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Globalisation challenges for Europe

Report by the Secretariat of the Economic Council - PART I

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Abstract: The report analyses globalisation and the policy challenges it poses for Europe. The report comprises 13 articles by European experts, the first describing the globalisation phenomenon and its consequences in the light of latest economic research, followed by three commentary articles to supplement the globalisation analysis. EU competitiveness and EU countries' structural policy are then surveyed in general. Two articles examine the EU internal market, while four articles analyse innovation policy widely. The final two articles discuss political governance of global and European economic policy issues.			
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FOREWORD

One of the key economic phenomena of the last two decades has been the substantial expansion of the global trade in goods, services, capital and information, accompanied by the related integration of large developing countries into the world economy. This phenomenon, known as globalisation, is not new, but rather the latest stage of a long-term process of integration. Nevertheless, it has been regarded as a fundamental change and reactions to it have been rather mixed.

The main message of economic theory is that better opportunities for exchange enhance welfare, and many empirical observations support this view. Economic growth has been rapid in large developing countries, and the standard of living has increased substantially for hundreds of millions of people. Economic integration has undeniably benefited developed countries too, e.g. through more inexpensive imports and booming export markets.

Nevertheless, in many countries, particularly in Europe, globalisation is regarded as a threat rather than an opportunity. It is feared that new competition will take jobs away and even destroy the European social model with its emphasis on small income disparities and social cohesion.

It is indeed indisputable that European economies face major adjustment challenges following the emergence of low-wage nations increasingly utilising modern technology on the same markets. Most obviously, the outcome depends on how well economies are able to exploit new opportunities and adjust to unavoidable changes.

Globalisation is a common challenge, but it affects individual countries in different ways depending on a variety of factors such as the size and openness of the economy, production structure, labour market institutions, social and economic policy traditions etc. As a small, open economy, Finland is highly dependent on international trade: on the one hand, rapidly expanding markets provide major opportunities for a small country, on the other hand, international

competition can quickly render a substantial part of domestic production unprofitable.

These two factors, the general concern in Europe over the consequences of globalisation and the crucial importance of globalisation for Finland, formed the background to the remit, given to the Secretariat of the Economic Council by Prime Minister Matti Vanhanen in March 2006 to analyse the challenges of globalisation for Europe and Finland. This analysis follows up the "Finland in the global Economy" project carried out in 2004 on the Prime Minister's initiative, examining Finland's competitiveness in the face of globalisation and presenting an array of recommendations to enhance competitiveness.

This report is divided into two parts, published as separate volumes. Part I, "Globalisation challenges for Europe", surveys the phenomenon of globalisation in the light of the latest academic research and discusses, on a general level, the ability of Europe to meet the challenges of globalisation and factors to enhance this ability. This part consists of articles by well-known European experts. The lead article on globalisation is by Professor Richard Baldwin. After the globalisation analysis, European economic performance and structural policies are surveyed. Other articles focus on themes crucial to the development of the EU internal market and innovation system. The final two articles discuss topics related to political governance. The articles and authors are listed after the foreword.

Part II of the report, "Finland's response to the challenge of globalisation", Prime Minister's Office Publications 19/2006 analyses the adjustment of the Finnish economy to globalisation and the policies implemented, and assesses possible needs to develop the policy strategy further.

This project was supported in a variety of ways by an extensive network of experts: Esko Aho, President (Finnish National Fund for Research and Development, Sitra), Mikko Alkio, Special Adviser, Esko Antola, Professor (University of Turku), Pertti Haaparanta, Professor (Helsinki School of Economics), Sirkka Hautojärvi, Permanent Secretary (Ministry of the Environment), Satu Helynen, Technology Manager (VTT Technical Research Centre of Finland), Reino Hjerppe, Director General (VATT Government Institute for Economic Research), Juha Honkatukia, Research Director, (VATT Government Institute for Economic Research), Pekka Huhtaniemi, Under-Secretary of State (Ministry for Foreign Affairs of Finland), Timo Hämäläinen, Research Director (Sitra), Johanna Ikäheimo, Chairman of the Board (Lappset Oy), Arvo Jäppinen, Sixten Korkman, Managing Director (ETLA, the Research Institute of the Finnish Economy), Reija Lilja, Research Director (Labour Institute for Economic Research), Jukka Pekkarinen, Director General of the Economics Department (Ministry of Finance), Matti Pohjola, Professor (Helsinki

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From Specialist Services for the Political Leadership at the Prime Minister's Office, the following persons have contributed to the project in various ways: Maarit Lindström, Project Manager, Iris Koskela-Näsänen, Research Assistant, Markku Harrinvirta, Counsellor, Outi Hiltunen, Departmental Secretary, Riitta Kirjavainen, Counsellor, and Pekka Sinko, Economist. I extend my warmest thanks to all of them, with special gratitude due to Maarit Lindström and Iris Koskela-Näsänen. Without their competent and untiring efforts this project would have been impossible to implement.

Vesa Vihriälä
Secretary General of the Economic Council

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GLOBALISATION: THE GREAT UNBUNDLING(S)

*Richard Baldwin*¹

Summary

Three eminent economists from Princeton University have recently argued that globalisation has entered a new phase that requires a new paradigm understand. This paper examines what is new in the new paradigm and considers the policy implications for Europe. Roughly speaking new-paradigm globalisation differs from the old in that it is occurring at a much finer level of disaggregation. Due to radical reductions in international communication and coordination costs, EU firms can offshore many tasks that were previously considered non-traded. This means that international competition – which used to be primarily between firms and sectors in different nations – now occurs between individual workers performing similar tasks in different nations. The really new feature is that deeper new-paradigm globalisation will seem quite unpredictable from the perspective of firms and sectors. Since individual tasks can be offshored, globalisation may help some workers in a given firm while harming others. Moreover, old-globalisation's correlation between skill groups and winners and losers breaks down. Certain highly skilled tasks may turn out to be offshorable, while other highly skilled tasks are not. Increased offshoring will therefore not systematically help or hurt skilled workers in the EU. In particular, many "Information Society" jobs are prone to offshoring so EU policies aimed at moving workers into Information Society jobs may be wasted since those jobs are only 'good jobs' because they do not yet face direct international competition. The paper argues that this has important implications for the EU's competitiveness strategy, education strategy, welfare states, and industrial policy. The underlying theme is that the increased unpredictability should make EU leaders more cautious about moving workers or skills in a particular direction. Flexibility is, as always, the key to allowing Europe to seize the opportunities of globalisation while minimizing the adjustment costs.

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1 INTRODUCTION

Globalisation is a new and important phenomenon – and has been since the introduction of steamships, railroads and the telegraph. While there is much to be said for this nothing-new-under-the-sun scepticism, some leading economists have very recently argued that globalisation has entered a new phase. One of the world's leading trade economists, Professor Gene Grossman of Princeton University, argues that this phase is so different that understanding it requires a 'new paradigm.' His colleague, Professor Alan Blinder goes, even further; the title of his recent paper in Foreign Affairs is "Offshoring: The Next Industrial Revolution?"

The first goal of this paper is to review what is new in the new paradigm and to extract the lessons it holds for European policy makers. "Old-paradigm globalisation" however is still very important so the paper covers more traditional globalisation issues as well.

The new and old globalisation paradigms fit together most naturally when thinking of globalisation as two great unbundlings. The cost of moving goods, people and ideas has, since the dawn of human civilisation, tended to result in the geographic clustering of production and people. Rapidly falling transportation costs – a trend which has been going on since the late 19th century – caused the first unbundling, namely the end of the necessity of making goods close to the point of consumption. More recently, rapidly falling communication and co-ordination costs have fostered a second unbundling – the end of the need to perform most manufacturing stages near each other. Even more recently, the second unbundling has spread from factories to offices with the result being the offshoring of service-sector jobs. In a nutshell, the first unbundling allowed the spatial separation of factories and consumers. The second unbundling spatially unpacked the factories and offices themselves. The old paradigm – essentially traditional trade economics – was useful for understanding the impact of the first unbundling. Understanding the second unbundling (which has variously been called fragmentation, offshoring, vertical specialisation and slicing up the value-added chain) may require a new paradigm, especially when it comes to the offshoring of services.

Before the second unbundling, firms and sectors were the finest level at which globalisation's impact was felt. More open trade spurred the fortunes of some firms while spiking the fortunes of others but the firm was the finest level of disaggregation worth looking at. Since most firms in a sector stood or fell together, the type of labour used most intensively in the sector typically shared the fortune of the firms and thus labour groups were a useful aggregate for analytic purposes. In the EU, the first unbundling systematically spiked the

fortunes of unskilled-labour-intensive industries and spurred the fortunes of skill-intensive sectors, so unskilled labour found the first round impacts of globalisation to be highly negative while skilled workers found them to be favourable.

As the second unbundling opened up firms – viewed as a black-box package of ‘tasks’ in the old paradigm – global competition came directly into factories and offices; global competition occurred on a task-by-task basis rather than firm-by-firm or sector-by-sector basis. The new paradigm helps us understand the impact of globalisation when international competition plays itself out at the level of tasks within firms. This trade-in-tasks versus trade-in-goods has subtle but important implications for policy. Before getting to these, the paper first covers the first unbundling (Section 2), the second unbundling (Section 3) and estimates of how many jobs may be offshored (Section 4). After considering the policy implications (Section 5), the paper closes with some concluding remarks (Section 6).

2 FIRST UNBUNDLING

The first unbundling occurred in two waves – one from roughly 1850 to 1914, the other from the 1960s to the present (Baldwin & Martin 1999). At a high level of abstraction, the impact of the first unbundling can be grouped into a set of stylised facts.

2.1 Globalisation: six stylised facts

Globalisation’s first bundling has been marked by six features:

Industrialisation/Deindustrialisation. In the first wave, the ‘North’ (Western Europe and the US) industrialised while South (especially India and China) deindustrialised. In the second wave, the South (East Asia) industrialised while the North deindustrialised.

International divergence/convergence. The first wave saw North and South incomes diverge massively, while the second wave witnessed a convergence, at least between the North and the industrialising South.

Trade. International trade in goods and factors exploded in the first wave. After being shut down by two world wars, a surge of protectionism and the Great Depression, the second wave was marked by a return of trade and capital flows to levels that have recently topped those seen in Victorian England. Mass international migration, however, remains small by the standards of the first wave.

Growth Take-off. Sometime before the first globalisation wave kicked in, the “Industrial Revolution” triggered modern growth in the North, but the South continued to stagnate in per capita terms. Modern growth, that is a self-sustaining growth process whereby output per hour rises steadily year-by-year, begins in the UK but spreads to Western Europe and the US around the middle of the 19th century. Of course, this is not independent of the income divergence since big differences in income levels come from sustained differences in growth rates. The income convergence in the second wave is also linked to spectacular growth in the industrialising South and a moderate slowdown in the North.

Urbanisation. While some of the largest cities in the world were in the South prior to the 19th century, the first globalisation wave is accompanied by a rapid and historically unprecedented urbanisation in the North. Northern urbanisation continued during the second wave but cities grew even more rapidly in the South.

Internal divergence. During the second wave, inequality in incomes and/or unemployment outcomes increased in the North.

2.2 The deep economic logic of the first unbundling

Globalisation has been driven by a steady reduction in the cost of moving goods, people, capital and ideas. The effects of globalisation, however, have been anything but steady. Expanding markets allowed firms and industry to exploit scale economies in the production of manufactured goods, but the results were not a gradual change. The impact came at different times to different nations, but when it did come it was considered to be a revolution, the Industrial Revolution. Likewise, the industrialisation process that occurred in some developing nations during the late 20th Century was even more revolutionary, with income growth rates often being 4 or 5 times faster than the GDP growth rates during the 19th Industrial Revolutions (Crafts 1995).

This section considers the basic economic forces that allow us to account for the six stylised facts. We begin with agglomeration forces.

Agglomeration’s hump-shape

Agglomeration forces inevitably involve circularity in their definition. Agglomeration refers to the tendency of a spatial cluster of economic activity to generate forces that foster spatial clustering. While this may seem less than fully straightforward when written in this manner, agglomeration forces are things that everyone observes everyday. People choose to live and work in big cities despite higher prices and congestion costs exactly because jobs tend to be

better in big cities; the jobs are better in the big cities because there are so many suppliers and customers, i.e. because so many people live there.

The extent of agglomeration at the city level tends to be influenced by the forces that are quite limited in their geographical impact – basically commuting distances and the need for face-to-face interaction. The agglomeration forces that are most relevant for globalisation, by contrast, operate on a vast geographic scale. For example, firms tend to set up, say, truck factories in Europe since the market for trucks is quite dense in Europe. The result of such calculations by millions of firms results in a dense network of manufacturing facilities in Europe. Thus Europe is attractive to manufacturers due to its spatially dense network of suppliers and customers, but that attractiveness serves to keep the networks dense. Note that the basic long-distance agglomeration forces stem from nearness to customers (demand side linkages) and nearness to suppliers (supply side linkages). These demand and supply linkages are traditionally known as forward and backward linkages, respectively. The way market size and agglomeration forces feed on each other is called circular causality, or cumulative causality.

One of the many unexpected features of agglomeration forces is the fact that they tend to be strongest for intermediate levels of trade freeness. The point can be illustrated by considering two extremes: when trade is completely closed and when trade is perfectly costless. When trade is completely restricted, production is necessarily bundled together with consumption since everything must be made near the consumers. Production cannot agglomerate since output cannot be shipped to customers in other nations. At the other extreme, the extreme of perfectly costless trade, the location of production becomes irrelevant. It could be completely agglomerated or it could be completely dispersed with no impact on firms' bottom-lines. At intermediate levels of trade cost – where agglomeration is both possible and useful – agglomeration forces are strongest.

The hump-shaped nature of agglomeration forces is the key to understanding the hump-shaped impact of globalisation on the location of industry, i.e. the fact that the first wave of globalisation was associated with a massive concentration of manufacturing in the North while the second wave involved industrialisation of the South and deindustrialisation of the North.

Home market magnification effect

A second somewhat counter-intuitive effect concerns the way that lower trade costs make industry more footloose, not less. In trade theory, this is known as the Home Market Magnification Effect. Paul Krugman's famous Home Market Effect explains how trade costs, scale economies and imperfect competition

combine to give large markets a disproportionate share of world industry. That is, market size itself can influence a nation's comparative advantage. It explains, for example, why successful car companies are located in the world's biggest nations, the US, Germany, Japan, etc.

A first-cut explanation of the Home Market Effect notes that firms want to locate near their customers in order to economise on shipping costs. This first-cut intuition, however, is not enough. It is necessary to explain the equilibrating force as well, i.e. to explain why not all firms in the world locate in the biggest market. While there may be many forces that discourage this sort of extreme agglomeration, an important one – and one that is affected by trade costs and thus affected by globalisation – is called 'local competition.' The local competition effect turns on the way that trade costs provide a partial shield against competition from firms located elsewhere. This tends to discourage firms from clustering in the biggest market since local competition is most intense in the biggest market.

It is useful to see how the two forces interact in a small thought-experiment. Consider a two-country world where the two nations are initially identical in size and each region has half the world's industry to begin with. Some sort of exogenous migration occurs and one region – call it the North – becomes bigger than the other region (the South). If there were no change in the spatial distribution of industry, firms in the now-big North would be especially profitable (they get to serve a larger fraction of their customers without incurring trade costs while the degree of local competition is unchanged). By the same token, firms based in the South would earn below-normal returns. Quite naturally, some industry would move from the South to the North and this movement would tend to equilibrate the profitability of the two locations. The share of industry that must move northwards to equalise profits depends upon the level of trade costs. If trade costs are quite high, then the increase in competition in the North will be quite localised and thus only a moderate amount of industry needs to move to the North in order to restore equality of profitability. And this local competition effect acts in a scissor-like manner. As more firms move northwards, competition in the northern market rises while at the same time competition in the South diminishes. This scissor-like effect is the key to the Home Market Magnification effect, so it is useful to examine it more closely.

Consider the impact of a firm that moves from South to North in response to the shift in profitability. The firm now sells its wares in the North without incurring trade costs, but at the same time, it is no longer exporting to the North. Thus on one hand, the firm's relocation raises the degree of competition in the northern market directly, but on the other hand it reduces the extent of import competition in the North. The total impact on the degree of competition in the North is the net of the two conflicting effects. As long as trade costs are

positive, the South-to-North relocation will raise the degree of competition in the North, but the net impact is *higher* when trade costs are high. This means that it takes fewer migrating firms to re-equilibrate profitability when trade costs are high. Intuitively, competition is more localised when trade costs are high, so the competition effect of a single firm's South-to-North relocation is greater when trade costs are higher.

Extending this logic, it is straightforward to see that the number of firms that must move from the South to the North in order to equilibrate profitability after the initial change in market size must be larger when trade costs are lower. In other words, firms become more footloose with trade costs are low, not less.

2.3 Accounting for the facts

The hump-shaped nature of agglomeration forces can account for three of the six facts. The account begins in 1750 or so when the world's economic geography was quite homogeneous. With the exception of a handful of cities, every region in every nation was quite similar, namely poor and agrarian. Trade costs were nearly prohibitive, both within and between nations, so each village's consumption was bundled with its production. Since the village had to make all of its own goods but could not export any surplus, it was impossible to realise scale economies. Manufactured goods were dear and the available range of varieties limited. As trade costs fell specialisation became feasible and this triggered a process of cumulative causality.

Migration of firms and workers de-homogenised the world, turning it into economically big and small markets. Due to Krugman's Home Market Effect, industry was drawn disproportionately to large regions. But since industries are marked by increasing returns, getting a disproportionate share of industry means a region's labour is disproportionately productive and this in turn results in higher real wages and/or a higher return to capital. The circle is closed by noting that capital and labour are then attracted to regions with higher rewards and their migration makes the big region bigger and the small region smaller. This agglomeration process is balanced by numerous dispersion forces. An important one in the first wave of globalisation was the diminishing productivity of labour in agriculture. As labour left the land, the productivity of the remaining labourers rose and thus it became ever more expensive for industry to hire workers away from farms.

Advances in transport technology in the early 19th century triggered this de-homogenisation of the world's economic geography. As history would have it, the North won at the South's expense. This single event is the root cause of the first three facts: northern industrialisation and southern deindustrialisation, the

rapid expansion of international trade (England becomes the world's workshop providing cheap and varied manufactured goods in exchange for raw materials), and income divergence (due to increasing returns, a high share of industry in GDP means high labour productivity and thus high incomes). This line of logic was first presented by Krugman and Venables (1995) in a paper entitled "Globalisation and the inequality of nations," but which was widely known by its working title: "History of the World: Part I."

This interplay of economics forces explains the North/South income divergence in qualitative terms, but cannot explain the massive income gap that emerged in the 19th century and persists today. To get the magnitudes right, we have to connect the location of industry to GDP growth rates. This brings us to the fourth symptom of globalisation – growth take-offs.

Growth take-offs and economic geography

The literature combining economic geography and economic growth models is based on the simple notion that transporting ideas is expensive. The result is that learning spillovers tend to be localised geographically, so a spatial clustering of industry will produce a spatial clustering of innovation, technology progress and growth.

