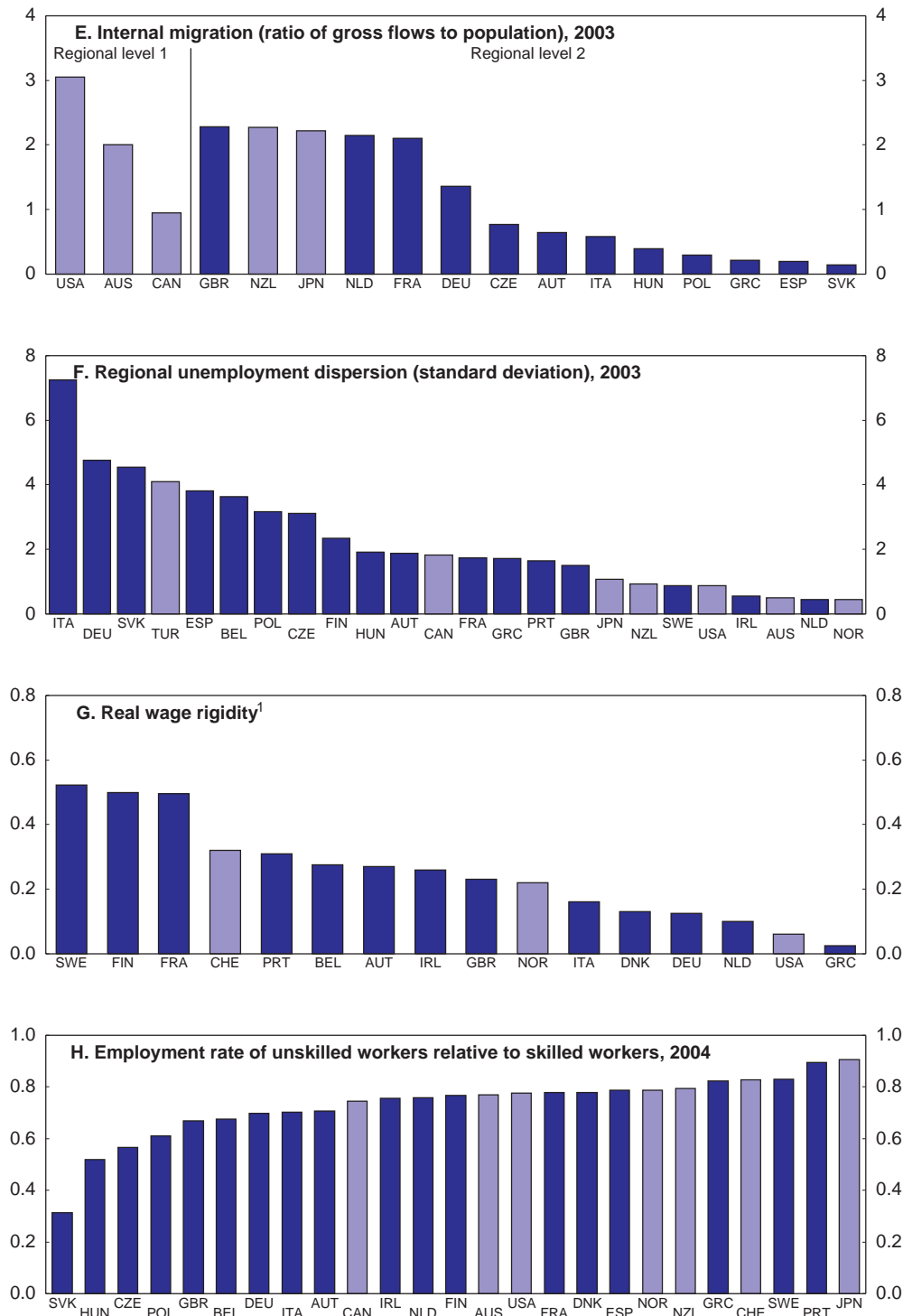
Figure 14. Indicators of labour mobility



1. Defined as those unemployed continuously for 12 months or more as a percentage of total unemployment.
2. In per cent of total unemployment.

Source: OECD, *Labour Force Statistics and Economic Outlook 81 databases*; OECD (2004, 2006), *Employment Outlook*; Eurostat; US Bureau of Labor Statistics; Statistics Canada.

Figure 14. Indicators of labour mobility (cont'd)



1. The measures range from 0 (where no one is subject to the rigidity) to 1 (where all workers are potentially affected).

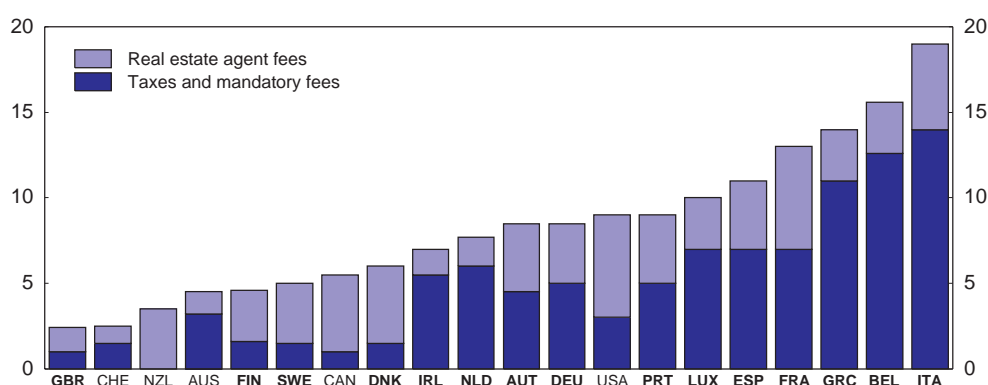
Source: OECD (2006), *Employment Outlook*; Eurostat; Dickens *et al.* (2006), "The Interaction of Labor Markets and Inflation: Micro Evidence from the International Wage Flexibility Project".