The first growth take-off occurred in Europe. Before manufacturing was clustered geographically, industry never achieved the critical mass necessary to trigger the learning-innovation cycle on which modern growth is based. As the transport cost of goods fell with the development of inland water transport and eventually railroads, industry and thus industrial innovation and learning became geographically concentrated. The resulting innovation and specialisation gave northern industry a powerful cost-advantage over industry in the South. This favoured the North as a location for industry and it destroyed incentives for innovation in the South. In this way, lower internal and international transport costs produced industrial agglomeration that generated industrialisation and a growth take-off in the North. The same forces produced deindustrialisation and growth stagnation in the South (see Bairoch 1982 for data on the deindustrialisation of the South, especially India and China). This growth gap – which persisted for much of the twentieth century – produced what Lant Pritchett (1997) calls 'divergence big time,' i.e. the massive income gap that continues to mark today's world. This line of logic was first presented by Baldwin, Martin and Ottaviano (2001).

The 1914 to 1950 turmoil put many aspects of globalisation on hold. When it restarted, the cost of transporting goods continued to fall but it appears to be asymptotically approaching some natural limit. By contrast, and importantly, the cost of trading ideas decreased rapidly in the post-war period, with the trend

accelerating in the last 20 years or so with the spread of the internet and deregulation of the telecommunications industry. At some point, the lower cost of 'transporting' ideas generates a rapid industrialisation in the South as the South is more easily able to benefit from historical innovation in the North and more easily able to access northern markets. The emergence of southern industry forces a relative deindustrialisation in the North. The resulting deindustrialisation of the North is shown in Figure 1 and Figure 2. It is important to note, however, that globalisation has been only part of the reason why rich nations have been making a steady transition to services and away from industry.

Figure 1 Industry as share of GDP, large OECD nations, 1970–2003.

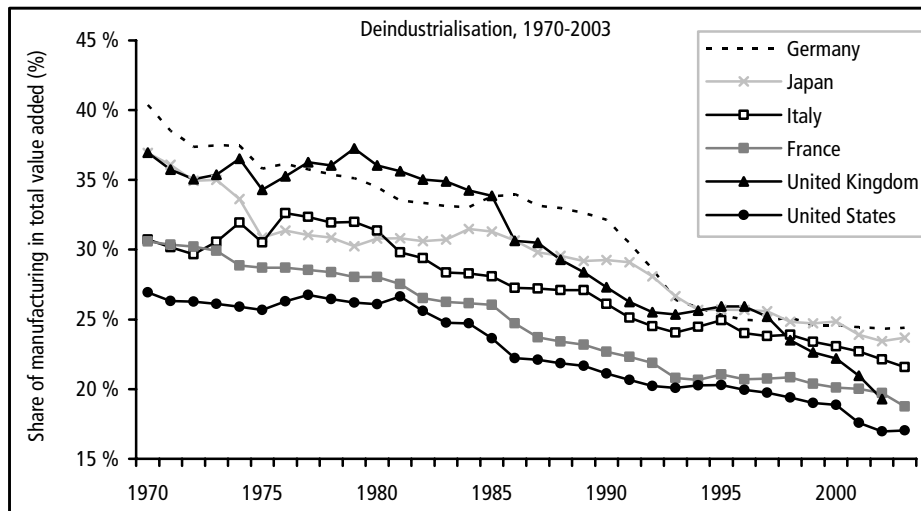
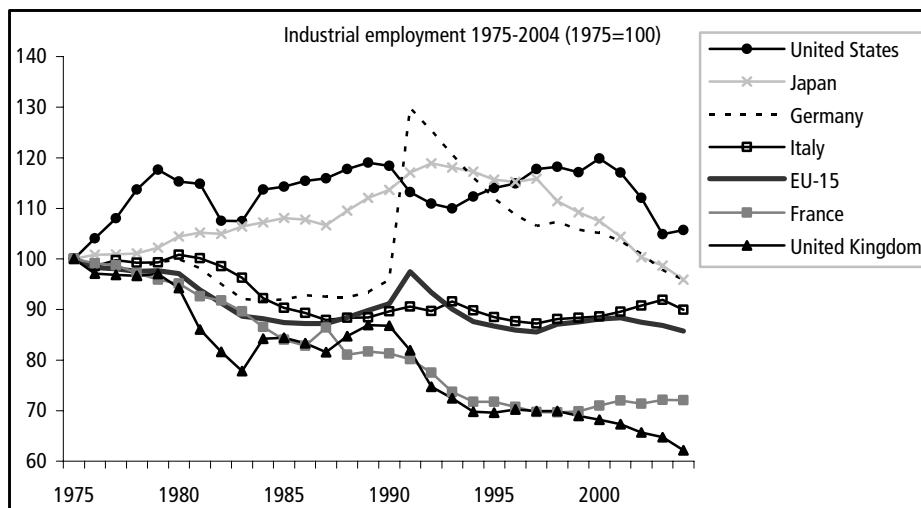


Figure 2 Industrial employment in large OECD nations, 1975–2004.



Source: Debande (2006).

Debande (2006) notes that deindustrialisation is driven by internal and external factors. Globalisation plays an important role on the external side as freer trade with the South has resulted in a shift in the production of labour-intensive activities that better reflects comparative advantage. The internal side concerns the way that OECD consumers have started to shift their consumption patterns towards non-traded services such as medical services, tourism and government services. Since they are non-traded, prices and wages adjust until sufficient labour is pulled into these sectors to meet demand. Given that there is so little labour left in agriculture, the shift to services necessarily comes at the expense of industry. A second internal factor concerns the rapid productivity growth in industry which tends to reduce the number of workers necessary to produce any given output.

Two studies, Rowthorn and Ramaswamy (1998), and Rowthorn and Coutts (2004), decompose the decline in industry's share of employment into internal and external factors. For the 1970–1994 period (i.e. before the 'new economy' boom), they estimate that more than 80% of deindustrialisation was due to internal factors in the US and the EU and 90% in Japan. Post-1994, they find that external factors are much more important in all three regions. Boulhol (2004) confirms these findings.

The only facts left unaccounted for concern urbanisation. To get this into the story, one would have to allow internal geography in nations (Baldwin-Martin-Ottaviano follows Krugman-Venables in assuming that regions are just points in space), but once the technical difficulties were mastered, the economics would be straightforward. In the first wave of globalisation, economic activity characterised by localised spillovers is concentrating in the North. It would not therefore be too surprising that urbanisation proceeded faster in the North than in the South during this era. Likewise, in the second wave of globalisation, the industrialisation of the South (emergence of the Asian tigers, etc.) strengthens the forces that foster within-South concentration of economic activity, i.e. urbanisation, while the deindustrialisation of the North does the opposite.

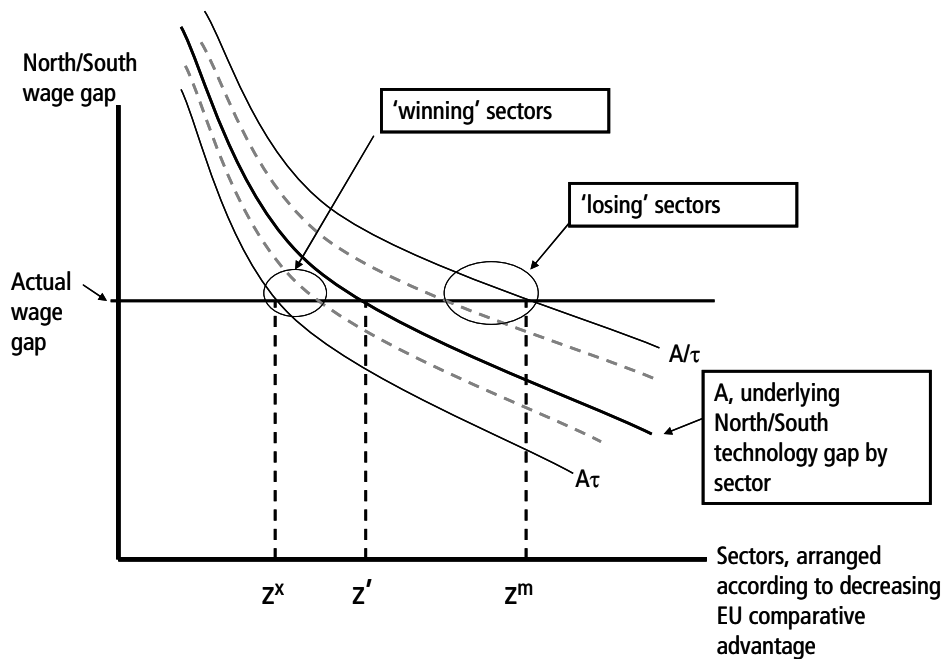
2.4 The old paradigm

In the first unbundling, one views firms as 'black boxes' since global competition occurred at the sector-to-sector level, or at the firm-to-firm level, so firms constituted the finest level of disaggregation worth looking at. The fortunes of sectors tended to be shared with the productive factors used most intensively in the sectors, so labour skill-groups were also a useful aggregate for analytic purposes.

This logic naturally directed Europe's policy responses to sectors, firms and labour skill groups. The second unbundling and the so-called new paradigm alter some of this logic. To clearly lay out what is new in the new paradigm, it is useful to present a simple framework that explains the old paradigm, i.e. the paradigm of trade in completed goods. It is important to note that the old paradigm focuses on sectors, not tasks, and on the falling cost of trading goods, not ideas.

The basic story is illustrated in Figure 3. When factories stay bundled, international competition plays itself out along the dimension of sectors, so sectors are the natural unit of analysis. The diagram shows EU sectors along the horizontal axis, ordering them according to their competitiveness. The EU's most competitive sectors are on the left (e.g. commercial aircraft) and the least competitive are on the right (say, inexpensive rope-soled sandals). What does competitiveness mean here? The curve A shows the productivity of EU firms relative to rest-of-world firms (call them 'South' to be concrete). The curve is very high to the left of the diagram since in these sectors, EU productivity is high relative to that of southern firms. This makes EU firms very competitive since they can afford to charge lower prices or produce higher quality for any given wage. The actual EU/South wage gap, i.e. the ratio of EU wages to South wages is marked with the flat line.

Figure 3 The old paradigm and the first unbundling.



The borderline sector is marked as z' . This is where the wage gap just equals the productivity gap so for sector z' , EU and South are equally competitive in the sense that the EU's higher wages are exactly offset by its superior labour productivity. In all sectors where the EU is more competitive than z' (those to the left of z'), EU firms can out-compete South firms in terms of price, quality, etc. For sectors to the right of z' , it is the southern firms that have the overall edge since their productivity disadvantage is more than offset by the wage gap.

All this ignores the central character in globalisation – trade costs. To add in trade costs, we have to adjust the productivity gap concept a bit. The cost of EU products in the southern market will be higher due to trade costs, so the EU's productivity edge in the southern market is dampened by trade costs. This is shown by the curve marked A_τ , where τ is short for trade costs. For example, without trade costs, EU and southern firms were equally competitive in sector z' ; now with trade costs, we see that southern firms would have the edge in the southern market (A_τ is below the wage gap). For the EU, the with-trade-costs borderline good in the southern market is z^x . Trade costs have the same sort of impact on the competitiveness of southern goods in the EU market. This is shown by the curve marked A/τ . For the South, the new borderline good is z^m ; this is where the wage gap and trade-cost-adjusted productivity gap are just equal for southern goods sold in the EU market. There is a gap between the borderline-competitive sectors of the EU (z^x) and the South (z^m). These sectors will be nontraded because EU firms will be more competitive than southern firms in the EU market while the southern firms will be more competitive than EU firms in the southern market. In other words, production and consumption are still bundled nation-by-nation for the sectors from z^x to z^m . Consider what the first unbundling looks like in this diagram.

Figure 3 shows the impact when trade costs come down. The EU's borderline-competitive sector shifts to the right, so EU production and exports rise in these sectors. The South's borderline-competitive sector shifts to the left and this means that EU production in these previously non-trade sectors gets downsized and replaced by imports. To sum up, if international competition takes place at the level of sectors and trade costs fall more or less evenly for all sectors, then globalisation's winners in the EU will be the sectors that were most competitive to begin with (and the citizens who work in these sectors). The losers will be the EU's least competitive sectors and the citizens who work in them. This outcome is roughly in line with Europe's actual experience (Greenaway & Nelson 2001).

Of course, globalisation was not the only force in effect. Ongoing technical changes, such as computerisation, also played a large role in determining the fate of northern unskilled labour (Hanson & Feenstra 1999). In nations with relatively unfettered labour markets, this was met with a price response – northern unskilled workers saw their incomes stagnate or fall. In nations with

highly regulated labour markets, the response came in the form of a quantity adjustment – reduced employment and heightened unemployment for unskilled workers.

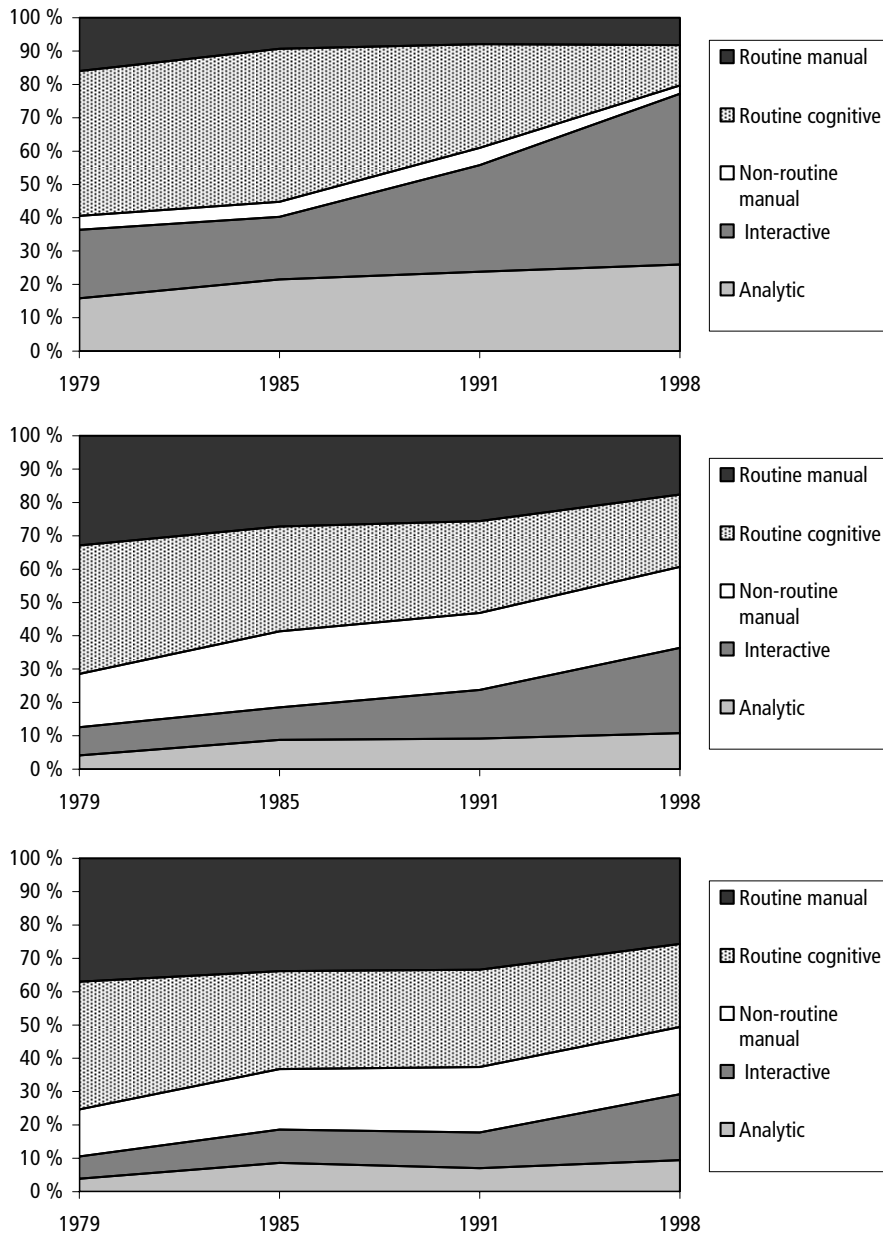
2.5 Policy thinking based on the old paradigm

This correlation between current competitiveness and the impact of deeper globalisation has had a profound effect on policy thinking in the EU and around the world. The sectors that 'won' from globalisation were the EU's most competitive sectors. The 'losing' sectors were the least competitive sectors. Going further, one could roughly associate the EU's most competitive sectors with high-tech, human-capital-intensive sectors, and the least competitive sectors with unskilled-labour-intensive sectors. In turn, one can roughly associate the winners from globalisation as the EU's high-skilled, high-education workers and the losers with the low-skilled, low-education workers.

Extrapolating from the historical experience, the old paradigm made EU leaders feel confident that they could predict which sectors would win from future globalisation and which would lose. For example, this extrapolation using the old paradigm appears to underpin EU policymakers' belief that more education is one of the ways Europe should address the challenges of future globalisation. It also seems to be part of their belief that the EU should push its economy towards an "information society".

The old paradigm also guided the interpretation of empirical evidence. For example, an excellent paper on West German labour, Spitz (2004), shows that high, medium and low skilled workers have been doing fewer and fewer routine tasks in their various jobs – and this regardless of which sector they work in. The numbers are depicted in Figure 4. The clear trend is for a reduction in the routine task performed by workers. This has been called an 'upgrading' of skills and is used to argue that the jobs of the future will require European workers to have a higher level of skills than they do now.

Figure 4 Share of tasks by type for high-skilled (top), medium-skilled (middle) and low-skilled (bottom) workers in West Germany 1979–1998.



Note: the numbers show the share of all the tasks an employee performs that fall into the five categories of tasks, so apart from rounding issues, each row sums to 100. The survey behind this did not ask employees about the amount of time they spent on each task.

Source: Spitz (2004). Table 6.

When policymakers interpret evidence like this using the old paradigm, the policy implications are clear. More education and skill-upgrading for employed workers will help Europe adjust to future globalisation. In particular, Europe's workforce should be shifted into more analytic intensive activities and provided with more analytic skills.

As we shall see below, the new paradigm introduces a line of thinking that should make EU leaders much more cautious about predictions concerning globalisation's winners and losers, the role of education and the information society.