Real wages will eventually adjust to structural change but faster adjustment generally implies fewer layoffs. In a meta-analysis of labour market studies, EC (2006) finds that real wages respond more quickly in labour markets that are deregulated and where trade unions are less common.⁹ The evidence from micro data goes in the same direction but is a little less clear-cut. The Brookings-led International Wage Flexibility Project (Dickens *et al.*, 2006) analysed 31 individual-level data sets in 13 countries and found that real wages are most flexible in Greece, the United States, the Netherlands and Germany while they are comparatively rigid in Sweden, France and Finland (Figure 14, panel G).

Wage rigidities at the lower end of the distribution can be exacerbated by *minimum wage floors*. At least one out of every eight full-time employees in Luxembourg, Latvia, France, Romania and Lithuania was earning the minimum wage in 2004 (Eurostat, 2006) although this may be less of a problem in the new member states as wage floors are rarely enforced (Boeri and Garibaldi, 2006). When faced with structural change affecting low-skilled workers, an in-work benefit may be a more effective anti-poverty measure.

Labour market flexibility is also influenced by the *housing market*. People will be less likely to move to another region if they face high costs in selling their house such as transaction taxes and the loss of tax privileges that are related to residence periods. Transaction costs are low in the United Kingdom (Figure 15), and it has a relatively high rate of regional mobility. The opposite is true for Belgium, Italy and Greece.

Figure 15. **Housing transaction costs**
Per cent of house prices, 2004

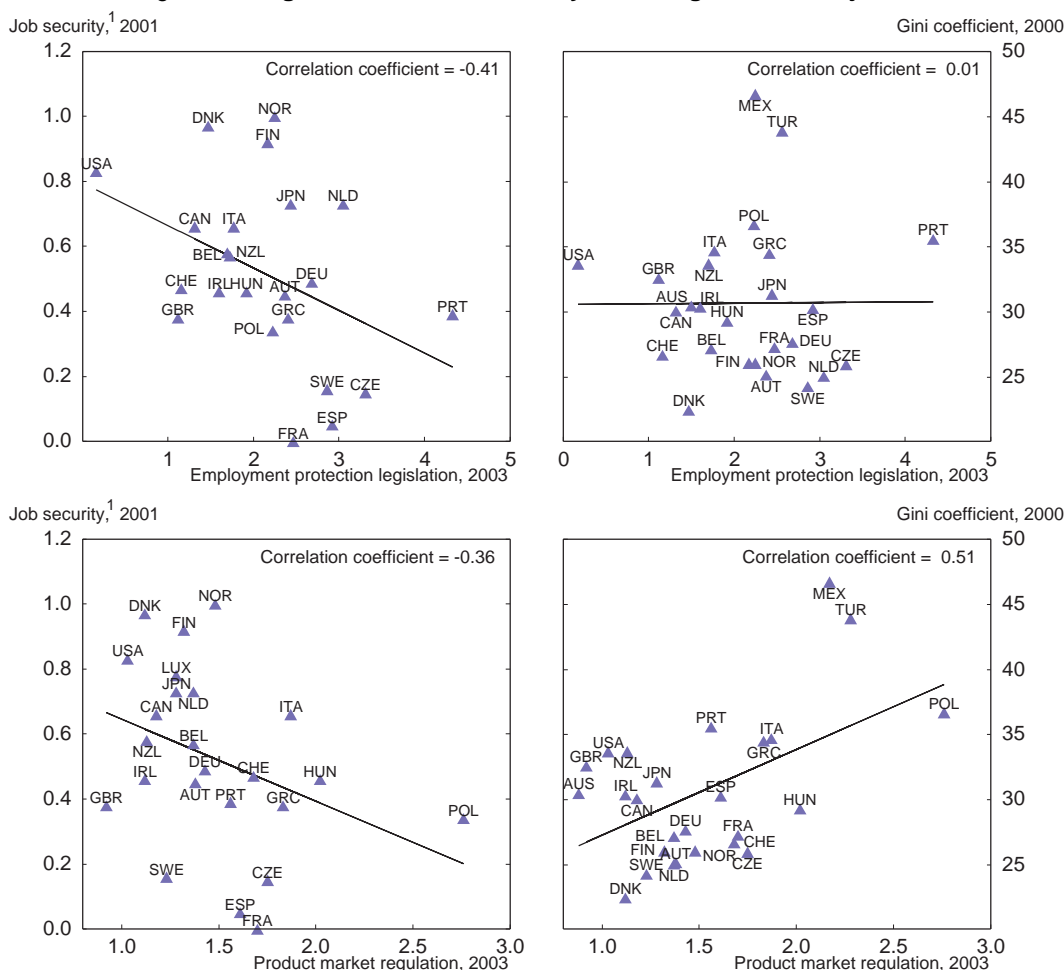


Source: ERA Immobilier (2005), *Le marché européen de la transaction immobilière*; Belot, M. and S. Ederveen (2006), "Cultural and Institutional Barriers to Migration between OECD Countries", mimeo.

Flexibility has not been bought at the cost of less job security

Resistance to reform can come from the idea that labour market rigidities are the price that must be paid for Europe's social model. There is a belief that "Europe's jobless figures would be unacceptable in America; America's inequality figures would be politically intolerable in much of Europe" (Patten, 2005). But if there is such a trade-off, it is far from simple. In the first place, there is no single European social model. Sapir (2005) for example distinguishes between the Nordic, Continental, Anglo-Saxon and Mediterranean models. At the risk of over-simplification, the Nordics have succeeded in combining high income equality with low unemployment while Mediterranean countries have done poorly on both counts. Moreover, there is no evidence that regulation buys security. In fact, the opposite may be true – workers in countries with strict employment protection legislation tend to feel they have *less* job security than those in more flexible labour markets (Figure 16). Average job tenure has increased in most OECD countries since the early 1990s, belying the perception that jobs have become more insecure. Well-designed tax and benefit policies are a prerequisite for getting the best of both worlds. Education policies are also important for dealing with social disadvantage (Machin, 2006).

Figure 16. Regulation is not necessarily delivering on social objectives



1. Job security is a combined index of survey responses to questions about perceived job security (from Eurobarometer and ISSP).

Source: Eurobarometer and ISSP; Förster, M. and M. Mira d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", *OECD Social, Employment and Migration Working Papers*, No. 22; OECD calculations.