3 THE SECOND UNBUNDLING

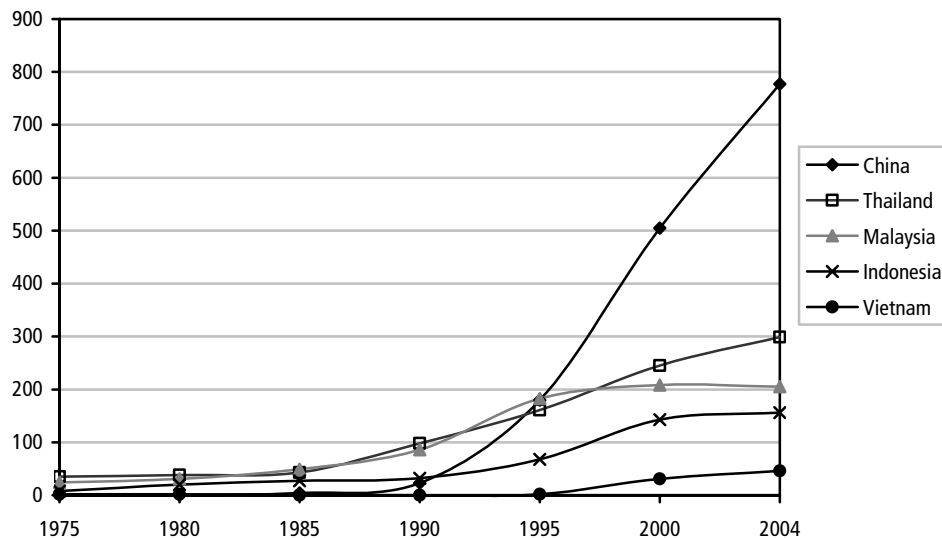
Up until the mid-1980s or so, globalisation played itself out at the level of firms, or sectors. While it might have been cheaper to undertake some labour-intensive stages of production in the South, production stages tended to be spatially clustered in a single facility, i.e. factory, because this made it easier for managers and workers to co-ordinate their work. The innumerable small and large problems that arise during production could be settled directly with little interruption to the manufacturing process and without managers and workers having to travel. Both financial and timeliness considerations meant that spatial bundling of EU labour, EU capital and EU technology in the EU made good business sense despite the wage gap.

Geographically separating various production stages became more attractive as the North-South productivity-adjusted wage gap grew, and separation became less costly with cheaper telecommunications and air shipping. The importance of distance, especially the travel cost of managers and skilled workers, can be seen in the fact that the first large-scale production unbundling took place over very short distances. In North America the Maquiladora programme saw the widespread emergence of 'twin plants', one on the US side of the border and one on the Mexican side. Although the programme has existed since 1965, it only boomed in the 1980s with employment growing at 20% annually from 1982–89 (Dallas Fed 2002, Feenstra & Hanson 1996).

The world's most spectacular second unbundling has taken place in East Asia where distances are short compared to the vast wage differences (Tokyo and Beijing are about 4 hours apart by plane, yet in the 1980s the average Japanese income was 40 times the Chinese average). Production unbundling by Japanese industry started roughly at the same time as it did in the US, namely in the mid-1980s (Fukao, Ishito, & Ito, 2003). The phenomenal growth of Japanese incomes and wages eroded Japan's comparative advantage in manufacturing.

Japanese manufacturers reacted by offshoring labour-intensive production stages to nearby East Asian nations (Figure 5). Interestingly, while this started around 1985, overall Japanese industrial employment did not fall despite the offshoring of almost all labour intensive stages of production (Figure 2), at least not until much later. Evidently, Japanese companies found that the Japan-China wage gap was justified by the Japan-China productivity gap for many industrial jobs, just not the low-skilled ones. Moreover, the offshoring of some low-wage jobs made Japanese companies more competitive in the US and European markets and this helped maintain high-wage industrial jobs in Japan. Offshoring, in other words, was a source of Japan's comparative advantage in US and EU markets.

Figure 5 Placement of Japanese automobile and electronics plants in East Asia, 1975–2004.



Source: Baldwin (2006), Figure 2.

This tendency, which has been called the 'hollowing out' of the Japanese economy, started so-called 'triangle trade' where Japanese firms headquartered in Japan produce certain hi-tech parts in Japan, ship them to factories in East Asian nations for labour-intensive stages of production including assembly and then ship the final products to Western markets or back to Japan (Urata 2001). The division of East Asia into headquarter (HQ) economies and factory economies strengthened as Taiwan, Korea, Singapore and Hong Kong experienced their own 'hollowing out' and followed the lead of Japanese manufacturing companies in off-shoring the most labour-intensive manufacturing tasks to East Asian nations whose low wages more than compensated for their low labour productivity in such tasks. China's decision in the 1980s to join the world economy accelerated the erosion of the HQ nations'

comparative advantage in labour-intensive production processes while simultaneously expanding the attractiveness of the off-shoring solution. China thus added a pull-factor to push-factors and this quickened the hollowing out of the industrial economies of Japan, Korea, Taiwan, Singapore and Hong Kong.

Even more recently, the second unbundling has reached into offices. Tasks that were previously viewed as non-traded became freely traded when telecommunication costs dropped to almost zero. Those tasks where the North-South wage gap was not justified by an offsetting productivity gap were offshored. The classic example is the moving of US call centres to India.

The second unbundling has been extensively documented at the level of intermediate goods with Yi (2003) being the classic reference. More recent evidence can be found in Hanson, Gordon H., Raymond J. Mataloni Jr, Matthew J. Slaughter (2005), and Ando, and Kimura (2005). The more recent unbundling of services has been documented by Amiti and Wei (2005); they argue that it is very difficult to measure accurately but that the available statistics suggest that it is still small although growing rapidly.

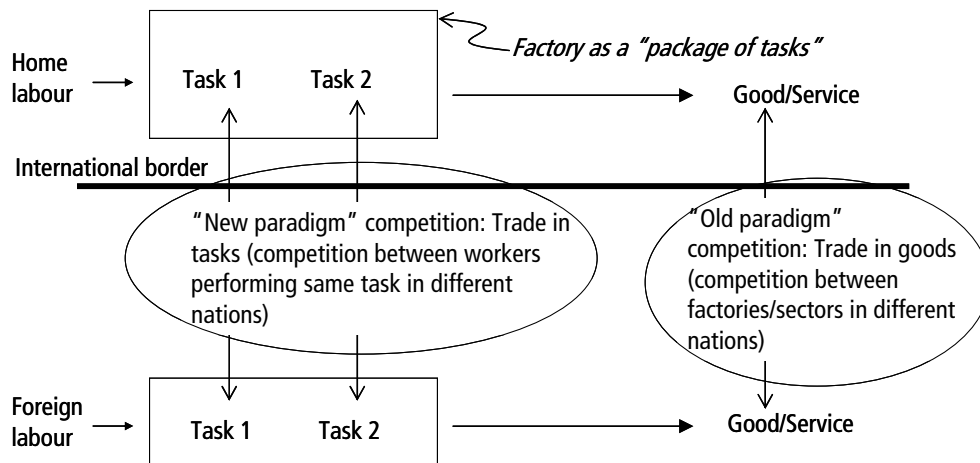
3.1 Towards a new paradigm?

When David Ricardo elaborated his theory of comparative advantage two centuries ago, he illustrated it with trade in complete goods – the famous wine-for-cloth example. This made sense since the high cost of moving goods, people and ideas kept the various stages of production spatially clustered. For this reason, one could think of the UK cloth sector as a “package of tasks.” Since the competition was between Britain’s package of tasks and Portugal’s package of tasks there was nothing to be gained from opening up the cloth sector black-box technology, i.e. thinking about the exact tasks necessary to make cloth. The radical fall in the cost of moving goods, people and ideas – especially the drop in the cost of moving ideas – has resulted in the second unbundling.

This meant that international competitive pressures operated on economies with a finer resolution; instead of harming or helping the fortunes of a firm as a whole, it could reach right into the factory and help or harm one particular production stage, or even one particular department, or job. A key aspect of this is that the type of job – call it a ‘task’ – that is harmed by extra international competition may well be a task that exists in a wide range of sectors. For example, data-entry tasks may be offshored by labour-intensive sectors and capital-intensive sectors alike. One implication of this is that it will be less useful to classify the winners and losers from future globalisation according to the sector in which they work, or the skill group to which they belong. The task

becomes the common denominator rather than the traditional sector and/or skill aggregates. This is illustrated schematically in Figure 6.

Figure 6 The first and second unbundling schematically.



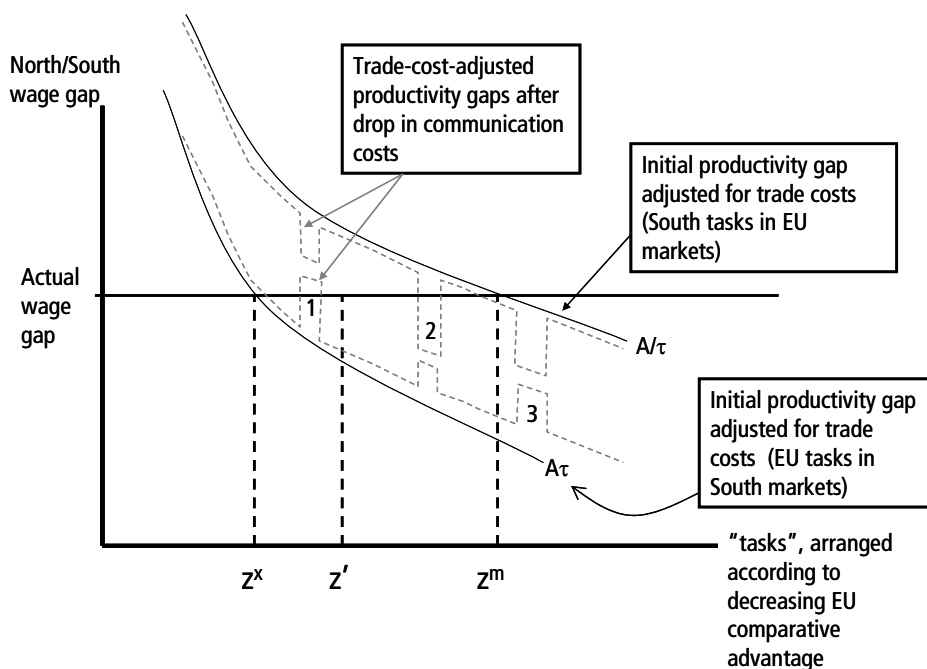
These changes have very recently led three eminent economists – Alan Blinder, Gene Grossman and Esteban Rossi-Hansberg – to call for radical new thinking (Grossman & Rossi-Hansberg 2006a, b, Blinder 2006). Indeed, Gene Grossman, who is one of the world’s leading trade theorists, calls for a “new paradigm” in trade theory, one that puts ‘tasks’ rather than goods and firms at the focal point (Grossman & Rossi-Hansberg 2006b). Alan Blinder’s contribution finds its strength more in its inspiration and motivation than in its precision, so it is not perfectly clear what is new in his view. The papers by Gene Grossman and Estaban Rossi-Hansberg by contrast are based on a specific mathematical model, so their newness can be precisely identified. The Blinder paper is addressed first.

3.2 What is new about the new paradigm?

As shown below, the new paradigm introduces a line of thinking that should make EU leaders more cautious about predictions concerning globalisation’s future winners and losers, the role of education and the information society. To make this point – how and why the tasks-versus-sectors distinction is critical – it is useful to portray the new paradigm in a diagram akin to Figure 3. The new paradigm diagram, Figure 7, is very similar to the old paradigm diagram, but the EU’s competitiveness is defined by task rather than by sector. As before, the tasks are ranked according to trade-cost-adjusted comparative advantage, with the EU’s most competitive tasks to the left. Note that this ordering may bear no

resemblance to common perceptions of the EU's competitiveness since common perceptions assume that global competition occurs among firms, i.e. specific packages of tasks. For example, the EU might have a big productivity edge in, say, fission engineering, so fission engineering would be on the far left. This is different to the old paradigm since fission engineering is used in several sectors (electric power generation, medicine, military, etc.) so the productivity edge in fission engineering was bundled together with the productivity edge of all sorts of other tasks, such as the design of machine tools, complex project management, accounting and marketing services. Moreover, tasks where trade costs are prohibitive, say taxi driving, are also on the far left.

Figure 7 The new paradigm: tasks not sectors.



Although the diagram is quite similar in the initial situation, the analysis of lower trade costs is quite different. Rapid advances in information technology and plummeting costs of communication have radically reduced the cost of trading some tasks but not others, and this is important. Under the old paradigm, the unbundling mainly concerned goods. Since the cost of shipping goods does not vary radically according to the nature of the good, it was reasonable to view the lower trade costs as affecting all the sectors in the same way. When it comes to tasks, however, the situation is very different. Some tasks, say truck driving, are completely unaffected by reduced international co-ordination costs, while others, say, call-centre services are highly affected. It could happen that the truck drivers and the call centre employees were working for the same sector, say a

home PC delivery company. In the old paradigm, there was little wrong in lumping the two tasks together as long as one could be fairly sure that the driving and call-answering jobs would remain bundled geographically. The second unbundling questions this belief, so it becomes important to look at the impact of globalisation on tasks rather than sectors.

To illustrate this, the new A curves are shown as jumping around due to the lower cost of trading ideas. Some tasks that were previously non-traded become traded. For some of these tasks the EU starts exporting (see point 1 in the figure 7), while for others it starts importing (point 2). Other tasks may see a big change in trade costs but no massive switch in competitiveness; the South was competitive in tasks 3 before and after the trade cost reduction.

In Figure 7, the change in trade costs look arbitrary and this is intentional. More precisely, there is no reason to believe that changes in trade costs will be correlated with the initial competitiveness of tasks. As far as policy making is concerned, there are three really new things going on here.

1. Unpredictability. The winners and losers from globalisation are much harder to predict.

By their very nature, lower trade costs for goods tend to affect all traded goods in roughly similar ways and this is why one could tell which sectors would win from further trade cost cuts in Figure 3. When the main barrier is the cost of exchanging information and coordinating production across distances (trading ideas), it is difficult to identify winning and losing tasks. Knowing the direct cost of telecommunications is not enough since it interacts in complex and poorly understood ways with the nature of the task and the task's interconnectedness with other tasks. Economists do not really understand the 'glue' that resulted in the bundling of various tasks into packages (factory and offices), so the way in which various tasks come unglued will be unpredictable until economists know much more about the glue.

2. Suddenness.

A job which 3 years ago was considered absolutely safe – say a German computer programmer designing custom software for a Landesbank – may today be offshored to India, or outsourced to a German software firm that offshores the job to India. The deep reason for this suddenness lies in the nature of complex interactions within factories and offices. Telecommunication costs have fallen rapidly but the impact has been quite different for different tasks. This may be due to the organisation of tasks within offices and factories. This organisation has changed more slowly. At some point – what might be called the tipping point – cheap communication costs line up with new

management technology and a new task can be offshored to a lower cost location. More on this in the next section.

3. Individuals not firms, sectors or skill groups.

In the first unbundling, one could view firms as black-box bundles of tasks since firm-against-firm competition was globalisation's finest level of resolution. In sectors where backward and forward linkages among firms were important, a nation's sector could be viewed as a bundle of firms whose joint actions determined the sector's competitiveness. The competition was sector-to-sector, so individual firms that were not competitive on a stand-alone basis might still prosper due to the agglomeration economies flowing from their location. The new paradigm suggests that the forces of globalisation will achieve a far finer resolution; it predicts that international competition will increasingly play itself out at the level of tasks within firms. New paradigm competition is on a much more individual basis and this has some implications for policy that we discuss below. Policies designed to help sectors may miss globalisation's losers entirely.

Of the three novel features of the new paradigm, the most troubling from a policy perspective is its unpredictability. The next subsection discusses this feature in more depth.

3.3 The unpredictability of globalisation's impact

Under the second unbundling, the impact of globalisation becomes more unpredictable from the perspective of sectors and skill-groups. In Figure 7, the sectors where the EU gains and loses competitiveness are not easily identified ex ante. In particular, there is no reason to believe that workers in the EU's most competitive sectors will be the winners going forward. Nor is there any reason to believe that most of the winners will be highly educated, or involved in analytic tasks as opposed to manual tasks. Many of Europe's workers are now doing jobs whose price is set in the local market – not the global market – since their jobs face no realistic competition from abroad. As a consequence, one cannot be sure that the EU/South wage gap in these jobs is justified by the EU's productivity edge. Indeed, the logic of Figure 7 suggests that many of the non-traded workers in the EU are paid wages that are not justified by their productivity edge. If the second unbundling comes to their occupation, they are very likely to lose their job or suffer pay cuts.

Tipping points and critical-mass offshoring

Blinder (2006) and Krugman (1996) hint at this unpredictability, but they do not flesh out any economic mechanisms. This section considers a number of economic mechanisms that could magnify the unpredictability.

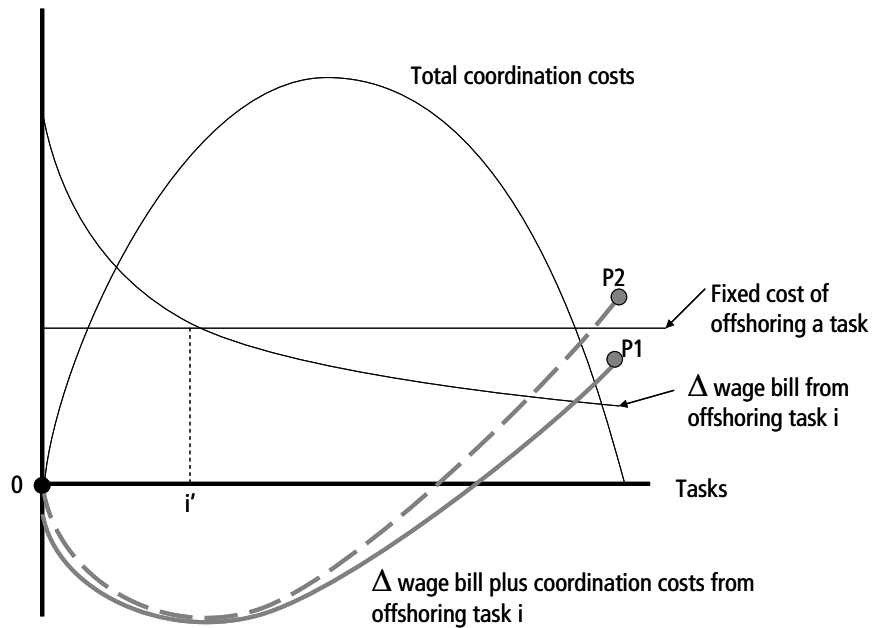
Start from two assertions. First, it is not a random outcome that the production of goods and services is undertaken in factories and offices throughout the world. Spatially clustering production stages, i.e. packaging tasks in offices and factories, incurs certain congestion-linked costs so one can deduce the existence of congestion-linked benefits. Second, economists really do not understand the 'glue' that binds production stages and tasks together. The standard approach, production functions, is a black box; one assumes that certain amounts of productive factors are combined to produce a certain amount of output. Given this lack of modelling – to say nothing of a lack of empirical work in the area – economists cannot really pretend to understand the conditions under which various bits of a production process will be offshored. To illustrate this lack of understanding, consider two very simple frameworks that suggest the problem is analytically tractable, but might be very complex. Moreover, moving to empirical work in the area would seem to require data that is not currently collected since the current statistical agencies typically view the economy as a sequence of sectors rather than viewing sectors as packages of tasks.

The first framework concerns co-ordination costs. Consider a simple model that explains why a particular 'team' of tasks is spatially clustered in a single office. To be concrete, say there are 'n' tasks – each performed by one worker – that must be performed to produce the intermediate input (say a marketing report) which is itself fed into a larger production process. Co-ordinating the n tasks requires each worker to talk, say, once a day with every other worker. Turning to offshoring possibilities, assume that offshoring entails a fixed cost per task offshored, and that each of the tasks could be performed more cheaply in India. That is, the EU wage gap is not fully justified by the EU productivity gap for all five tasks, but the mismatch of wage and productivity gaps is larger for some tasks.

The situation is illustrated in Figure 8. The declining curve, marked ' Δ wage bill', shows the reduction in the wage cost per tasks (tasks are ordered so that this curve is declining). The flat line shows the per-task cost of offshoring. If one were to ignore the co-ordination costs – i.e. the reason that the tasks were packaged together into one office to start with – then one would conclude that all tasks from zero to 'i' would be offshored since the savings on wage costs would exceed the offshoring cost. Marginal changes in offshoring costs and/or the wage gap would lead to smooth changes in the number of tasks offshored. Moreover, one can see that detailed task-level information on the wage and

productivity gaps would allow economists to predict which tasks would be the next to be offshored.

Figure 8 Tipping points and all-or-nothing offshoring.



Taking co-ordination costs into account changes everything. To be concrete, suppose talking face-to-face is more efficient in terms of time than talking over the phone, Instant Messaging, or email. To keep things simple, say face-to-face communication is costless but over-a-wire communication has extra time costs per communication. If all the tasks are performed in the same office, the coordination costs are zero – and this is true whether the office is in Finland or India. Coordination costs are maximised when half the tasks are done in India and half in Finland. Thus coordination costs are convex in terms of the number of offshored tasks as shown in the diagram. How does this change the decision to outsource tasks?

The heavy curve that stretches from point O to point P₁ illustrates one possibility. The curve sums up the marginal drop in wage costs with the marginal change in co-ordination costs. In the example shown in the diagram, this curve starts out negative since it is assumed that the increase in co-ordination costs outweighs the drop in wage costs. This wage+co-ordination savings curve must be compared to the fixed cost of offshoring each task. Since the OP₁ curve is always below the fixed cost line, no tasks would be offshored.

Now consider a small change in the coordination costs due, say, to a reorganisation of the office, better team-management, or more efficient telecommunications such as video-phones. This would rotate the wage+coordination savings curve to, say, the OP_2 curve. Since point P_2 is now above the fixed cost line all the tasks would be offshored. This is the tipping point. Due to the natural convexity of co-ordination costs, offshoring of tasks happens in a lumpy fashion. In this simple example, no tasks are offshored for all co-ordination costs up to a certain level, but beyond that point all tasks are offshored. Importantly, it might seem that the tasks from i' to n were 'incorrectly' offshored, if one did not consider the coordination costs. Since it is extremely difficult to measure co-ordination costs in the real world, this incidence of offshoring might seem unpredictable given current statistical information available to governments. The second model assumes a richer set of interaction among the various tasks.

Another key source of unpredictability could come from agglomeration economies. In many cases, the provision of various tasks is subject to important backward and forward linkages that involve the cost of moving goods, people and ideas. Given the massive New Economic Geography literature, we have a whole library of analytical frameworks to draw from in modelling this. One particularly relevant model is that of Puga and Venables (1996). This so-called critical-mass-development model explains why, for example, industrialisation jumped from island to island in East Asia, starting with Japan and moving on to Taiwan, Hong Kong, Singapore and Korea instead of moving more gradually into all East Asian nations at the same time. Transferring the lessons to offshoring tasks, it suggests that the very low level of offshoring that is now seen in service sector cannot be taken as a good indication that the level will remain low. When agglomeration economies are important, marginal changes can lead to very large shifts.

3.4 Thinking about offshoring

Most of the elements identified above as new have not been thoroughly studied from a logical or empirical perspective. The mainstay models of the second unbundling focus on issues such as the size and distribution of the gains from offshoring under various assumptions. Most work in the simple setting of perfect competition and constant returns. This section covers the insights from this work that are most relevant to policy.

3.5 Insight #1: Production unbundling as technical progress

In 2004, Greg Mankiw announced to the US business media that offshoring was just like trade in goods: “More things are tradable than were tradable in the past,” Mankiw said, “and that’s a good thing.” Mankiw was in good company since trade theorists have long modelled production unbundling as if it were just like trade in goods. The key insight in this type of offshoring – what might be called Mankiw-offshoring – is that it acts like technical progress.

Mankiw-offshoring means new trade – trade in intermediate goods and services that were previously packaged together in a black-box production function. This new trade implies gains from trade as usual but because the new trade involves intermediate goods the end result is that more final goods can be produced from any given quantity of primary factors. That, of course, is just the definition of technical progress, so at a very deep level, production unbundling can be thought of as technical progress in final goods sectors. This insight, which stretches back to at least Adam Smith and his pin factory example, is very helpful in explaining why governments should view offshoring as an opportunity rather than a threat – despite the fact that it might cause displacement in the labour market.

The analogy is not perfect and many subtleties are hidden by it but the fragmentation-as-technical progress model has proved a popular and enduring way of organising our thinking about offshoring. The work by Ron Jones and co-authors and by Alan Deardorff on fragmentation are all variants of this Mankiw-offshoring, although of course they allow many more things to vary in their models, so the results are typically ambiguous.²

3.6 Insight #2: Grossman-Rossi-Hansberg mechanism

Grossman and Rossi-Hansberg (2006) argue that a new paradigm is needed to fully evaluate the implications of offshoring. Their version of the new paradigm, which will surely transform the debate on offshoring, decomposes the impact of offshoring on wages into three effects that might be called the terms of trade effect, the jobs effect and the productivity effect. To illustrate these three it is useful to think of the world as Adam Smith’s pin factory. That is, imagine the only thing the world makes is pins, so everyone everywhere works in a pin factory. Of course this is wildly unrealistic, and one must generalise the point,

² For example see Dixit and Grossman (1982), and various papers by Ron Jones and Alan Deardorff (Findlay and Jones 2000, Jones and Kierzkowski 1990, 1998, etc., Deardorff 1998a,b). For an even older tradition see Batra and Casas (1973).

but just as some of life's hardest lessons are best taught with simple parables, really hard economics is often best explained with simple examples.

In Adam Smith's pin factory, manufacturing a pin required twelve distinct 'tasks'; drawing out the wire, straightening the wire, cutting the wire, sharpening the pointy end, grinding the top end, making the pinhead (which itself involves three distinct tasks), attaching the pinhead, whitening the completed pin, and putting the pins into the packaging.

What would be the wage of a worker who did all twelve tasks for each pin? Roughly speaking, workers get paid a wage that is proportional to their productivity, so the wage would be tied to the average of the worker's productivity in all of the tasks. Now suppose that the cost of trading goods and ideas falls to the point where it becomes feasible to spatially separate 6 of the tasks, with these 6 tasks being offshored to a low labour productivity nation with correspondingly low wages. Which 6 of the 12 tasks would be offshored? Even if the home worker's productivity is higher in all 12 tasks, the home worker's productivity 'edge' is unlikely to be exactly the same in all 12. According to the usual principle of comparative advantage, the tasks that will be the most profitable to offshore will be the tasks in which the home worker's productivity edge is the least.

This offshoring will engender three effects. The first is the well-known terms of trade effect. Since some of the work is now done by low wage workers, the price of pins is likely to fall. Other things being equal, this would harm the real wage of home pin workers. The second is the jobs effect, that is to say since some of the home workers' work has moved offshore, the demand for home workers will fall and other things being equal, their wage would have to fall to maintain full employment. But all else is not equal. In particular, home workers are now focusing on tasks where their productivity edge is greatest. This, in turn, means that the home worker's average productivity will rise and because his wage is tied to the average of his productivity in all the tasks he performs, his wage will, all else being equal, rise to match the boost in his productivity; this is the productivity effect, which is one of the really novel element in the Grossman-Rossi-Hansberg paradigm. Letting larger doses of reality back into this parable does nothing to alter the basic message. In a nutshell, the Grossman-Rossi-Hansberg (GRH) paradigm stresses the fact that every worker's productivity is linked to his/her average productivity in the tasks he/she performs. Offshoring allows home workers to focus on the tasks that they do relatively well and this tends to raise their overall productivity and wages. This is true whether pins are the only good produced or just one of millions of goods produced. Moreover it is true whether there is only one type of labour or many types. Of course, the terms-of-trade and job-loss effects may overwhelm the productivity effect, but the Grossman-Rossi-Hansberg paradigm allows us to

focus more clearly on the true alternative. If the price of traded goods falls and offshoring is not allowed, then home workers will face drop in wages that is even greater. Or to put it more colloquially, German auto companies' offshoring of some labour-intensive jobs to Poland may save German jobs since the alternative is that all auto jobs leave Germany.

Grossman and Rossi-Hansberg (2006) present some evidence that this new division of labour is already proceeding. They draw on a five-way division of the US labour force prepared by Autor, Levy and Murnane (2003) from highly disaggregated data, aggregating the Auto-Levy-Murnane categories into 'routine' and 'non-routine' tasks. The idea is that routine tasks, which include "routine manual" and "routine cognitive" categories could be offshored to educated workers in low-wage nations. Non-routine tasks, by contrast, require face-to-face interaction and continual re-optimisation and re-evaluation; these are not, therefore, the sort of tasks that can be unbundled. These include the Auto-Levy-Murnane categories of "nonroutine analytic," "nonroutine interactive" and "nonroutine manual." Observe that a plumber performs a non-routine task while a low-level software engineer performs a routine task. According to this aggregation, the share of US jobs that entail routine tasks has fallen since 1970, with accelerating since 1990. By construction, the share of jobs in non-routine tasks has followed a mirror-image rise. Grossman and Rossi-Hansberg (2006) --- GRH for short – marshal this as evidence that the offshoring of routine tasks has already started. For Europe, Spitz (2004) shows that the actual range of tasks undertaken by German employees has moved away from routine tasks and towards tasks that one might think are harder to deliver via fibre optic cable (Figure 4).

3.7 Insight #3: Samuelson's caveat

One aspect that distinguishes GRH-offshoring from Mankiw-offshoring is GRH's assumption that offshoring involves task-specific technology transfer. Under GRH-offshoring, the home's superior technology gets combined with cheap foreign labour in the foreign nation.³ This tying of offshoring and technology transfer suggests that GRH-offshoring might be harmful to the offshoring economy since not all technology transfers are good for technologically advanced nations – a caveat that Paul Samuelson so famously shared with the public in Samuelson (2004). The point is easily explained.

Every nation has a comparative advantage in something. When it comes to rich nations, the advantage is often based on superior technology. This productivity

³ In traditional trade theory, one assumes that technology is nation specific, so the offshored task is done using foreign technology.

edge results partially in lower priced exports but partly in higher domestic wages – the nation’s technological edge is split between consumers and workers. If this technological edge in the export sector is eroded, then the erosion will be shared between workers and consumers. The resulting fall in worker’s wages may make the technologically advanced nation worse off. This is what Paul Samuelson was referring to. It is a point that has been well understood by trade economists for ages, but it does not apply to GRH-offshoring.

The potentially harmful technology transfer concerns the nation’s export sector. Such transfers can hurt since they are, in effect, giving a boost to the nation’s competitors. By contrast, if the technology transfer is in the transferring nation’s import sector, the net effect will be positive since it will induce a positive terms of trade effect (cheaper imports). As usual, cheaper imports create winners and losers, but the winners win more than the losers lose – basically because the nation consumes more of the good than it produces (the definition of imports). Notice, however, that the technology transfer in Grossman and Rossi-Hansberg (2006) inevitably ends up producing something that is then exported to the home country. Because of this, the GRH technology transfer is generally welfare improving for the home nation.

4 HOW MANY JOBS WILL BE OFFSHORED?

As an ongoing part of the first unbundling – the geographic separation of production and consumption of goods – industrial workers learned that they were competing with foreign labour via the price of goods. Service workers in rich nations, however, have typically not learned this lesson, but as the falling cost of moving goods, people and ideas continues to fall, the range of domestically produced services that face direct competition from foreign service-providers will expand.

Which jobs are likely to be subject to this new competition? Krugman (1996) emphasised that the key distinction lies in the tradability of services – not in the level of education. This point, which has recently been picked up by Blinder (2006) and Grossman and Rossi-Hansberg (2006a, b), indicates that the past may not serve as a good indicator of the future. In recent decades, high-education, high-skilled workers flourished in the face of globalisation while less-educated workers suffered. The basic force was the unbundling of production and consumption so that relative goods prices in all nations tended to converge. This was good for rich-nation workers whose skills were relatively abundant (their talents were un-priced by the bundling) but bad for those whose skills were relative scarce in the closed economy (their talents were over-priced by the bundling). Since education was relatively abundant in rich nations while

unskilled labour was relatively scarce, globalisation seemed to be a boon for highly educated citizens.

In the on-going globalisation wave, the unbundling is not cleaving the labour market according to skill levels since the unbundling is taking place at a much, much finer level. Tasks that can be provided at a distance are likely to be offshored, but the list of these tasks is unlikely to line up with educational attainment or at least not as neatly as it has in the past.

Consider the following contrasting examples inspired by Blinder (2006). A taxi driver in Sweden is radically overpaid by world standards in the sense that although a taxi driver in Stockholm is probably somewhat more productive than a taxi driver in Delhi, the Delhi-Stockholm wage gap far exceeds the productivity gap. Given market forces, this situation is only possible since driving a taxi is non-tradable and this means that Delhi cabbies are in no sense in competition with Stockholm cabbies. The prices of non-tradable tasks are not set on the world market, they are set locally and no one would drive a cab in Stockholm unless the wage was high enough to pull workers out of other jobs (or the unemployment rolls). When it comes to taxi services, this situation is unlikely to change.

A computer security analyst was also a job that was, until recently, considered non-tradable. German companies hired security analysts in Germany and so their salary was set in the German market. Again, German programmers in Germany were probably somewhat more productive than Indian programmers in India, but the wage gap was not justified by the productivity gap. However, many routine security services can be provided remotely. At first 'remotely' may have meant an IT office located in the same building and then an IT office somewhere in Germany. The drop in communication costs and superior management technology means that 'remotely' may now mean Bangalore. This switch implies that German and Indian IT workers employed in these specific tasks are now in direct competition. Any German-Indian wage gap must be justified by an offsetting productivity gap. These examples illustrate that the new division of labour is more about whether the service can be easily delivered down a fibre optic cable – a divide that corresponds very little to the traditional distinctions between jobs that require high levels of education and jobs that do not.

Notice that cheaper trade in goods and ideas has a quite different implication in manufacturing where the North-South wage gaps have already been brought more or less into line with the North-South productivity gaps. In Japan, for instance, the emergence of China resulted in a massive offshoring of labour-intensive production jobs, but since this boosted the competitiveness of Japanese industry on the world market, there was very little downsizing of

overall manufacturing employment. Japanese industrial workers specialised in tasks where they maintained a productivity edge that exceeded the wage gap with Chinese workers (as predicted by GRH-offshoring).

Estimates from the US literature

Bardhan and Kroll (2003) estimate that about 10% of the US labour force is employed in occupations that could be offshored; they include professions such as financial analysts, medical technicians, paralegals, and computer and maths professionals. The other prominent projections have been advanced by consulting firms. The dominant and most widely quoted projection of future job losses is Forrester Research's "3.3 Million US Services Jobs to Go Offshore" (McCarthy 2002). Jensen and Kletzer (2005) cite a variety of estimates of the jobs at risk of delocation.

Van Welsum and Reif (2005) and Van Welsum and Vickory (2006) classify "offshorable" jobs as those characterised by four features:

- IT intensity,
- output that is IT transmittable,
- tasks that are codifiable, and
- little face-to-face interaction.

They classified about 20% of the US workforce as being offshorable.

Mann (2005) uses detailed US Occupational Employment Statistics to trace out the change in the number of jobs. She points out that it is low-wage workers in IT industries that have been hit the hardest, with almost one-third of the jobs disappearing between 1999 and 2004, and this despite the very low salaries. In the occupations in this group, e.g. telemarketers, switchboard operators, telephone operators, computer operators, etc., the average annual salary was just \$25,000. By contrast, workers in occupations that were high-skilled, judgement-oriented and problem-solving earned almost three times as much and saw the number of these jobs increase by about 17% over the same period.

European estimates

The European work has been less comprehensive, focusing on individual nations. Marin (2004) estimates that production relocation produced the loss of 90,000 jobs in Germany and 22,000 jobs in Austria, which represents 0.3 percent and 0.7 percent of total employment in the two nations respectively. Another study of offshoring, Falk and Wolfmayer (2005), suggests that offshoring reduced industrial employment in Europe by 0.3 percent annually during the 1995–2000 period. They find a good deal of variation across sectors with some of the rapidly growing sectors experiencing no job loss from offshoring.

Amiti and Wei (2005) take a different tack by directly studying the services trade data. They find that service outsourcing has steadily increased in recent years, but since it started at a very low level, it is not yet an important phenomenon. US imports of computing and business services were just 0.4 percent of GDP in 2003, although this share has roughly doubled each decade from 1983. Evidence that these authors extracted from input/output tables paints a similar picture showing that material outsourcing is far more important than service outsourcing. They also demonstrate that the widespread media concern over service outsourcing is misguided; the US and other industrial countries are net exporters of these services. For the US, the net surplus has actually risen in recent years (the US is both the largest importer and largest exporter of computing and business services). Amiti and Wei (2005) also analyse the effects of offshoring on employment, taking Britain as the example. They find no evidence that suggests that offshoring fostered job loss during the period 1995 to 2001.

Ekholm and Hakkala (2005) analyse the effects of offshoring of intermediate input production on labour demand in Sweden, grouping workers by educational attainment. They find that offshoring to low-income countries reduces demand for workers with an intermediate level of education. Offshoring to high-income countries (the main type in Sweden's case) has no statistically significant effect. Other studies grouping workers by educational attainment also find that offshoring reduces demand for middle-skilled workers, e.g. Falk & Koebel (2003) for Germany.

See Kirkegaard (2006) for a synthesis of the US, European and Japanese studies.

5 POLICY IMPLICATIONS

Globalisation can be thought of as an unbundling of things. Roughly speaking, the first unbundling meant that it became economical to locate factories far from consumers. The second unbundling meant that it became economical to 'unpackage' the factories and locate various production stages far from each other. Both unbundlings opened up new opportunities for European firms to raise their productivity. Seizing these opportunities in the past has required adjustments for European firms, workers and governments. Going forward, globalisation will continue to open up new opportunities and continue to require adjustment. This line of thinking underpins the standard policy recommendations when it comes to globalisation. Since the gains from trade almost always come with pains-from-trade, the government's job is twofold. Government policies, especially labour market, R&D and education/training

policies should aim to reduce the pain by facilitating the necessary adjustments. Government social policies, especially safety net policies, should be in place so as to assure voters that the gains and pains of any new opportunity will be shared. This is essential to maintaining a political consensus in favour of change in general and globalisation in particular. Political support for change is essential since growth requires change.

The new paradigm does nothing to alter these basic policy implications. It may, by contrast, suggest that they need to be more subtly implemented in the future. Before turning to these novel thoughts, it is worth stressing that the old paradigm is still very much with us. International competition still plays itself out at firm and sector level.

5.1 Policy lessons from the new paradigm

Section 3.2 suggested that there are three really new things in the new paradigm as far as policy is concerned: (1) unpredictability, (2) suddenness, and (3) individuals versus firms or sectors. Of the three, the most relevant to policy is unpredictability.