A summary indicator of labour market flexibility

In order to distil the large amount of information into a more palatable form, the various measures of labour market flexibility described above were combined into a composite index using principal components analysis. A reasonably complete block of data could be constructed for 26 OECD countries. Missing data were replaced with the cross-country average so that the principal components would be largely unaffected. The results of the analysis are shown in Table 4. Only the first six principal components are shown as collectively they explain 85% of the variation in the data and the remaining components are likely to reflect random noise.

In the first component, all variables except wage rigidity have the expected sign in the sense that a higher value implies greater labour market flexibility. The weight on wage rigidity is essentially zero. Thus, the first principal component can be interpreted as a composite index of flexibility. Using these factor loadings, the first component is shown in the top panel of Figure 17. While there are a couple of exceptions, the ranking across countries corresponds well to our intuitive judgement and to other published evidence (OECD, 2006a) on the relative flexibility of OECD labour markets.

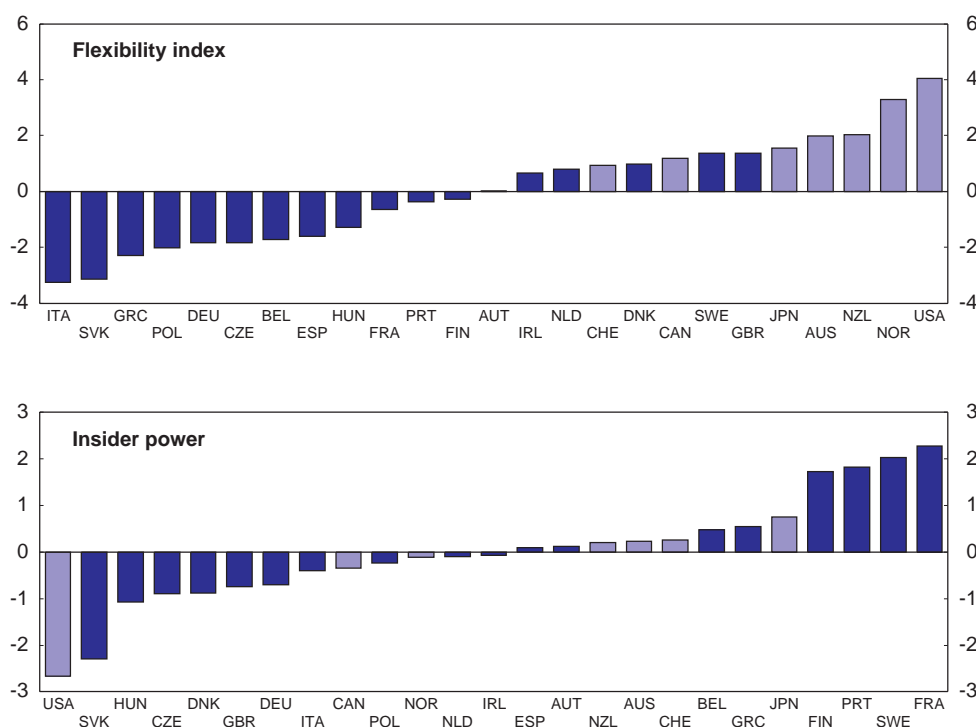
Table 4. **Principal components of labour market flexibility indicators**

	First six principal components					
	1	2	3	4	5	6
Eigenvalue	4.14	1.39	1.12	0.89	0.55	0.38
Proportion of variance explained	0.46	0.15	0.12	0.10	0.06	0.04
Cumulative proportion of variance	0.46	0.62	0.74	0.84	0.90	0.94
Eigenvectors:						
Incidence of long term unemployment	-0.43	0.08	0.10	-0.40	0.28	0.10
Outflows from unemployment	0.40	0.12	-0.16	0.34	-0.12	-0.59
Job tenure	-0.28	-0.56	0.02	-0.30	-0.16	-0.48
Internal migration	0.36	-0.06	-0.30	-0.09	0.74	0.11
Regional unemployment dispersion	-0.40	0.20	-0.10	0.26	0.14	-0.29
Real wage rigidity	0.02	-0.55	0.53	0.43	0.38	-0.05
NAIRU in 2005	-0.34	-0.13	-0.25	0.58	-0.16	0.45
Empl. rate of unskilled relative to skilled	0.23	-0.54	-0.45	-0.16	-0.24	0.22
Housing transaction costs	-0.34	-0.07	-0.56	0.10	0.29	-0.25

The second component puts relatively high weight on job tenure, real wage rigidity and the unskilled employment rate, with the other variables having low weight. A possible economic interpretation of this principal component is that it may be measuring insider power in the labour market. When insiders have more power than outsiders, the symptoms will tend to be a greater ability to protect real wages, less tendency to be laid off or to quit (hence the longer job tenure) and more difficulty for the unskilled to get a foot in the door. The composite index based on these weights is shown in the bottom panel of Figure 17. Once again they are well correlated with our priors, with France, Sweden, Portugal and Finland all having a high degree of insider power. Two countries stand out at the other end of the scale (the United States and Slovakia), with the remaining countries all being close to zero and therefore difficult to distinguish between.

The other principal components (3–9) have no obvious economic interpretation.

Figure 17. Principal components analysis



Who has the best innovation framework?

Globalisation shifts the comparative advantage of developed countries towards the innovation-intensive end of the production chain. Recognising this, innovation is the centrepiece of the EU's Lisbon strategy for growth and jobs which in 2000 set the goal to make the EU "the most competitive and dynamic knowledge driven economy by 2010". While it has made some progress, the EU is falling short of that vision, lagging behind the United States and Japan on most indicators of innovation performance (EC, 2006a). On the positive side, the ICT gap has been shrinking and the EU is a world leader in some areas such as aerospace, mobile phones and parts of the engineering industry. Some member states, including the Nordics, spend heavily on R&D, mainly because of their strength in the pharmaceutical, defence and ICT industries. However, the gap in business R&D expenditure has not shrunk and there is evidence that firms in the US extract greater returns from their R&D expenditure (Rincon and Vecchi, 2003).