Unpredictability at sector and skill-group level

How does unpredictability change policy conclusions? The old competition-at-sector-level paradigm and historical experience made EU leaders feel confident that they could predict which sectors would be sunrise sectors and which would be sunset sectors, which skills would face growing demand and which would face falling demand. Specifically, the old paradigm predicted that Europe's most competitive sectors and the people who work in them will win from future globalisation while Europe's least competitive sectors and their workers will lose. This was perhaps what underpinned EU policymakers' belief that it would be useful to push the EU economy towards what most people felt would be a sunrise sector – the "Information Society". It also led to a widespread belief that more education and "skill upgrading" was one way governments could lower adjustment costs.

From the new paradigm's perspective, these policies seem too blunt and entirely too self-assured. Consider an example. The EU's medical sector is surely a sunrise sector. It is highly competitive on the world level due to its technological edge and highly skilled workforce. Patients from around the world would buy EU medical services if it were not for the difficulties of delivering the service over long distances. As technology progresses, certain medical tasks may well be able to be performed over long distances. Arthroscopy (so-called keyhole surgery) is done by a doctor manipulating controls while looking at a computer screen. In

principle, the patient and surgeon could be in different rooms, and again in principle the rooms could be in different countries. If this happened, the best EU surgeons would become very busy; everyone would want their torn meniscus repaired by the world's leading expert. The worst surgeons would have to find something else to do.

In this example, it really matters that the competition is at the level of tasks rather than sectors. Here globalisation is helping one worker with an advanced university degree but harming another even though both are working in a 'sunrise' sector. Similarly, unskilled tasks in the hospital's billing and record-keeping departments might be offshored to low wage regions or nations, while unskilled patient-care tasks are not. As the examples of the winning and losing surgeons and winning and losing unskilled workers shows, the old correlation between skill/education and winner status need not hold as the second unbundling proceeds.

Another concrete example comes in how one should interpret the skill-upgrading observed in Figure 4. Using the old paradigm, the numbers suggests that EU policy makers should push education systems to stress analytic skills. With the new competition-at-task-level paradigm in mind, this may not be a good idea. Many analytic jobs are nontraded today in the sense that their price is set in local labour markets without direct international competition.⁴ Tomorrow's globalisation may change this. After all, a great many analytic workers perform tasks that fit the Van-Welsum-Reif criteria for an offshorable job – IT intensity, IT transmittable output, codifiable tasks, and little face-to-face interaction (Van Welsum & Reif 2005). Some analytic tasks may therefore be offshored to nations where inferior productivity is more than compensated by lower wages for analytic workers.⁵ Or, to put it differently, it may be that many analytic jobs in the EU are currently overpaid in the sense that the wage premium paid to EU analytic workers is not matched by their productivity edge over, say, graduates of Indian management schools.

If these conjectures turn out to be true, the EU will be pushing workers into jobs that only seem to be good jobs since they do not yet face international competition. The moral of the story is one of caution. Since it will be more difficult to predict globalisation's winners and losers in the future, EU governments should be more cautious about pushing workers to acquire specific skills.

⁴ Of course all wages are set in local labour markets, but wages in a traded good sector, say autos, are very constrained by international competition. In the German car industry, the German wage premium matches its productivity premium. If it did not, German cars would not sell, and the car firms would downsize the workforce until the premiums lined-up.

⁵ To take another example, the final version of this report was delivered electronically while the author was in Singapore (attending a conference on offshoring, no less).

EU governments should be particularly cautious about spending resources to push EU workers into specific "Information Society" jobs. If the trend in service-sector offshoring continues, many analytic jobs that now look like high-value added, good jobs may be offshored. On the whole, such offshoring will be an opportunity for Europe to improve its productivity, but the investments made in pushing workers into these jobs would turn out to be wasted. In particular, it would seem that the emphasis on analytic skills should at least be paired with an emphasis on an ability to be flexible, to learn new skills.

The point that moving Europe's work force towards the 'knowledge-based' economy may turn out to be entirely wrong is not new. It was stressed by Paul Krugman a decade ago and re-emphasised by Alan Blinder this year (Krugman 1996, Blinder 2006). The information economy produces intangibles, with the good jobs going to symbolic analysts who push symbols around computer screens. But an economy must ultimately serve consumers and consumers can only consume so much information. The billions of people in fast growing third world nations are going to want cars, consumer electronics and high-tech medicine – fancier analysis of symbols on a computer screen are not the first priority when your income moves from 2 dollars a day to 30 dollars a day. Moreover, pushing the information society risks running into what is probably the hardest economic law of all – abundant things are cheap. If ten or twenty percent of the two and a half billion people in China and India learn how to manipulate information online, the reward to "information society" jobs could plummet. As Krugman (1996) write: "A world awash in information will be a world in which information per se has very little market value. And in general when the economy becomes extremely good at doing something that activity becomes less rather than more important. Late 20th-century America was supremely efficient at growing food; that was why it had hardly any farmers." If 21st-century Europe becomes supremely efficient at processing routine information there may be few information workers left.

The most important educational policy implication may be that it is more important for our children to learn how to learn than it is for them to learn any particular set of skills. The educational system should be preparing them for lifetime employability rather than for lifetime employment. As Blinder (2006) puts it: "Simply providing more education is probably a good thing on balance, especially if a more educated labour force is a more flexible labour force, one that can cope more readily with nonroutine tasks and occupational change. However, education is far from a panacea ... In the future, how children are educated may prove to be more important than how much."

How does suddenness change policy conclusions?

Much of the recent attention focused on outsourcing stems from the losers-lobby-harder effect. Workers in manufacturing sectors have had their productivity-adjusted wages set in international markets for decades. Quite recently, this effect is reaching into the service sectors, creating new losers as well as new winners. Since losers almost always shout louder than winners, the political debate has been hijacked by the new losers from globalisation. The second unbundling has the potential to create new political special interest groups that oppose further globalisation. In the 1970s and 1980s, labour unions in low-skilled manufacturing sectors managed to force through a number of protectionist policies including the multi-fibre agreement (clothing and textiles) and the Common Agricultural Policy (farming). The tip of this iceberg can be seen in the reaction of French labour unions to privatisation and the Services Directive. EU governments should resist attempts to prevent offshoring by providing more accurate information and analysis of the phenomenon and committing to policies that redress the displaced workers' legitimate concerns.

How does individual-versus-sectors change policy conclusions?

The first unbundling engendered many adjustments in the European economy, most of which occurred at the level of firms and sectors. European governments responded with firm-specific, sector-specific policies. For example, all EU members provide subsidies for ailing firms and sectors, especially if they are clustered in a declining region. The new paradigm suggests that future adjustments to globalisation may occur at sub-firm level rather than firm-level. It will be particular tasks that face adjustment and these tasks may be undertaken in a wide range of firms, sectors and regions. As such, they would escape the traditional adjustment-assistance programmes that are now firm-specific and sector-specific. Given the unpredictability of adjustment needs, it may not be wise to establish lists of tasks that are eligible for globalisation-adjustment-assistance. Rather, the new paradigm suggests that some of the money spent on helping sectors adjust would be more effectively spent on helping workers adjust; general worker retraining programmes would be one example of a new-paradigm adjustment programme.

6 CONCLUDING REMARKS

It is useful to start with two assertions.

1. Globalisation will continue and it will continue to create pressures to reallocate economic resources across sectors, firms and occupations.

Globalisation means unbundling. All sorts of economic relationships were bundled spatially to avoid or minimise transportation; this situation implied that the price of many goods, services and wages were set in local markets, not global markets. This bundling meant that workers' pay was tied to the bundle's average productivity. By pure logic, we know that the link to the average dragged down the wage of some workers while pulling up the wages of others. Unbundling breaks the link to the bundle's average. Workers will increasingly get paid what they are worth on the world market. This will lead to gains and pains from trade.

2. The direction and nature of the change is impossible to predict with any accuracy.

Government statistical collection procedures were set up to track the post-war industrial boom when jobs were associated with particular firms and particular firms were associated with particular sectors. Now, jobs are associated with particular tasks and tasks are increasingly reallocated across firms across sectors (outsourcing) and across nations (offshoring). Economists do not have detailed knowledge of exactly what caused the bundling in the first place, so they will not be very good at predicting how the unbundling will occur, i.e. which tasks will be offshored and which will not. Moreover, as firms experiment with unbundling, they are learning that some jobs really cannot be done in India. It turns out that even firms do not fully understand the linkages among the tasks that had been bundled geographically for so long. However, it seems clear that it is probably not true that the biggest adjustments will be made by low skilled workers as it was in the past. Many unskilled workers are performing tasks that are entirely shielded from global competition due to their very nature; it is much easier to offshore a financial analyst's job than it is to offshore a shop assistant's job.

A clear implication of these two assertions is that promoting flexibility and adjustment will be one of the keys to successful government policy responses. This, of course, does not necessarily mean embracing Anglo-Saxon style flexibility where the market is allowed to reign free. Northern European governments routinely collect 50% of national output, so they have enormous scope for separating what workers care about (take-home pay) and what firms care about (total employment costs). The efficient reallocation of labour only

requires that firms see changes in the cost of employing workers – not that the workers themselves see a big change in take-home pay. If workers' costs to firms and prices remain flexible, then each nation's resources can be redeployed to exploit the new prices and the nation's income as a whole will rise. On the other hand, if prices or quantities are constrained in an attempt to thwart adjustment, the nation's income as a whole will suffer.

The final take-away message concerns European welfare states. The next decade seems set to throw up at least as many economic challenges as the past decade. Much of Europe's ability to adapt to the new world situation – in particular the emergence of China and India – rests on European's belief that both the gains and pains of globalisation are shared broadly across the population. This fact will surely be no less important in dealing with the challenges of the second unbundling. However, the exact nature of the welfare state will matter, as Sapir (2005) stresses. Offshoring will prove to be especially attractive to European firms located in welfare states that are based on the principle of resisting change with employment protection laws, government employment etc. After all, offshoring provides the ultimate flexibility and such flexibility may prove most attractive to firms in nations with the most rigid labour markets. This suggests that it will even more important to shift to welfare state models that protect workers rather than jobs, that encourage adjustment with employment insurance and re-training schemes. Or, to put it more directly, attempts to save jobs with employment protection laws may result in even more jobs being offshored.

To end, it is worth noting that the new paradigm does not push out the old. International competition at the firm level continues to be important and offshoring, especially in the service sector, is still relatively minor. The most robust policy message therefore is one of caution – globalisation's impact is likely to get harder to predict, so governments should be more cautious when they try to pick winning sectors.

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CHALLENGES CREATED BY THE NEW EU MEMBER STATES AND THIRD COUNTRIES

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Summary

This paper investigates recent trends in selected countries' comparative advantage. It focuses on any evidence of an increasing overlap in countries' specialisation patterns, since this might be a sign of increasing unbundling of industrial output. The analysis shows that specialisation patterns within new EU member states have become more heterogeneous. This is mainly due to considerable shifts in certain countries' revealed comparative advantage. From the Finnish point of view, the most interesting cases in Europe are Estonia and Hungary, and China in Asia. The factor content of these countries' exports has shifted rapidly towards intensive use of human capital and, especially in Estonia and Hungary, it has begun to converge with Finnish specialisation patterns. At the same time Finnish firms have invested actively in these countries. FDI in these countries is related to the telecommunications industry and Finnish firms' overall FDI stock increased almost five-fold during the same period. FDI stock in manufacturing industry has increased more than four-fold and in the service sector it is now ten times greater than a decade ago. Rapid expansion of Finnish FDI stock in Estonia and Hungary and the consequent job creation in the Estonian and Hungarian industrial sectors has not, however, been associated with job destruction in the Finnish telecommunications industry. At least qualitatively, it seems that the unbundling of the Finnish telecommunications industry's production has led to a 'hollowing out' tendency in Finnish industry, especially in electronics.

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1 INTRODUCTION

1.1 Preliminaries

Economic integration or trade liberalisation in general has substantial effects on the location of economic activities. Differences in comparative advantage across countries determine specialisation patterns at inter-country level, while at intra-national level the forces of new economic geography are at work. The former mechanism works even in the absence of factor mobility across nations – trade and international factor mobility are substitutes – whereas the latter works when production factors are mobile and trade is not costless. A combination of trade costs and economies of scale generates agglomeration forces that encourage geographical clustering of production and economic activities in general. This clustering may create regions with many economic activities and others with very few or almost none. On the other hand, agglomeration forces may lead to sectoral clustering: one sector clusters in one region while other sectors cluster in other regions. The geographical distribution of economic activities is then very concentrated in each sector but dispersed at the level of all sectors.

Economic integration and globalisation in general has a hump-shaped impact on industrial location. Agglomeration forces are at their strongest when trade costs are intermediate. Consequently, as part of the so-called first wave of globalisation (see Baldwin 2006), reducing trade costs tend to concentrate manufacturing in the rich North. For the second wave, based on very low trade costs and previously non-tradable tasks becoming tradable, the location of production becomes irrelevant. This, in turn, tends to lead to industrialisation in the South and de-industrialisation in the North. The latter phase of globalisation is unbundling industrial production into smaller parts since components can be made or different tasks within a production process performed in different locations not necessarily close to each other. In particular, the second phase is affecting tasks that can be easily codified or transmitted electronically.

One way of approaching potential unbundling is to utilise data on international trade flows and evaluate different countries' comparative advantage. Unbundling is likely to be more intense between countries that have similar specialisation patterns and which are located relatively close to each other. The latter can be justified by arguing that although distance has lost a part of its relevance it is still a significant ingredient in gravity models. Similar, specialisation patterns lead to increasing intra-industry trade that is often based on input-output linkages within the production chain. Agglomeration forces are then at work at inter-country level as well as intra-country level, since the overlap in comparative advantage may cover regions not necessary bound by national borders. High-tech industries and the Baltic Sea region serve as an example of

this. Abundance in skilled labour may shift tasks from high-wage countries to low-wage countries when the related wage gap exceeds the productivity gap. This, in turn, leads to wage and income convergence between the North and the South. Trade relations between Estonia and Finland typify this phenomenon.

This paper focuses on comparative advantage and evaluates the specialisation patterns of the old and new member states of the EU and selected countries from Asia and the Americas in the latter half of the 1990s and early 2000s. Our investigation is based on the concept of *revealed comparative advantage (RCA)*. The basic logic behind RCA involves evaluating comparative advantage on the basis of a country's specialisation in (net) exports relative to a reference group. The most general point of reference would be the world as a whole but due to the general lack of data we have chosen to use that on intra-EU trade plus trade between the EU and our sample countries.² Thus, we draw conclusions on how globalisation has affected specialisation patterns in our sample countries and comment on the differences and similarities between them.

1.2 Evaluating comparative advantage

In this section, we consider comparative advantage in terms of the direction of trade flows. This reveals countries' specialisation patterns and hence their revealed comparative advantage, though not the source of this advantage. The measure of revealed comparative advantage (RCA), the Balassa index (BI), is simply calculated as the ratio of the share of a given product in a country's exports to another country or region, to the share of the same product in that country or region's total exports. If the ratio is greater than one for a given product, the country is said to have an RCA in exports of such goods.

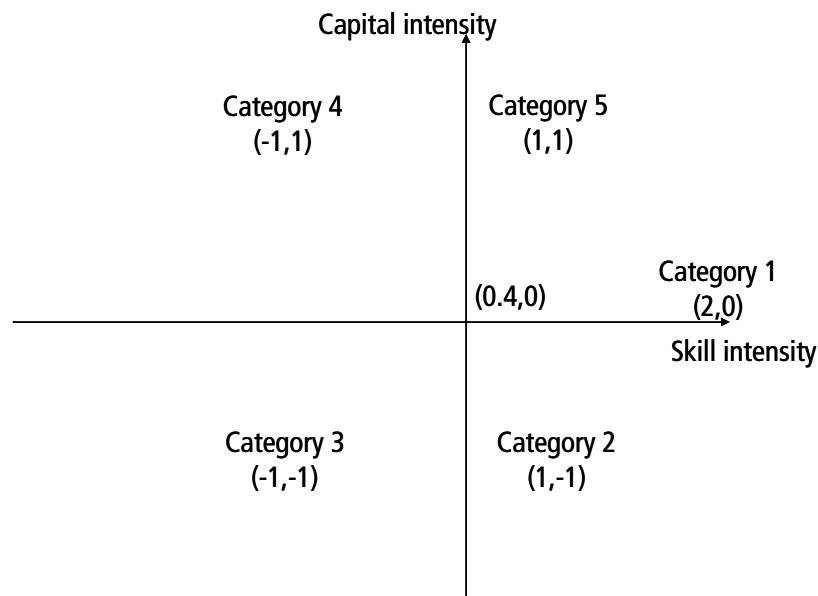
RCA alone, however, only reveals which goods countries tend to specialise in. It does not reveal the origins of comparative advantage. According to the Heckscher-Ohlin theorem, a given country's comparative advantage (or disadvantage) is determined by its factor endowments. A country has a comparative advantage in those sectors that intensively use productive factors that are abundant in the country. Cross-country trade patterns are determined by differences in comparative advantage: a country will export goods whose production intensively uses factors that are relatively abundant (and thus comparatively cheap) in that country before trading in and importing goods whose production would require the use of relatively scarce (expensive) factors.

² Recently, similar methods have been applied extensively to the studies of specialisation patterns in trade between the EU15 and the new member states and Russia (e.g. Neven 1995, Kaitila 2001, 2004, Kaitila and Widgrén 2003, Algieri 2004, Widgrén 2004).

To carry out this investigation of the factor content of countries' comparative advantage, we divide traded goods into five categories according to the factor intensity of their production. To that end, we follow the methodology and classification proposed by Neven (1995) in his study of the eastern enlargement of the EU. Traded goods are categorised, on the one hand, according to capital intensity (high, intermediate, low) and on the other according to skilled vs. unskilled labour intensity.

Figure 1 gives a graphical illustration of this classification. Category 1 is characterised by a high share of wages in value added, very high average wages and a very high proportion of white-collar workers. These are typically high-tech industries, in which human capital is used intensively in production. Category 2 comprises production activities intensive in human capital, but low in physical capital intensity. This category includes industries which have a relatively low level of investment relative to value added, high wages and a high share of wages in value added. Manufacturers of electrical machinery and equipment serve as an example of this category. Category 3 includes production intensive in labour and which uses relatively little capital. Average wages are low, and there is a low level of investment and a high share of wages in value added. For example, the textiles and apparel industry belongs to this category.

Figure 1 A quantification of Neven's categories.



Category 4 includes industries that are intensive in labour and capital. These industries have a high level of investment, relatively low wages, a low proportion of white-collar workers and an intermediate share of wages in value added. Automobile manufacturing, for instance, falls under this category. Category 5 is dominated by the forest and food-processing industries that are intensive in both physical and human capital. In addition, the paper industry belongs to this category. Table 1 summarises the characterisation of the categories.

Table 1 A summary of the properties of the five industry classification categories.

Intensity category	Human capital	Labour	Physical capital	Example
1	Very high	High	Intermediate	High tech
2	High	High	Low	Electrical equipment
3	Low	High	Low	Textiles
4	Low	Low	High	Car industry
5	High	Low	High	Paper industry

Source: Widgrén (2005).

2 SPECIALISATION PATTERNS IN TRADE BETWEEN THE EU15 AND THE SAMPLE COUNTRIES

2.1 Non-EU countries

In the following, we evaluate the differences and similarities between RCA in trade between the EU15 and 12 important non-EU15³ trading partners, excluding the new member states. The countries in the sample are selected subjectively based on their general importance in world trade. They include countries in Asia, and North and South America. With respect to the CEE10 countries, we rely on the results presented earlier in Kaitila (2004). However, we have modified his findings to make them comparable to ours.

Table 2 reports the shares of the above-described categories in 2002 and the related changes from 1996 to 2002. The results suggest that the intensive use of low-skilled labour forms the major basis of revealed comparative advantage in Asian countries other than Japan and Russia. Among the Asian countries examined, Korea and Thailand are, however, exceptions as the total percentage of categories 3 and 4 in these countries is roughly the same as in the EU15. In

³ We have used Eurostat trade statistics which, unfortunately, do not contain 1996 data for the new member states. That is why we concentrate on the EU15 in what follows.

the NAFTA countries, RCA stems clearly less from intensive use of low-skilled labour than in other countries or regions.

As a general conclusion, the upper panel of Table 2 suggests that intensive use of skilled labour forms the basis of RCA in the U.S. and Korea and to a lesser extent in the EU, other NAFTA countries, Thailand and China. The basis of RCA being founded on intensive use of capital is the highest in Brazil, India and Russia. Perhaps more interesting than the levels are the changes in RCA patterns between 1996 and 2002, shown in the lower panel of the table. Here, one can immediately see a clear shift from low-skilled labour to intensive use of high-skilled labour as the basis of RCA in China, Mexico and Indonesia.

Table 2 The share of RCA sectors in skill-capital-intensity classes in 2002 and the change in shares from 1996 to 2002 in selected countries and the EU15.

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>3+4</i>	<i>1+2+5</i>
EU15	30.6	20.6	6.8	38.0	4.0	44.8	55.2
Brazil	3.0	24.9	5.0	39.9	27.1	44.9	55.1
China	23.0	13.3	24.7	38.4	0.6	63.0	37.0
India	7.7	8.0	37.4	42.2	4.7	79.6	20.4
Korea	43.1	9.8	17.7	29.3	0.0	47.1	52.9
Mexico	39.5	25.0	1.7	25.5	8.3	27.2	72.8
Russia	6.8	5.0	0.1	83.7	4.4	83.8	16.2
Thailand	26.9	14.9	16.8	35.6	5.8	52.4	47.6
Turkey	1.0	8.9	46.5	34.5	9.2	81.0	19.0
U.S.	51.7	33.7	1.6	9.4	3.6	11.1	88.9
Canada	26.3	20.9	3.3	26.9	22.6	30.2	69.8
Indonesia	15.2	16.1	36.5	25.4	6.8	61.9	38.1
Japan	31.5	22.1	2.4	44.0	0.0	46.4	53.6

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>3+4</i>	<i>1+2+5</i>
EU15	10.6	-8.1	-2.1	-0.4	0.0	-2.6	2.6
Brazil	0.3	-1.7	-1.1	5.2	-2.7	4.1	-4.1
China	15.5	2.1	-9.1	-8.2	-0.4	-17.3	17.3
India	3.2	-4.0	0.5	2.4	-2.2	2.9	-2.9
Korea	2.6	-0.6	1.7	-3.6	0.0	-1.9	1.9
Mexico	18.3	9.6	-1.0	-25.4	-1.5	-26.4	26.4
Russia	-0.6	0.8	-0.4	-0.3	0.4	-0.6	0.6
Thailand	0.0	-2.3	-0.1	7.3	-4.9	7.2	-7.2
Turkey	-5.2	1.0	-3.9	12.5	-4.4	8.5	-8.5
U.S.	2.5	5.7	-0.9	-4.9	-2.5	-5.8	5.8
Canada	5.1	7.2	1.2	-4.5	-8.9	-3.4	3.4
Indonesia	10.0	-0.6	-1.7	-7.0	-0.7	-8.7	8.7
Japan	-3.0	1.3	0.1	1.7	0.0	1.8	-1.8

Source: Author's calculations.

Note that the same shift from intensive use of low-skilled to high-skilled labour also occurs in the U.S. and Korea, which have the highest shares in intensive use of skilled labour as the basis of RCA (see the upper panel of Table 2). In the U.S., Canada and Korea, this development also occurs at the cost of capital intensity. With respect to the U.S. and Korea, the development suggests that export specialisation occurred in industries characterised by intensive use of skilled labour as early as 1996. The other countries are now gradually catching up.

The EU is an interesting exception. Its specialisation is increasingly based on industries that use high-skilled labour intensively, although this takes place at the cost of intensive use of intermediate-skilled labour (Category 2) rather than low-skilled labour.

2.2 New member states

Table 3 gives figures for the CEE10 countries, but with a reference year of 1993 instead of 1996. Compared to our sample countries, specialisation in the CEE10 countries is based more on the intensive use of low-skilled labour. With the exception of Hungary, the Czech Republic and Estonia, the new member states are in this respect comparable to India, Russia and Turkey. Specialisation in the new member states also seems to be based more on intensive use of capital.

In terms of specialising in activities which use high-skilled labour intensively (Category 1), Hungary and Estonia differ from other CEE10 countries. The percentage of Category 1 RCA sectors in these countries is comparable to the EU15, Canada, Thailand and China. They have also experienced changes in patterns of RCA similar to China, Mexico and Indonesia: from intensive use of low-skilled to high-skilled labour as the determinant of RCA.

Table 3 The shares of CEE10 countries' RCA sectors in skill-capital-intensity classes in 2002 and the change in shares from 1993 to 2002.

	1	2	3	4	5	3+4
Bulgaria	4.4	6.7	48.8	35.8	4.2	84.6
Czech Rep.	12.9	23.8	10.7	51.3	1.3	62.0
Estonia	26.0	10.6	21.3	39.4	2.7	60.7
Hungary	25.8	17.8	11.3	44.3	0.8	55.6
Latvia	2.1	2.6	24.5	69.8	1.0	94.3
Lithuania	12.9	8.5	42.4	31.2	4.9	73.6
Poland	4.6	14.0	23.5	53.7	4.3	77.1
Romania	1.5	10.6	68.5	18.5	1.0	87.0
Slovakia	7.4	13.5	17.6	59.6	1.9	77.2
Slovenia	3.8	25.5	15.1	55.4	0.2	70.5

	1	2	3	4	5	3+4
Bulgaria	-4.0	-1.0	13.2	1.4	-9.5	14.5
Czech Rep.	5.5	11.9	-16.2	3.4	-4.6	-12.9
Estonia	20.6	3.4	-4.4	-18.6	-1.0	-23.0
Hungary	16.3	5.3	-27.6	10.5	-4.5	-17.1
Latvia	-3.2	1.1	8.4	-3.8	-2.5	4.6
Lithuania	-4.2	6.7	22.3	-15.9	-8.9	6.4
Poland	-1.0	7.8	-18.3	15.8	-4.3	-2.5
Romania	-1.4	7.3	-1.1	-3.3	-1.7	-4.3
Slovakia	-0.1	6.4	-16.0	16.4	-6.7	0.4
Slovenia	1.9	6.2	-19.9	12.9	-1.1	-7.0

Source: Kaitila (2004).

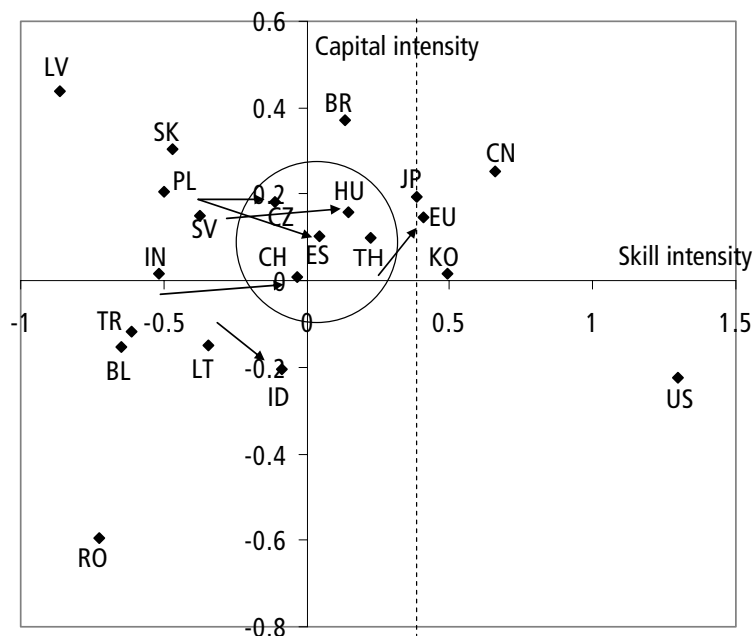
3 RECENT DEVELOPMENT WEIGHTED AVERAGE RCA IN SELECTED COUNTRIES

In the following, we attempt to summarise our sample countries' RCA in the five above-described categories. We do this by computing a weighted average of countries' category-wise RCA, using the distribution of their exports in RCA sectors between the categories shown in Tables 2 and 3 as the weighting. Each category is given a two-dimensional vector value as described in Section 1.2 above. It is worth noting that the co-ordinate values that describe different categories are rather arbitrary (see Figure 1 above).⁴ For instance, if one country's weighted average on the horizontal skill-intensity dimension is 1 and another country's 0.5, this does not mean that the former country has twice the RCA in production, using skill-intensive labour, of the other country.

⁴ For an alternative selection, see Kaitila (2004).

The weighted average RCAs are plotted in Figure 2. If a country has 20 per cent of its RCA exports in each category, the weighted average RCA (WARCA) would be at co-ordinate (0.4, 0.0). This serves as a good reference point. If a country's WARCA is in the North-East quadrant relative to (0.4, 0.0), it has a comparative advantage in sectors that intensively use both physical and human capital. In our sample, Canada, the EU, Japan and Korea are such countries.⁵ A country that differs from all of the others is the U.S., which has a comparative advantage in sectors that intensively use human but not physical capital.

Figure 2 Weighted average RCA in sample countries in 2003 and the most substantial shifts in it between 1996 and 2003.



Among the other countries, we have excluded Mexico and Russia from the analysis since only a minor part of their exports can be divided into Neven's categories. Russia would be located very close to Latvia, while Mexico would fall close to Hungary. Comparing the new member states to Asian countries, Figure 2 reveals that Estonia, Hungary, the Czech Republic, Thailand and China have similar WARCA values: they are slightly below the origin for the skill-intensive dimension and slightly above the capital intensity origin. The common feature between these countries, with the exception of Thailand, is that they have moved considerably towards the skill-intensive dimension. In graphical terms, they have moved rightwards from outside the circle to inside the circle, where

⁵ Note, however, that the RCA of Canada and the EU was not so robust when non-normalised weights were used (see table 2).

Thailand already was in 1996. We have plotted the circle simply to illustrate the region where most of the countries with big shifts in the factor content of WARCA end up. To summarise, there seems to be some convergence in WARCA and some Asian countries share this development with some new member states.

Countries whose location has remained very stable on the skill-intensive part are the U.S., Canada, Japan and Korea and the CEE10 countries, excluding Hungary, the Czech Republic, Estonia, Turkey, India and Brazil. Indonesia has shifted slightly away from capital-intensive production and shifted considerably towards skill-intensive production. With regard to the latter, it is at the same level as China and the other countries within the circle. The EU has shifted in a North-East direction, meaning that its WARCA is based more on intensive use of physical and human capital. In this respect, it matched Japan and Korea during the latter half of the 1990s and the early 2000s.

In sum, Figure 2 and the analysis in the previous sub-section demonstrate that there is some convergence in terms of WARCA between countries whose comparative advantage was already based on intensive use of skilled labour. In our sample, there are examples of these both from Asia and among the new member states. On the other hand, most sample countries' WARCA has been very stable during recent years. In this group, we also find examples from Asia and new member states. All countries that had relatively skill-intensive exports in 1996 (x -co-ordinate greater than 0.4) belong to this group. The EU joined this group between 1996 and 2003.

4 CONCLUSIONS

The analysis demonstrates that, among our sample of countries, the U.S. is a clear exception in terms of the determinants of its revealed comparative advantage. Its comparative advantage is based on more intensive use of highly skilled labour than in any other country in our sample and not on physical capital. Asian countries and the new member states have a considerable overlap in their comparative advantage. These countries can be divided into three groups: 1) those who are converging towards countries whose RCA is based on intensive use of human capital and less so on physical capital (Estonia, Hungary, the Czech Republic and China), 2) those who are not converging and whose RCA is based on intensive use of unskilled labour rather than physical capital (Romania, Lithuania, Turkey and India) and 3) those who are not converging and whose RCA is based on the intensive use of unskilled labour and physical capital (Latvia, Slovakia, Poland and Slovenia). Globalisation is likely to intensify competition between producers operating in these areas.

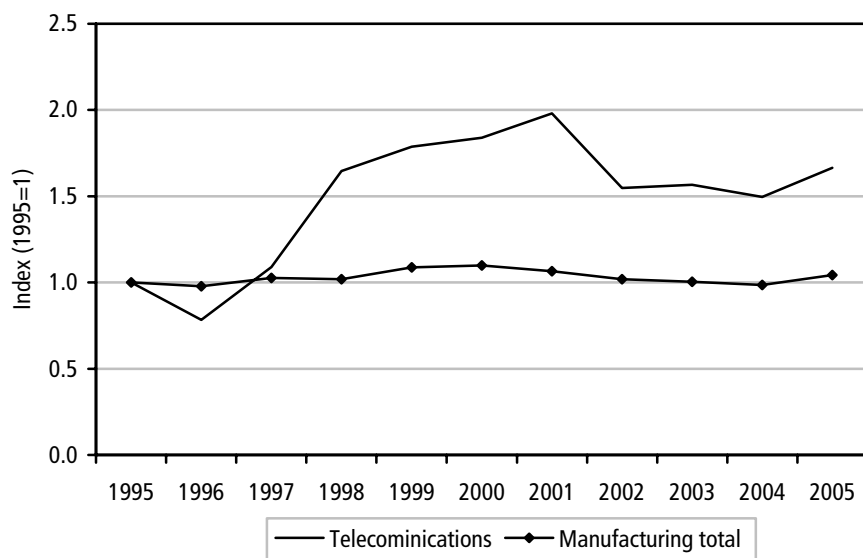
In terms of intensive use of human capital, the EU15 has shifted in a skill-intensive direction. It achieved Japan and Korea's levels during the latter half of the 1990s and early 2000s. This group also displays a considerable overlap in comparative advantage. In terms of intensive use of human capital, the EU15 is not, however, a homogeneous group. The most skill-intensive exports are sent by Ireland, the UK and the Netherlands, which are almost at the same level as the U.S. Finland represents the upper average of the EU, with Sweden and Belgium following closely. In this respect, the other EU nations are very close to countries that have been able to increase the use of human capital in their exports and which have been converging towards the most advanced countries in this respect.

Generally, it seems that revealed comparative advantage has become more heterogeneous among the new member states and Asian countries in our sample. In most of the sample countries, there are no significant shifts between 1996 and 2003. Increasing heterogeneity is due to major shifts in certain countries. From the Finnish point of view, the most interesting cases in Europe are Estonia and Hungary, and China in Asia. These countries experienced a similar shift towards human capital based WARCA during the late 1990s and the early 2000s. Unfortunately, Bank of Finland FDI data do not provide sufficient information concerning China, but the data on Estonia and Hungary show that the Finnish-based FDI stock in these countries is considerably higher than in any other new member state. In Estonia, Finnish FDI stock increased from 43 to 857 million euros between 1996 and 2005 and in Hungary the respective numbers are 26 and 910 million. Estonia is also one of the most important intra-industry trade partners of Finland, its share of IIT of total trade being the third highest after Sweden and Germany. A considerable part of Finnish FDI in Estonia and Hungary is linked to the telecommunications industry. Finnish firms' overall FDI stock increased almost five-fold during the same period. The FDI stock of manufacturing industry has increased more than four-fold and, in the service sector, it is now ten times greater than a decade ago.

Figure 3 shows employment trends in the telecommunications industry and manufacturing industry in total. These figures clearly demonstrate that employment has remained practically constant and increased significantly in the telecommunications industry. Hence, the rapid expansion of Finnish FDI stock in Estonia and Hungary. The related job creation in the Estonian and Hungarian industrial sector has not been associated with job destruction in the Finnish telecommunications industry. At least qualitatively, it seems that the unbundling of the Finnish telecommunications industry's production has led to a 'hollowing out' tendency (see Baldwin 2006) in the Finnish telecommunications industry. Some labour-intensive stages of the telecommunications industry's production are carried out in Estonia or Hungary, leaving R&D and the most high-tech stages to Finland and even considerably increasing domestic employment within

the industry. Input-output linkages across the Bay of Finland have benefited and expanded the Finnish telecommunications industry, and have not led to de-industrialisation. Moreover, the 'hollowing out' tendency is even more general in Finland, since employment in manufacturing industry has remained constant despite the rapid accumulation of FDI stock abroad. In sum, the industrialisation of the South is not necessarily deindustrialising the North but may be beneficial, at least in specific industries.

Figure 3 Employment in Finnish telecommunications and manufacturing industries (1995=1).



The 'hollowing out' tendency has also raised the productivity and wages of Estonian and Hungarian workers and the income levels of these countries compared to the old EU states. Indeed, Kaitila (2004) finds some evidence that economic growth and convergence have been faster in new member states whose revealed comparative advantage has shifted towards a skill-intensive direction. In Asia, China serves as the best example of such a development.

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GLOBALISATION CHALLENGES FOR EUROPE – LABOUR MARKET PERSPECTIVES

Torben M. Andersen¹

Summary

Concerns over the effects of globalisation are mainly related to labour market effects. How will jobs and wages be affected? Will there be enough jobs? What will we live on?

While globalisation creates aggregate gains, it is also a process which entails adjustment. Therefore, there will be both losers and winners. The main determinant of the relative net-gain is not necessarily closely related to the level of education, but rather to the extent to which economic activities can be relocated over borders. Increasing globalisation effectively creates increased job mobility, and the direction of job movements depends on comparative advantages relative to the scope for relocating production and jobs. Empirical evidence shows that export opportunities tend to improve labour market prospects, while the import threat does the opposite.

A key policy challenge is to support structural change and adjustment without leaving a disproportionate amount of risk with individuals. This can be done in the short run in the form of income insurance, and in the medium to long run in terms of re-education and training. Increased investments in education are a popular remedy. While the general return – private and social – is high, there is a danger of overinvestment in education if it is perceived that all labour market problems can be solved by adopting an education policy based on the view, “the longer, the better”.

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1 INTRODUCTION

While economists persistently point to the gains from further international integration, the public debate is more sceptical. Its concerns mainly derive from the labour market implications. How will jobs and wages be affected? Perhaps the debate in itself is sufficient to foster a general sense of uncertainty as to what the future will hold. Will there be enough jobs? What will we live on? Questions of this sort abound.

The generally pessimistic tendency with respect to the future is not new, and can be traced back at least to the industrial revolution. Yet, it is also somewhat striking given that the historical record has proved it wrong on a consistent basis. Material living standards have improved significantly, which has also created the basis for improvements in health, social conditions etc. Likewise, employment has not been on a downward trend, and the employment share in many countries is at very high levels when regarded from a historical perspective.