Innovation is a complex and poorly understood phenomenon, but the policy recommendations in *Going for Growth* (OECD, 2006b) provide some guidance. First, countries with deeper financial markets tend to spend more on R&D. Venture capital can be scarce where there is excessive taxation of capital income, where portfolio restrictions limit institutional investors such as pension funds from holding non-listed or high-risk companies, where barriers to cross-border mergers make it harder to exit an unsuccessful venture and where bankruptcy procedures are long and costly. Openness to foreign investment is important because foreign-performed R&D has a significant effect on domestic multifactor productivity growth. In most cases competition boosts innovation activity, so removing barriers to competition in the sheltered sectors can be good for growth. Finally, a country's innovation performance is influenced by its ability to produce, attract and retain highly skilled people. Education is important here, but so too is immigration policy.

An indicator of innovation performance

In order to compare innovation frameworks across countries, fifteen innovation indicators from the OECD's *Going for Growth* and other publications were combined into a synthetic indicator using a principal components analysis. The indicators (based on latest available data), and the first four principal components, are shown in Table 5.

Table 5. **Principal components analysis of innovation framework indicators**
Latest data across 27 OECD countries¹

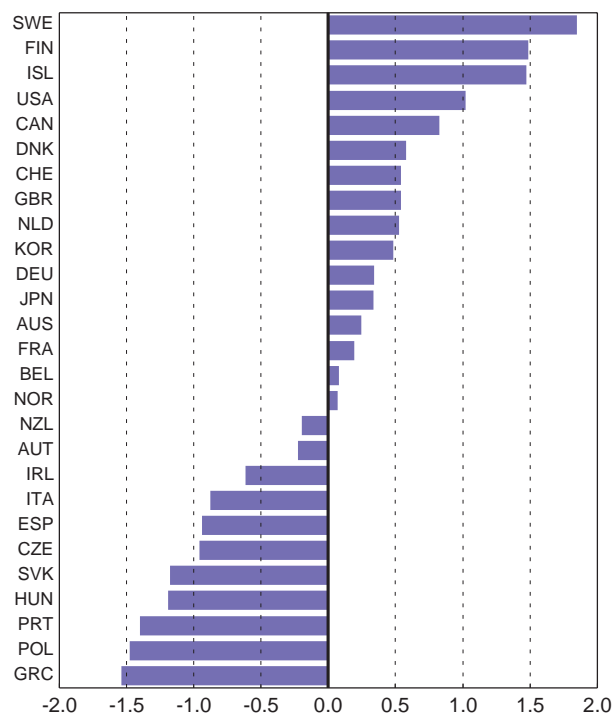
	First four principal components			
	1	2	3	4
Eigenvalue	5.80	2.03	1.50	1.23
Proportion of variance explained	0.39	0.14	0.10	0.08
Cumulative proportion of variance	0.39	0.52	0.62	0.70
Eigenvectors:				
Capital gains tax on shares (%)	0.16	0.01	-0.36	-0.41
Private R&D expenditure (% GDP)	0.35	0.24	0.09	-0.01
Public R&D expenditure (% GDP)	0.35	-0.15	0.23	-0.24
Triadic patents (number per capita)	0.30	0.36	0.17	-0.02
Math and science literacy (PISA score)	0.23	0.15	0.21	0.04
Early stage venture capital (% GDP)	0.31	-0.37	0.02	0.07
Expansion stage venture capital (% GDP)	0.27	-0.39	-0.09	0.10
Produce market restrictiveness index	-0.26	0.15	0.26	-0.09
Strength of intellectual property rights (index)	0.18	0.46	-0.31	-0.08
Share of R&D that is publicly performed	0.35	-0.14	0.25	-0.22
Tax subsidies for R&D (B index)	-0.10	-0.12	-0.37	-0.68
Direct public funding of business R&D (% GDP)	0.18	0.27	-0.29	0.26
Share of R&D funding provided by banks	-0.18	0.34	0.16	-0.23
Published scientific articles (number per capita)	0.35	0.15	-0.09	-0.02
Co-authorship rate of scientific articles	0.05	-0.05	-0.50	0.34

1. OECD excluding Luxembourg, Mexico and Turkey. Missing data is set equal to the cross-country average.

The first component explains 39% of the cross-country variance of the data. Most of the variables have the expected sign (though in some cases the sign is unknown *a priori*). The impact of tax subsidies for R&D and capital gains tax on shares are perhaps perverse, although the estimated weight of these variables is relatively low.

Applying the weights of the first principal component generates the synthetic indicator shown in Figure 18. In general, the Nordic countries are performing well in most areas, although some of their governance frameworks could be improved to ensure they are getting maximum value for money for their high levels of public expenditure. The major continental European countries have well-trained workforces but their potential is being held back by weaknesses in tertiary education institutions. Most of southern and eastern Europe, along with Ireland, needs to improve educational outcomes and the way in which they support private-sector R&D. Some must also stimulate entrepreneurs by stripping away the barriers to firm creation.

Figure 18. Innovation – synthetic indicator



The remaining principal components, which individually do not explain a great deal of the variance of the data, are more difficult to interpret.

While encouraging inventions is important, so too is protecting them. Europe's system of patent protection is cumbersome and expensive. An inventor must apply for a patent in every country where he or she wants to protect it. The cost of applying for and maintaining a patent is up to 13 times higher than in the United States or Japan, mainly because of translation costs. An attempt to create a Community Patent failed over the issue of which languages it must be filed in and disagreements over jurisdictional issues. Moreover, for "bundled" European patents, parties may have to obtain separate rulings in different jurisdictions. This opens them to the risk of inconsistent decisions regarding the same patent. An attempt by the European Patent Organisation to break through this problem by creating a European Patent Court also failed in 2006.

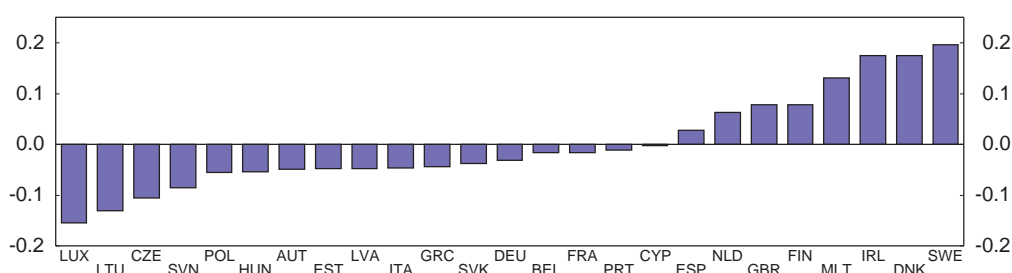
Who has the best education system?

The greater global supply of unskilled labour means that individuals and economies will be better off if the workforce is both skilled and adaptable in the sense that people have general skills which enable them to work in a wide range of high value-added activities. This puts increasing demands on education systems. There is considerable variation across countries in how they have responded to this challenge. While some of Europe's education systems are among the world's best, others have some catching up to do. For instance, Finland's secondary school students are the best performers in the OECD according to the international PISA study of 15-year-olds. Finland has succeeded for several reasons. It has moved away from a command and control system of running schools towards a focus on outcomes. It has embraced diversity and individualised learning. And it has put great emphasis on high standards of teaching, with the teaching profession having a high standing in the country. At the other end of the spectrum, some of the poorer European countries – but also some wealthy ones such as Germany and Italy – have not performed as well as they would have liked.

At the tertiary level, it is difficult to assess the quality of institutions in different countries, but few of Europe's universities are regarded as world-class (Schleicher, 2006). In the widely used but not uncontroversial rankings from Shanghai Jiao Tong University and the Times Higher Education Supplement, few European universities are ranked in the top 50 in the world. Admittedly these rankings tend to emphasise research over teaching, so they may tell us more about the country's innovation framework than its education framework, but even that is important in the context of being able to cope with globalisation. Institutions in many countries are held back because governments are neither funding them properly nor allowing them to charge tuition fees. The EU spends less per student than Japan and the United States at all levels of education, and the gap is widest at the tertiary level. Institutions in some countries are hamstrung by a lack of flexibility and dynamism that comes from overly bureaucratic control and because professors maintain what amounts to a closed shop.

Patterns of student mobility give some indication of how they view different education systems, although there are more factors at play than just quality (such as cost and language). The United States receives more than 40% of the students from OECD countries who study abroad, while Europe gets a quarter.¹⁰ The US also receives two-thirds of the world's internationally mobile R&D spending and a sizeable share of mobile PhD students (Denis *et al.*, 2006). Within Europe, students tend to move to where universities are better funded, such as Scandinavia, or to where they are more flexible and innovative (Figure 19).

Figure 19. **Students voting with their feet**
Net inflow of ERASMUS students, per cent of population aged 15-29, 2003/04



Source: Eurostat, *Eurostat Yearbook 2005*.

Some education systems are not delivering on their social objectives either. A student's socioeconomic background plays a larger role in determining performance in Germany, France and Italy than it does in the United States (Schleicher, 2006; Jacobs and van de Ploeg, 2006). This class bias is exacerbated by regressive funding systems in many countries because subsidised tertiary study primarily benefits young people who come from wealthier backgrounds.

The adult education system can help retrain workers who have lost their jobs as a result of globalisation. Lifelong learning is better funded and more embedded in workplace cultures in some countries than others. Around 40% of the labour force in Denmark, Finland, Sweden, Switzerland and United States is involved in job-related education and training each year. By contrast, fewer than 10% of employees in southern Europe and some of the new member states receive such training each year.

Recognising the importance of education reform, the EC and member states have taken many steps to upgrade their education systems. For example, the decision made in Bologna in June 1999 to create a European Higher Education Area by 2010 is already improving the quality and coherence of tertiary education across the EU. Europe has no shortage of talented teachers and researchers but their creativity needs to be unleashed with institutional reforms that boost flexibility, diversity and quality. By doing so, the European equivalent of the MIT will emerge. But creating one from scratch, as the EU has proposed,¹¹ does not tackle the fundamental institutional problems. It would also be hard – it is worth recalling that MIT struggled for its first 40 years and was nearly taken over by Harvard in the late 1800s.

Who has the best support for people hurt by globalisation?

People are likely to find new jobs more quickly in countries where income support is active rather than passive, where the highest level of income support payments are available for limited time only and where the tax-benefit system encourages people to return to work. The emphasis given to active labour market policies varies widely across countries, both in terms of the level of spending and the types of interventions used. For trade displaced workers, job search assistance and individual counselling have been found to be the most useful programmes. Retraining programmes work for only a few groups, so spending on these interventions needs to be well targeted.

Labour market programmes and income support need to be backed up with stronger job search requirements as part of the mutual obligations approach to welfare. The European countries where unemployment fell most sharply in the 1990s, such as in Scandinavia, are the ones that tightened eligibility criteria the most (Grubb, 2000). While most European countries are moving towards more targeted active interventions and tougher job search requirements, they vary widely in how strictly the rules are enforced.

The EU has created a fund to assist workers in cases of large-scale redundancies caught by globalisation. The European Globalisation Adjustment Fund, which began operating in 2007, can be called on when member states can show that job losses have been caused by major structural changes in world trade patterns. Funds can be used for job search assistance, retraining, promoting entrepreneurship, encouraging self-employment and for some types of in-work wage subsidies. The fund is small, with a maximum annual budget of € 500 million, and overlaps to some extent with national programmes. The only comparable programme in the OECD is the US's Trade Adjustment Assistance Programme, or TAA, which has been in place for more than 40 years. The TAA does not appear to have added much value in the sense that it has duplicated the same types of job search assistance, retraining and relocation services routinely offered in standard labour market programmes (OECD, 2005b). But the mere fact that it exists may have helped to placate some of the opponents of globalisation and by doing so may have helped withstand the calls for protectionism.

Synthesising the discussion: synthetic indicators of globalisation

This section describes the construction of a composite indicator of the "ability to cope with globalisation" that synthesises the variables discussed in that part of the paper. As before, a reasonably complete block of data could be provided for 26 countries. Missing values were filled in using the cross-country sample average. The indicators used are as follows:

- The *product market restrictiveness* (PMR) index (a higher value implies more anti-competitive regulation).
- The synthetic indicator of *labour market flexibility* described above.
- *School results*, measured by the average PISA score in 2003.
- The *skill level*, measured by the proportion of the population that has attained at least upper secondary education in 2004.
- The participation rate in *lifelong learning*.
- Public expenditure on *active labour market programmes* (ALMP) as percentage of GDP.
- The average *immigration rate* as a percentage of the resident population, 2000-05.
- The synthetic indicator of a country's *innovation framework* described above.
- The Lilien index of *structural change* in the economy, shown in Figure 13.
- The rate of *firm creation* (1998-2004).
- The *foreign direct investment restrictiveness index*, 2006.