However, pointing to historical records and aggregate gains does not seem very relevant to people when their jobs and wages are at issue. The gains from globalisation and technological change do, in general, presuppose structural changes and thus adjustment, a process that will inevitably disrupt the status quo and produce both winners and losers.

In the following, the labour market consequences of globalisation are approached by considering the implications product market changes have for the labour markets. These effects arise from technological and political changes making market entry and production relocation across borders and great distances much easier and less costly. Globalisation may also have direct labour market consequences via labour mobility - an important issue which is not discussed in the following.

The perspective taken here follows Baldwin in considering globalisation as a process enabling unbundling and thereby reducing the importance of geographical proximity between consumers and producers as well as between producers of intermediaries and final goods producers. It may thus be considered complementary to Baldwin's paper in elaborating some of the labour market consequences of this process.

2 THE EVIDENCE

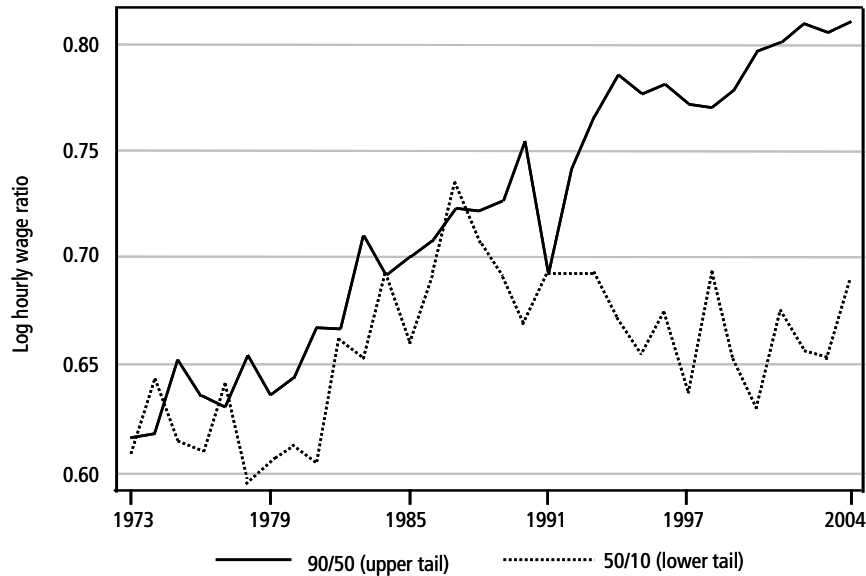
The relevant evidence is present at micro-level. Two issues are particularly important, namely wage formation and job creation.

The debate on the labour market consequences has for some years focused on “skilled” vs. “unskilled”, based on the perception that globalisation would primarily affect unskilled workers since new economies in the global market tend to have a large and cheap supply of unskilled labour. This has been supported by increasing wage dispersion and weakening labour market positions for the unskilled. In the US, this has manifested itself in the form of widening wage inequality and even real wage decreases for some groups while, in Europe, we have seen excess unemployment rates for unskilled workers.

Recent evidence from the US (see Autor, Katz and Kearney (2006)) seems to indicate that this view represents a correct description of the situation in the 1980s, but not for the subsequent period. Interestingly, widening wage dispersion has been driven by a rising trend in the 90/50 earnings ratio, while the 50/10 ratio has been more steady. At the same time, net job creation has been largest around the tails of the wage distribution. This suggests that we may see a tendency towards polarisation in the labour market with a clear distinction between winners and losers, where the net gains are closely related to levels of education. The service sector is a case in point since activities which just a few years ago were routinely classified as non-tradables suddenly found themselves in international competition through the offshoring of jobs.

Only scant evidence exists on this issue with respect to European countries. Goos and Manning (2003) find evidence of polarisation of the UK labour market and a trend increase in both the D9/D5 and D5/D1 decile ratios, i.e. greater wage disparity between the top and the bottom. For Spain, Izquierdo and Lacuesta (2006) find an increase in the D9/D5 ratio and a decrease in the D5/D1 ratio. For Germany, Gernandt and Pfeiffer (2006) report increasing wage inequality, which in the former West Germany is driven by an increase in the D5/D1 ratio, while for the former East Germany, it is driven by an increase in the D9/D5 ratio.

Figure 1 US wage inequality – 50/10 and 90/50 decile ratios, 1973–2004.



Source: Autor et al. (2006).

A large number of studies have considered wage formation in greater detail. One interesting set of findings suggests that wage formation is critically dependent on trade position in the sense that import threats exert a downward pressure on wages, while exports may be associated with higher wages. Bernard and Jensen (1999, 2001) and Bernard et al. (2003) find that exporting firms tend to have higher productivity and pay higher wages, with the causality running from productivity to exports. Interestingly, they also find that exporting tends to drive out less productive firms and induce a reallocation of production to more efficient ones. Schank et al. (2004) list 18 empirical studies using data from 20 countries, supporting the notion that exporting firms tend to pay higher wages. Empirical studies have also found that import penetration tends to lower wages (see e.g. Boulhol et al. (2006), Revenga (1992), Nicoletti et al. (2001) and Jean and Nicoletti (2002)). This suggests that changes in the labour market and possible polarisation may be dependent on the extent to which activities are tradables or non-tradables, and in the former case, whether there is an import threat or an export opportunity. In this way, further globalisation may affect wage formation, including the dispersion of wages.

It is worth pointing out that, contrary to widespread perceptions, there is no evidence that the process of job creation and destruction is proceeding at a higher speed than in the past (see Economic Council (2003)). The overall turnover in labour markets is rather high (job creation and destruction at about 10 % of the total number of jobs each year), but there is no upward trend.

Hence, adjustments and structural changes are inducing the substantial reallocation of labour at the same high level as in the past.

3 THE MECHANISMS

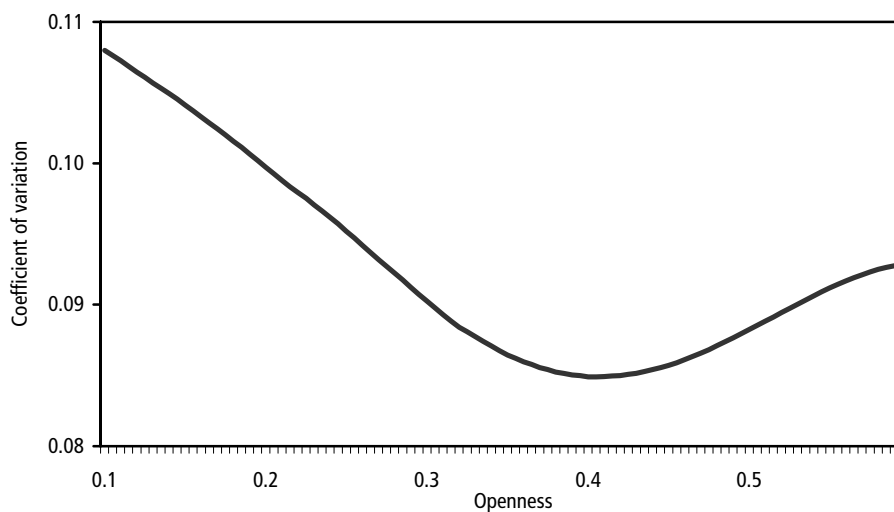
A useful approach in relation to the labour market consequences of product market integration is to focus on the scope for rent extraction between the firm and its employees. Basically, two factors can create rents to be shared in wage negotiations, namely, rents created by limited market entry (in the following termed protection rents) and rents created by having higher productivity than competitors (specialisation rents). Globalisation will critically affect the balance between these two types of rents since it implies both easier market entry and further specialisation. That is, the process of unbundling changes market power and therefore wage formation and employment creation.

Market integration causes some former non-tradables to become either importables or exportables and this, in turn, affects the scope for appropriating the two types of rent outlined above. In a fairly closed economy, most activities are non-tradables, since domestic markets are protected from penetration by foreign firms, and this improves the scope for rent extraction (protection rents). In a more open economy, less efficient domestic production is driven out of business by more efficient foreign production, and vice versa, efficient domestic production driving out less efficient foreign production. The latter implies that production is better allocated across countries according to productivities (comparative advantages) which, in turn, implies specialisation and the possibility of capturing specialisation rents.

More integration or openness thus causes a shift from rents primarily being generated by protection to their being generated by specialisation. The very process through which globalisation causes structural changes, specialisation, changing trade patterns etc. has, in this way, a fundamental impact on wage setting. This has several interesting implications (Andersen and Sørensen (2006)): (i) Wage inequality may depend on openness/integration in a U-shaped manner: integration first diminishes wage dispersion by reducing the importance of "protection rents", and later increases wage inequality by increasing the importance of "specialisation rents", cf. figure 2. Thus, firms/workers are driven out of business or forced to accept lower prices/wages to stay in business/jobs. The winners are exporting firms and their employees who benefit from the fact that smaller frictions improve the scope for exploiting their comparative advantage (ii) The losers tend to be a) former non-tradable activities and their employees and b) non-tradable service sectors benefiting from higher income and thus demand generated by the gains from further integration. (iii) This

process is necessarily associated with the substantial reallocation of labour. However, the direct effect of globalisation on job turnover is diminishing in the sense that a given drop in market frictions causes more relocation in an economy that is, initially, relatively closed compared to a more open economy. The reason is simply that the amount of reallocation is relative to the size of the non-tradable sector. This also indicates that market entry caused by globalisation cannot be a permanent cause of job reallocation (structural changes vs. fluctuations).

Figure 2 Openness and inequality.



Note: Based on model simulation. Inequality measured by the coefficient of variation for wages, and openness by trade share.

Source: Andersen and Sørensen (2006).

The mechanisms outlined above provide a basic sketch of why the process of wage formation is affected when the scope for the relocation of production and thus jobs across countries and labour markets increases as a result of further globalisation. It can be phrased in different ways – the elasticity of labour demand increases, the scope for rent extraction is affected – but it essentially comes down to a process with distributional consequences, in terms of both winners and losers, underlying the aggregate gains.

There is one important lesson which is often overlooked when considering these issues in a partial context. Aggregate gains from international integration will in general show up in terms of aggregate increases in wages and employment, implying that there is a non-trivial distinction to be made between absolute and relative winners and losers. Moreover, inherently, non-tradable sectors such as certain forms of services will gain (provided the income elasticity is sufficiently

large) since the aggregate gains will increase demand for these services. Hence, the winning groups do not uniquely constitute groups at the cutting edge of international competition.

The above mentioned changes may also induce important institutional changes. Basically, the process forces wages into a closer alignment with productivity; something which can be difficult to ensure in centralised wage bargaining. Many European countries have seen a tendency towards more decentralised wage formation, and this could be interpreted as in part reflecting changes induced by globalisation. The decentralisation of wage formation may imply more flexibility in wage setting and therefore improve the ability of labour markets to adjust to changes in market conditions. However, a virtue of the centralised wage setting system was that it could internalise interdependencies in wage determination and thereby enable wage setting to be in accordance with macroeconomic objectives.

4 POLICY RESPONSES

A key policy challenge is to support structural change and adjustment without leaving a disproportional amount of risk with individuals. Since the risk carried by individuals is associated with gains for society, it would be reasonable to have some collective diversification of shocks (social insurance). This should not solely be considered as a passive question of compensating the losers, but as an active question of establishing risk sharing arrangements conducive to adjustment and flexibility.

This can be accomplished in the short run in the form of income insurance, and in the medium to long run in terms of (re-) education and training. In the design of such schemes, it is important to clarify the implications for incentives and insurance. While there is a case for social insurance, it is important that it be combined with an incentive structure ensuring that the schemes have a clear employment focus, i.e. temporary vs. permanent support. Otherwise, the financial burden of financing such a scheme will become too large. This can be accomplished by limiting the duration of risk sharing arrangements (e.g. unemployment benefits) or combining them with workfare elements. The lessons from the 1970s and 1980s are quite clear on this point. Many countries adopted a passive orientation in labour and social policies which turned out to cause increasing and unsustainable transfer burdens with respect to the public sector. These policies were based on the faulty perception that "too many hands are chasing too few jobs". Historical records have proven this view wrong, and it is therefore important to maintain an active focus in policies, even in the short run where this may seem less obvious.

A current mantra calls for more investment in education on a general basis. This is an evergreen in policy debates since it is difficult to find opponents to more education. While education generally provides high returns – both social and private – two important points should be emphasised. First, the return to education (beyond basic education) is often appropriated by well-defined agents (workers and firms), and it is not generally clear that there are strong arguments for large public subsidies for these activities. For these groups, it is important to signal that they should assume responsibility for the development and maintenance of their human capital. Second, public intervention is particularly called for in the case of groups at risk of being marginalised in the process, especially in cases where a lock-in effect arises when human capital suddenly becomes obsolete. In these cases, educational and social programmes are genuinely required. Finally, while major uncertainties remain, it does not seem that the trend in future labour demand is based on the single-minded provision of additional education. Various service activities should be expected to expand, partly due to high income elasticities (e.g. health care) and partly due to the shifting age composition of the population. Hence, if more education is taken to imply, “the longer, the better”, there is a risk of overinvestment in education.

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GLOBALISATION AND ECONOMIC GROWTH: ENERGY AND ENVIRONMENTAL CONSTRAINTS

Sten Nilsson and Juha Honkatukia¹

Summary

The objective of this paper is to present empirical evidence on the relationship between energy prices and environmental constraints, respectively, on *economic growth*. The overall conclusion with respect to energy prices is that the *economy can be sustained alongside sustainable increases in energy prices, due to rising demand for energy, but cannot be sustained in the face of supply shocks*.

With respect to environmental constraints and economic growth the overall conclusion is that traditional neoclassical growth models show lower economic growth in the presence of environmental constraints. On the other hand, endogenous adaptive growth models suggest that environmental constraints can both improve and increase environmental growth if new technologies are implemented.

Based on the analysis below, the most important policies to be implemented by governments involve:

- Developing long-term energy strategies;
- Establishing efficient and transparent energy markets;
- Stimulating the advancement and implementation of technologies for new energy sources and the environment; and
- Increasing R&D in the fields of energy and the environment, especially in the transportation sector.

These policies must be implemented in a holistic manner and simultaneously in order to avoid future economic disturbances and speculation.

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1 INTRODUCTION

Globalisation is obscure in meaning, coined in the 1960s and entering general use in the 1990s (Cable 1999). In the following, globalisation is defined as the *integration of economic activities via markets*. It generates *economic growth* through international transmissions of new technologies and policy changes. Globalisation brings *rapid economic change* and economic change always imposes losses as well as gains. Closing a plant in one country and building a new one in another is a symbol of rapid economic change. But economic growth also distributes new wealth with which opportunities are created to lift people out of poverty. It provides a wide selection of consumer goods and services and offers opportunities for countries to access new technologies that are less resource-intensive and less polluting.

In the current debate, there is concern that it will be difficult to meet the energy demands of growing economies at affordable prices and that, consequently, the *high cost of energy* will hamper *overall economic growth*. There are also increasing global environmental concerns, which in all likelihood will result in more international treaties and national legislation on the environment. Increased *environmental constraints* affect *economic growth* but there are opposing views about their effect on sustainable development, with an increasing number of studies pointing out not only the costs of environmental constraints but also their gains.

The purpose of this paper is to illustrate the possible empirical evidence on the relationship between *economic growth* and *energy prices*, and *environmental constraints*, respectively.

2 ECONOMIC GROWTH

The proximate causes of growth are mobilisation of capital, labour, technology, skills (human capital), innovations and natural resources. Per capita income, or sheer growth in economic terms, has been the main concern for decades, but now the focus is on the prerequisites for economic growth being reconcilable with sustainable development. The debate has demonstrated that sustainable development is a very broad and interdisciplinary concept including economic, environmental, social and ethical issues etc. Sustainable development is a concept which enjoys broad acceptance, most probably because there is no agreement on its definition. In many cases it reflects an ideological power struggle. But a plausible interpretation would be that the concept must broaden limited monetary analysis (such as GDP and sheer economic growth) to include non-monetary impacts such as health, social and environmental developments.

3 ENVIRONMENTAL DEVELOPMENT

The UN recently completed the Millennium Ecosystem Assessment (MA). We will refer to the Synthesis report and the Summary for Decision Makers of the MA (MA, 2005a, b) to illustrate environmental development.

Humans have always utilised the services provided by the biosphere and its ecosystems. Ecosystem services include products such as food, fuel, fibres, fresh water and genetic resources, and regulating services such as air and climate regulation, erosion control, control of diseases, water purification and non-material benefits such as spiritual, recreation and aesthetic values. Changes in these services affect human wellbeing in many ways such as in terms of security, subsistence, health and social aspects.

The demand for ecosystem services has grown strongly during recent decades due to population and economic growth. Many assessments exist which state that demand for ecosystem services will grow rapidly in the future. With continued population growth and strong world economic growth there is a fear that biological and physical resources will decline to threatening levels. There are many examples of major changes in inland water systems, the overuse and contamination of groundwater aquifers, rapid deforestation and unsustainable management of forests, especially in developing countries, declining fisheries, and an undermining of the capacity of cultivated systems to avoid soil erosion and salinisation through the loss of agricultural biodiversity, to name only a few of the barriers to achieving the Millennium Development Goals.

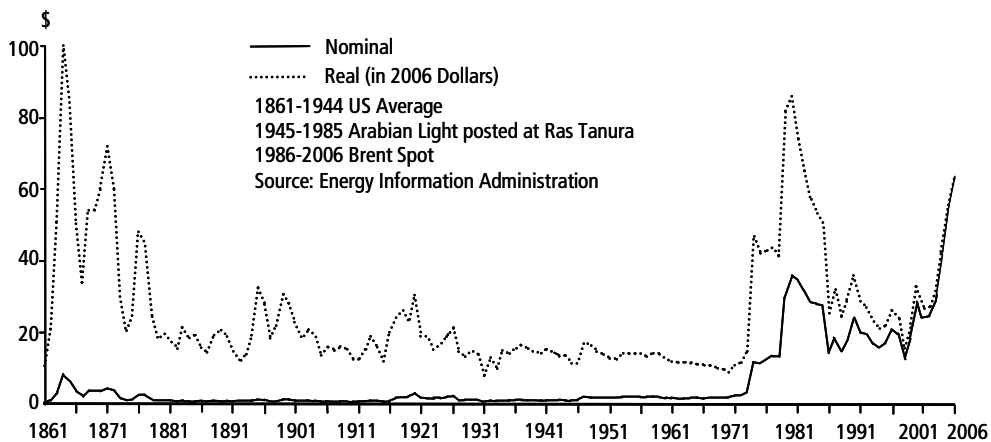
These much-feared ever-growing demands on increasingly degraded ecosystems are regarded as serious threats to sustainable development. Therefore, during the last decades we have seen an increasing volume of international conventions, treaties, agreements and national legislation introduced in order to protect the environment.

The identified dilemma suggests that with economic growth there will be gaps between ecosystems' service supply and demand, and this will lead to increased vulnerability amongst people, communities and nations. Therefore, the environment must be protected, its use must be sustainable and environmental constraints introduced. At the same time, there is a fear that these environmental constraints will limit the possibilities for economic growth required for global sustainable development.

4 ENERGY DEVELOPMENT

The recent rise in energy prices, shrinking resources and the search for alternative sources of energy and energy conservation technologies have brought into focus the relationship between energy and economic growth. Increased demand is assumed to have driven commodity prices strongly upwards, especially energy prices (see Figure 1).