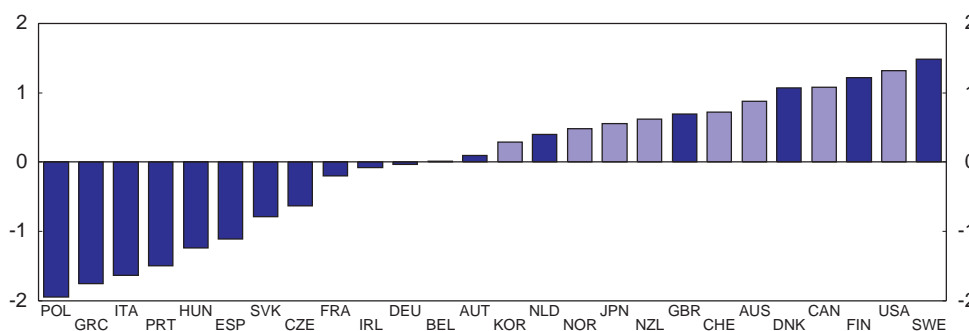
In initial estimation, the final three indicators listed above either had a weight close to zero or had signs that were the opposite of what was expected. They were therefore dropped from subsequent analysis. The results are shown in Table 6. The first principal component, which explains almost half of the variation in the data, gives similar weights to six of the eight variables included in the analysis. The second principal component gives large weights but with opposite signs to ALMP expenditure and the immigration rate. One explanation among many is that immigration may be a partial substitute for other programmes designed to deal with weaknesses in labour market attachment. The other components have no obvious economic interpretation.

Table 6. **Principal components analysis of globalisation indicators**

	First six principal components					
	1	2	3	4	5	6
Eigenvalue	3.83	1.30	1.02	0.68	0.43	0.35
Proportion of variance explained	0.48	0.16	0.13	0.08	0.05	0.04
Cumulative proportion of variance	0.48	0.64	0.77	0.85	0.91	0.95
Eigenvectors:						
Product market regulation	-0.39	0.26	0.24	-0.12	-0.11	-0.83
Labour market flexibility	0.40	-0.28	0.02	0.31	-0.45	-0.21
PISA scores	0.34	0.06	0.29	-0.81	-0.20	0.09
Skill level	0.34	0.18	0.52	0.17	0.70	-0.06
Lifelong learning	0.43	0.20	0.01	0.35	-0.17	-0.21
Active labour market policies	0.17	0.46	-0.72	-0.14	0.26	-0.14
Immigration rate	0.16	-0.73	-0.25	-0.21	0.37	-0.41
Index of innovation framework	0.47	0.18	-0.06	-0.11	-0.13	-0.16

The synthetic indicator of the “ability to cope” constructed using the weights from the first principal component is shown in Figure 20. The Nordics and North America come out well, reflecting their high score on most component indices. Southern and Eastern European countries fare the worst. These countries tend to rate below average on all indicators, but their relatively poor human capital levels have a particularly strong influence on their overall position. In some ways, their low ranking on the “ability to cope” index may be surprising considering how strongly they have grown over the past decade. But the index and its component series need to be considered in the context of the overall level of unit labour costs. A country can still do well in the face of globalisation by ensuring that wages remain consistent with its productivity, skill level, etc. Thus, the index can also be thought of as measuring the susceptibility of a country to pricing itself out of the market through excessive wage increases.

Figure 20. **Indicator of ability to cope with globalisation**



The outcome for Ireland is also surprising, as it ranks near the middle despite being one of Europe's leading globalisers. Ireland does well in terms of product and labour market flexibility but its ranking is hurt by its weak innovation framework and the low average skill level of its adult population. The fact that it has done well despite these weaknesses tells us that immigration can be used to offset skill shortages and that innovation can be delivered through the foreign investment channel.

Conclusions

The acceleration of globalisation over the past decade has not created any new issues for Europe, but it has raised the stakes on some old ones. In particular, it has put a premium on flexibility and innovation. Coping with globalisation is about coping with change. Flexible product and labour markets, sound social policies, active labour market support and well-developed capital markets are necessary to keep adjustment costs to a minimum. A regulatory environment that emphasises competition will make it easier for resources to shift out of struggling industries into more profitable ones. Flexible labour markets make it easier for people to move into new jobs while supportive welfare policies can smooth the transition from inactivity to employment.

This paper has shown that for most Western European economies, globalisation is more of an opportunity than a threat. However, southern and Eastern Europe is more exposed because it is competing for similar business with the fast-growing emerging nations. Countries differ widely in their ability to cope with the forces of globalisation, and in general the countries that are most exposed to these forces are also the ones that have less inherent strength to deal with them. Structural reforms would help them stay on a converging path despite the competition they face from the developing world.

NOTES

1. The countries furthest from the "line of best fit" include Cyprus, Greece, Slovakia, Malta, Romania and the Netherlands.
2. The calculations are based on the top 500 commodities measured by world export values. This collectively accounts for 94% of world trade. Calculations based on more highly aggregated data (44 goods and service categories) give broadly similar results in terms of which countries are at either end of the scale.
3. The profit margin in an industry is the operating surplus divided by the value of gross output averaged over the period 1996-2002. The global profit margin is an average of operating surplus as a share of gross output for fifteen OECD countries for which reliable sectoral data is available (AUT, BEL, DEU, DNK, ESP, FIN, FRA, GBR, ITA, KOR, NLD, NOR, PRT, SWE and USA), weighted by gross output expressed in USD. This measure of margins will be influenced by many factors including the capital intensity of an industry.
4. The classifications in the table are based on 4-digit SITC codes, aggregated according to the method used in the OECD's STAN database. Especially for China and SE Asia, the classification depends heavily on whether parts for data processing and telecommunications equipment (SITC 7599 and 7649) are classified as high-tech or medium-high-tech. If they are shifted to medium-high-tech, then China's share of high-tech exports drops from 36.2% to 28.9%.

5. Excluding royalties and the finance sector, which are typically not thought of as part of the outsourcing process. In terms of the recent change in the net balance of business services, the United States, the United Kingdom, China and India have increased their balances, while Germany and France have witnessed a decreased balance (Amiti and Wei, 2005).
6. Greece, Spain, France, Italy, Lithuania, Poland, Portugal, Romania and the United Kingdom all have a level of other services imports excluding royalties and financial services of less than 2.5% of GDP. The EU median is 3.3% of GDP.
7. A broadly similar ranking of countries is found if the oil and mining sectors are included (except that the estimated rate of change in Canada is significantly higher) and if the data is adjusted to remove the effects of the aggregate business cycle.
8. The EPL index is available for the four new members which are also OECD members. For these countries, EPL is low and comparable with Ireland the United Kingdom. Anecdotal evidence for the other new member states suggests they too have lenient regulatory environments (Boeri and Garibaldi, 2006).
9. More specifically, they find that less centralised bargaining systems, lower union density and greater use of active labour market policies tend to make real wages more responsive to unemployment. Following a productivity shock, wages respond quicker where benefit replacement rates are low, where there is less employment protection for temporary contracts and where enterprise level bargaining is more common.
10. The figures for Europe refer to the EU19 and net out intra-EU flows in order to assess the situation for Europe when it is regarded as a single entity. When students from non-OECD countries are included Europe's share of foreign students rises to 32%, but the statistics are based on citizenship rather than whether a student is "away from home", and they appear to include large numbers of students that may come from families that have lived in European countries for many years but where the student has not gained citizenship (for example, the large number of North Africans studying in France). Thus, these statistics should be interpreted carefully.
11. The proposed European Institute of Technology (EIT) would be a "virtual university" without a campus, consisting of a network of joint ventures among universities, research organisations and public and private firms. A governing board would select eligible partnerships, each of which would be established for between seven and fifteen years. EIT degrees would be awarded at the post graduate and PhD levels based on the rules of the relevant member state. Funding would come mainly from the EU with modest co-financing from industry.

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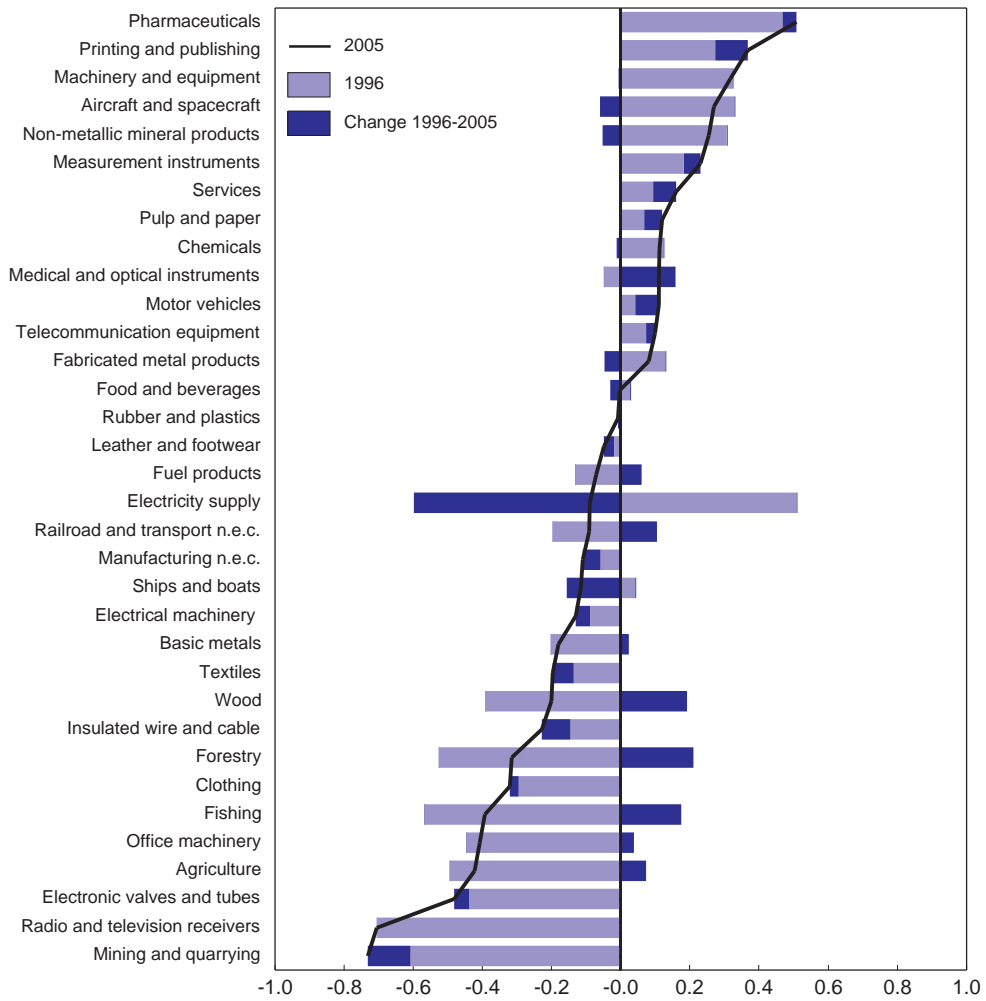
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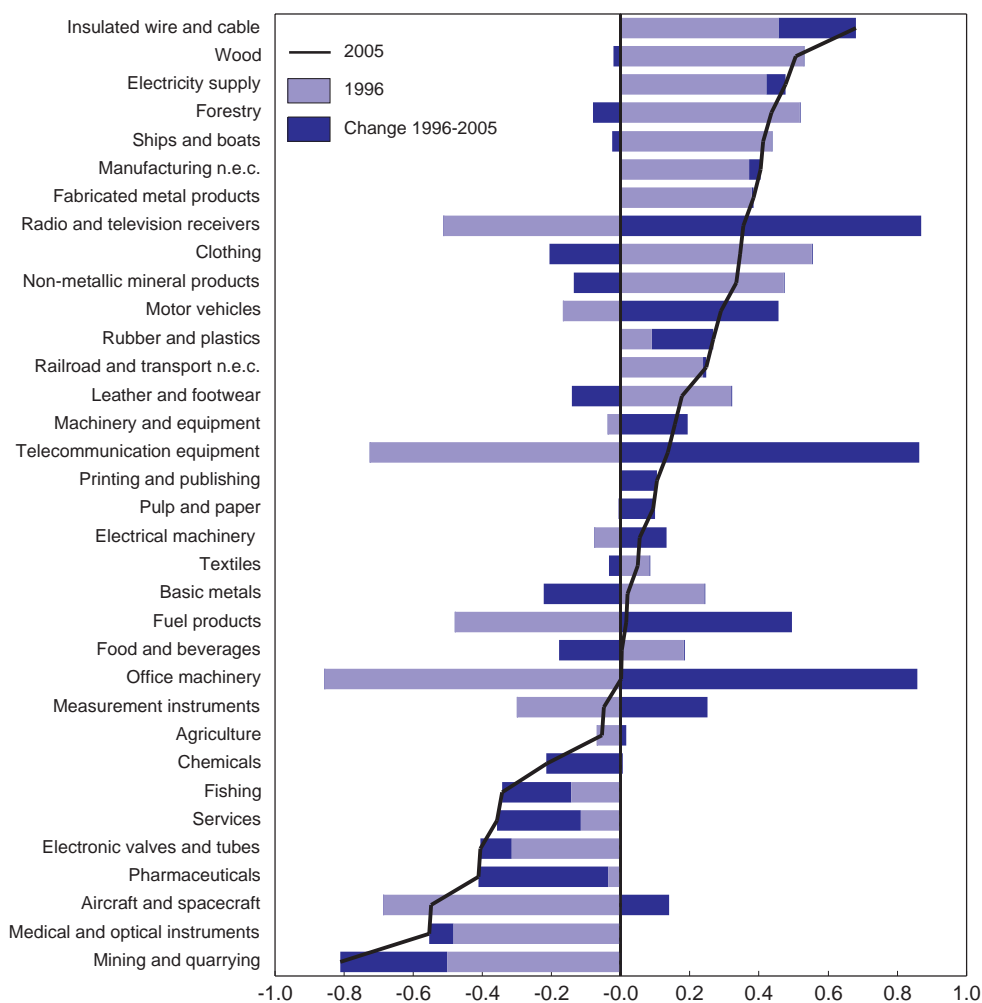
ANNEX A

Figure A.1. EU15 RCA by sector



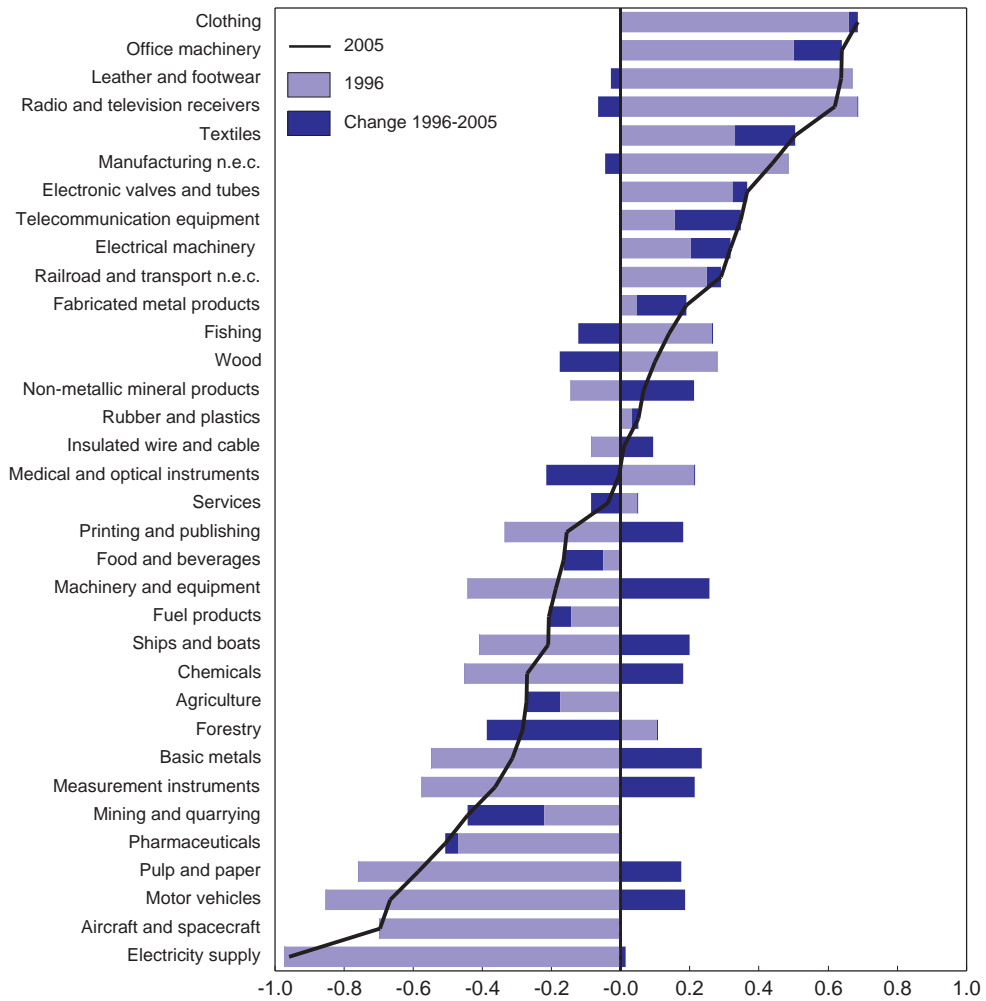
Source: UN, Comtrade database, IMF and OECD calculations.

Figure A.2. EU12 RCA by sector



Source: UN, Comtrade database, IMF and OECD calculations.

Figure A.3. Dynamic Asian RCA by sector



Source: UN, Comtrade database, IMF and OECD calculations.

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