Figure 1 Crude oil price history from 1861–2006.

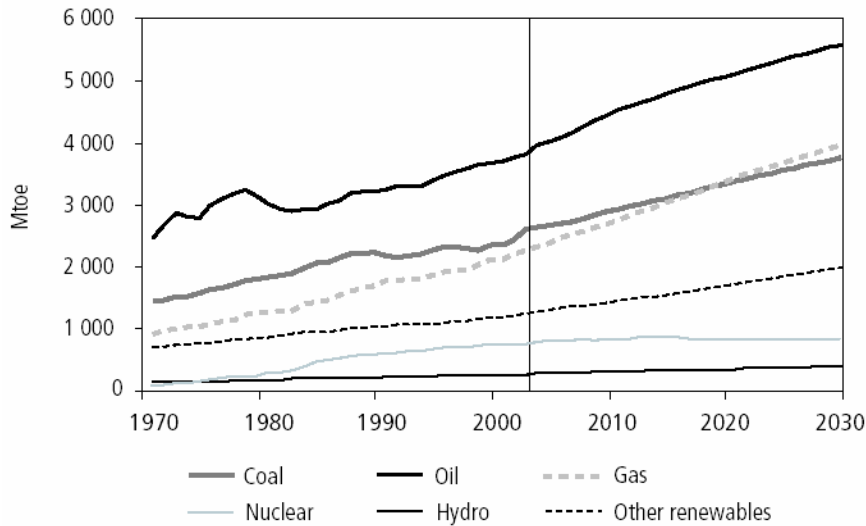


Source: M. Ströck, 2006, Released under the GFDL.

World primary energy demand has risen strongly during the last five years and is expected to grow substantially during the next 25 (see Figure 2).

The IEA assessment (IEA 2005a) states that the world will consume 16.3 billion tonnes of oil equivalents in 2030. This is 52% or 5.5 billion tonnes more than today. Fossil fuels will still be the major energy source and meet 81% of total primary energy demand by 2030 (one percentage point higher than in 2003). The IEA estimates that developing countries will account for 73% of this increase. According to the IEA, cumulative energy sector investments of \$17 trillion will be required through to 2030 in order to balance demand and supply. The possibility of financing this is one of the major uncertainties in the IEA projections.

Figure 2 World Primary Energy Demand.



Total 16.3 billion toe in 2030

- 50% more than today, 81% of supply as fossil fuels, 73% of the increase in developing countries

Source: IEA 2005a.

There are many myths and misleading statistics with respect to oil and gas reserves (Nilsson 2004). However, there is no physical shortage of oil and gas. While there is probably a foreseen shortage of conventional oil and gas sources, no lack exists if we include unconventional sources. Riahi and Keppo (2006) have recently presented scenarios on the oil and gas peaks in consumption. Their scenarios show that peak consumption depends crucially on economic growth, population growth and technological development. High population growth coupled with lower economic growth may lead to more extensive development of unconventional sources, whereas high economic growth and technological development, coupled with an earlier population peak and a more rapid change in economic structures towards a service and information economy, results in lower energy demand growth and less extensive development of unconventional sources. 'Conventional' and 'unconventional' fossil resources are defined by Rogner (1997) alongside conventional fossil fuel resources and reserves, which can be extracted with today's technology at competitive prices/economic viability. The Economist (2006) illustrates the oil prices at which various energy sources are economically viable today (see Table 1).

Table 1 Oil price at which energy source is economically viable.

\$80	Biodiesel*
\$60	US corn-based ethanol*
\$50	Shale oil
\$40	Tar sands; Brazilian cane-based ethanol; Gas-to-liquids GTL**, Coal-to-liquids CTL***
\$20	Conventional oil

* Excludes the impact of tax credits

** GTL economic at \$ 40 if gas feedstock price is \$2.50 or less per m BTUs

*** CTL economic at \$40 if feedstock price is \$15 per tonne or less

Sources: Cambridge Energy Research Associates; The Economist.

It is important to realise that the level of proven reserves is a function of prices: the higher the price of oil or gas, the greater the amount of economically recoverable reserves. In addition, higher prices stimulate the search for additional reserves.

Although fossil fuels will dominate the world energy markets in the coming decades, renewable energy is growing in significance. In Europe, wind power is already providing a significant share of electricity. Globally, biofuels may prove even more important than wind in the near future. There is growing interest in biofuels in the transport sector, and many countries, including the USA, are subsidising biofuel production. Brazil is currently the leading producer of biofuel (ethanol), whereas European countries are world leaders in biodiesel. Brown (2005) reports that Brazilian production is economically feasible, with an estimated production cost of 60 cents per gallon. Brazil is able to meet 40% of its automotive needs with ethanol. Elsewhere, the efficiency of biofuel production is no match for Brazilian sugarcane. In the US, corn-based ethanol costs \$1.40 a gallon (and enjoys a significant subsidy). Europe is also increasing biofuel and biodiesel production, mainly based on rapeseed and sugar beet. But while biofuels become economically feasible alongside increasing fossil fuel prices, there are also limitations. One of these is the available feedstock: whereas sugarcane can yield even 8 times the energy invested in its production, the figure is only 1.9 for sugar beet. At the global level, biofuel production will also ultimately compete for resources with farming and the need to provide for the growing world population.

Do the assessment of fossil-fuel reserves and the possibilities of renewable energy help us to predict future energy prices? Judging by the present situation, this is less than certain. There is no lack of oil and gas reserves now, and yet we

have very high oil prices, which is something of a mystery. It has been argued that this is a result of inadequate investment in energy supply and the energy infrastructure with respect to meeting growing demand; increased dependency on imported energy from politically unstable countries or regions; the rapid growth of demand for energy in the developing world, especially China and India; and finally, refinery capacity being too low.

However, the reality is somewhat different. According to the IEA, OECD crude oil inventories are at their highest levels for 20 years and US oil inventories are at their highest since 1998. Thus, oil prices no longer seem to be linked to inventory levels in the way they were until about three years ago. China's energy consumption only accounts for some 8% of world demand (but some 30% of the growth in that demand). India's energy consumption is less than 40% of China's current demand. Thus, these countries cannot currently be the cause of any intolerable strain on resources and are thereby not the driving force behind the current, high prices.

The oil companies claim that oil refinery capacity is high in spite of fears within the markets. In fact, they refer to too much oil refining capacity in some parts of the world in 2010, taking account of investments which have already been decided upon.

Some argue that oil prices are high because substitution possibilities in the transport sector are too limited despite the development of alternative fuels.

Plausible explanations for high energy prices include structural problems in the energy sector, unbalanced energy policies, speculation and expectations. The oil industry argues that oil traders are pushing prices up based on speculation about possible future supply shocks rather than any actual shortfall, and that oil prices will inevitably fall. State-owned or state-controlled national oil companies are controlling as much as 90% of the world's oil and gas and are restricting outsider access. These companies are not that well managed, contributing to higher costs. With the current oil prices, big oil firms are receiving huge economic rents and chalking up record profits (a net profit to the magnitude of \$100 million/day) but little is being reinvested.

This is not only valid for the oil and gas industry but also for the major players in the electricity markets. In many countries in Europe, the liberalisation of the energy market is perceived not to have functioned. The purpose of this liberalisation was to increase the economic efficiency of monopolistic markets by exposing all components of the supply chain to competition. In a number of countries the consumer perception is that liberalisation has simply created a new set of high priced monopolistic markets setting prices as marginal prices.

Independent energy analysts argue that electric utility companies in Europe have the simple objective of increasing profit margins instead of serving the energy infrastructure needed by consumers and industry. For example, the profit of the three largest utility companies in Sweden holding joint ownership of hydro power and nuclear power totalled SEK 65 billion in 2006, roughly 50% more than last year and nearly the same magnitude as the world's largest car producer (Toyota) (DN 2006).

European power systems are bound to fall short in the coming years due to ageing generation and transmission equipment. There are also doubts that current and planned generation plants will meet demand. Political decisions were taken with respect to the establishment of an internal market in electricity but nothing was done to remove the physical constraints of power transmission. Meanwhile, there has been a substantial increase in the interconnection of electricity systems but no central control mechanism or managerial database has been established. The liberalisation of the energy market resulted, as planned, in the involvement of many more stakeholders but no institutional redesign took place. Therefore, the European electricity market is not optimal and lacks efficiency, pushing prices upwards. At the European level, much trade is driven by differentiation in tariffs, taxes and subsidies and it is therefore not economically efficient (Gheorghe *et al.* 2006). Thus, in the case of Europe, there is an urgent need to upgrade and secure the electric power system (Gheorghe *et al.* 2006).

It should also be remembered that energy is an important source of government revenue for improving national budgets. In Europe, some 40–60% of the final consumer prices of energy are made up of some form of tax. Such high tax levels play an important role in the currently high consumer energy prices. Thus, governments gain a great deal from high energy prices and we may ask whether governments' concerns about high consumer prices for energy are genuine or simply lip service.

The current high energy prices are not only an effect of the above issues but also an outcome of imbalances in government policies. The lack of fruitful policy work was visible earlier this year when Russia turned off the gas tap. All EU policy efforts were concentrated on how to avoid this being repeated in the future instead of working on long-term, consistent energy policies for Europe. The need for a clear and coherent energy policy at the level of the European Union has never been more apparent.

Thus, there are a lot of question marks and mysteries with respect to the future energy situation. It appears clear that the era of cheap energy has ended for the moment. There are many upward pressures on energy prices, such as growing

demand and depleting reserves, but there are also downward pressures, stemming from increasing efficiency and the growing role of alternative energy sources. Wolf (2006) concludes that the world will require a lot of energy in the future and asks, "Where is all of this energy to come from?", "What does it mean for energy security?" and "What can economic policy contribute?"

5 EMPIRICAL RELATIONSHIPS BETWEEN THE ENVIRONMENT AND ECONOMIC GROWTH

There is a consensus that human economic activities are associated with negative development of the environment (Pittel & Rübhelke 2004). Most environmental degradation is due to renewable resource extraction or pollution. Much more controversy surrounds the economic impacts of a degrading environment and environmental constraints.

Empirical evidence on the relationship between economic growth and the environment is scarce (Vondra & Zagler 2004). In some cases, there are indications that, for some indicators, increased economic growth seems to accompany improved environmental quality (e.g. Shafik & Bandyopadhyay 1992). For municipal waste, the relationship seems to be in the other direction (e.g. Cole *et al.*, 1997). Islam *et al.* (2003) and Islam and Craven (2003) demonstrate that long-term economic growth is unsustainable due to increased environmental costs. For other indicators, it is claimed that there is a U-shaped relationship between income and environmental degradation, the so-called Environmental Kuznets Curve (Grossman & Kreuger 1993, 1995). This means that increased income growth first causes increased environmental degradation but at a certain threshold of economic growth the environment improves again (e.g. Selden & Song 1994). But others find little or no evidence for environmental Kuznets curves (e.g. Borghesi 1999, Panayotou 2000, Lieb 2003). Some argue that improved environmental quality may also induce economic growth (Dasgupta & Heal 1974; Pittel & Rübhelke 2004, Smulders 1994). But to assess the latter empirically, models of the entire natural resource complex are required. Thus, the relationship between economic growth and the environment seems to remain somewhat open.

Analysis using neoclassic growth models agrees that an economy with environmental constraints can grow based on a steady state growth path, which would be substantially higher if there were no environmental constraints (Smulders 1994). Zagler (1999) found a lower sustainable long-term equilibrium level of economic growth, including environmental constraints.

Endogenous adaptive growth models with environmental constraints suggest that environmental constraints can improve environmental quality and, at the same time, increase economic growth (Smulders 1994, Islam 2003). But Pittel and Rübhelke (2004) point out that this will not occur in the absence of technological development. Similarly, Chavas (2004) concludes that high economic growth with no adverse effects on the environment can only take place in the presence of new technologies.

The issue of the future climate can be regarded as a combined environmental and energy issue impacting on economic growth possibilities. The risks associated with the assumed, ongoing climate change are manifold. Examples include outbreaks of malaria, famines, water shortages, flooding, more powerful and frequent storms, poverty, high mortality rates etc. To avoid these, greenhouse gases must be reduced, particularly CO₂, whose emission is strongly linked to economic activity. There is concern that curbing CO₂ emissions will cause economic disruption.

Climate-economic change analyses are fairly uncertain and the relationships they imply are poorly understood. Early economic studies of the climate were unable to identify the very obvious economic benefits of abating GHG gases compared to the costs (e.g. Cline 1992 and Fankhauser 1995). Over time, the understanding of climate impact has improved, although it remains inconclusive. However, the conclusions have been transformed. *The cost of the abatement of emissions is substantially lower than the cost of future climate change* (e.g. Sanderson & Islam 2003). It seems clear, however, that countries have different capabilities for absorbing the impact on the economy of reduced CO₂ emissions. Some countries can do this with no severe economic impact (developed countries) while others will suffer substantially (developing countries).

Some studies have analysed the relationship between CO₂ emissions and economic productivity. For example, Lo *et al.* (2005) stated that China, Indonesia, Malaysia, Philippines and Thailand would have a declining economy with decreased CO₂ emissions, while the economic impact on Australia, Canada, Chile and the United States would remain negligible. Japan, Hong Kong, Korea, Singapore and Taiwan would experience a limited negative economic impact. Yamagata (2005) identifies an economic dip during the last 50 years due to decreased CO₂ emissions in Japan after the oil crisis in the 1970s, but it recovered rather quickly due to increased R&D. Sanderson and Islam (2003) conclude that, at global level, a climate change economy (one with emissions) would enjoy higher economic growth compared to a non-greenhouse gas economy, but the costs of abatements are substantially lower than the costs of climate change. Nature (2006) has summarised a major study on the stabilisation of CO₂ concentrations at 450 ppm (a very ambitious goal) by

comparing the results of 11 large-scale economic models. They concluded the following, "It would be relatively cheap if we did the right things". In the comparison, nine model results indicate a setback of less than 0.5% of global GDP by 2100. In a number of scenarios and simulations, there is a substantial boost to the economy based on the technological changes introduced. Thus, the overall results point in the same direction as for energy prices and economic growth.

6 EMPIRICAL RELATIONSHIPS BETWEEN ENERGY AND ECONOMIC GROWTH

The perception is that during recent decades, high energy prices have had a negative impact on economic growth. The oil shocks of 1973–74, 1978–80 and 1989–90 were succeeded by worldwide economic recessions, but it seems that the latest oil price rise has not had such an effect. By the end of 1998, the price rises of the 1970s were fully reversed, in real terms. A general perception is that any energy price change will again have an impact on the whole economy by causing feedbacks through the substitution of production factors and goods (e.g. Birol & Keppler 2000) and that the currently high energy prices will again be reversed, albeit after many years. It remains to be seen whether, and to what extent, energy prices actually fall in the future.

A substantial number of studies try to quantify the causality between energy supply, energy prices and economic development based on historical time series. We will discuss some of these studies in the following.

One group of studies deals with statistical causality analysis of the relationship between energy and long-term economic development. Such studies deal mainly with the relationship between the consumption of energy and economic development. For example, Lee (2006) studies 11 industrialised countries and finds that energy conservation would reduce economic growth in the USA, Canada, Belgium, the Netherlands and Switzerland, but not in the UK, Germany, Sweden, France, Italy and Japan, whereas Wolde-Rufael (2005) finds that, of 19 African countries, only 4 demonstrate a positive relationship between energy consumption and economic growth, whereas for 4 countries there was a negative impact on economic growth through increased energy consumption, and for the other 11, no relationship could be identified. Further studies by Han et al. (2004) find that an insufficient energy supply will substantially curb economic growth in China, whereas Paul and Bhattacharya (2004) find that while energy seems to act as an engine for economic growth in the short-run, in the long-run, the causality runs from economic growth to energy consumption.

If we are to believe these studies, we can conclude that the picture is a very mixed bag. It seems that the impact of high oil prices on economic growth depends very much on the stage of development and structure of the economy in the country in question. It also looks as though the causal relationship between energy prices and economic growth varies over time, depending on the development of the economic structure (Lee & Chang 2005). Most developed countries would be able to handle increased energy costs without long-term adverse impacts on economic growth, but developing countries would suffer much more.

There is another set of analyses using different kinds of endogenous economic models and advanced econometrics to analyse the impact of energy prices on economic growth. For example, Gardner and Joutz (1996) study the USA and find that energy price shocks have had no significant impact on economic growth. More recently, Birol and Keppler (2000) focus mainly on OECD countries, and find that while oil and oil price shocks caused some economic disruptions, overall economic growth over the past 30 years has been sustained. The IEA (2004) estimates that recent energy price increases have slowed down world GDP by 0.5% in the short term, whereas Bretschger (2006) finds that rising energy prices have had no long-term negative economic impact, and in some cases they have had a positive impact on economic growth. The IMF (2006) finds that oil price stocks have a marked but relatively short-lived economic negative impact.

The transportation sector currently accounts for some 55% of the primary oil demand in OECD countries and about 35% in the rest of the world. The IEA (2005b) forecasts that, by 2020, these shares will have increased to 62% and 42%, respectively. Transport is responsible for more than 20% of energy-related CO₂ emissions worldwide. The WBCSD (2004) estimates that worldwide transport-related fuel use is currently around 2.5 trillion litres Gasoline Equivalent and will grow to some 5.0 trillion litres by 2050, with 97% of the energy use being oil products.

Surprisingly few holistic and deep analyses have been drawn up on the relationship between energy costs in the transportation sector and economic output. The costs of energy consumption account for a large portion of the operation and maintenance costs of transport (Liu & Golovitcher 2003). In the forest sector, energy costs constitute some 30–35% of a transporter's total revenue (Ekstrand *et al.* 2005). The transportation sector has so far mounted an inelastic response to energy prices, meaning increased energy costs have not reduced its energy demand (e.g. IEA 2005b, Potemis 2006). However, substantial environmental costs associated with energy consumption in the transportation sector exist in the form of the costs of air pollutants, noise and

climate change (Bickel *et al.* 2005). Fuel prices differ greatly between countries due to varying taxes. Rietvold and van Woudenberg (2005) demonstrate that fuel (taxes) is merely considered one of many sources of income by governments. There is no support for the notion that fuel taxes are higher in countries where externality problems are more severe due to transportation.

Direct estimates of the impact of increased energy prices on total transportation costs are rare in the available literature. But the Forestry Research Institute of Sweden (personnel communication, 23 August 2006) estimates that a 10% increase in fuel costs would increase transportation costs in the forest sector by 3–3.5%. These results also demonstrate that this cost increase would be directly transferred to the customer. Thus, the *increase in transportation costs due to increased energy costs is absorbed by the overall economy.*

It can also be concluded that technologies are already available that could be applied in the transportation sector to very low costs or negative costs, which could reduce fuel consumption by up to 25%.

In the transportation sector, alternative energy sources are currently burdened by too many market failures and too high development costs. Both customers and the industry require strong incentives to move away from oil dependent technologies. Governments cannot shy away from this issue (e.g. IEA 2003, 2005b, Turton 2006, World Watch Institute 2006).

Taking all of these analyses into account, we achieve a picture that covers the entire range of the following: the economic growth neutrality of energy prices; marginal negative impact on economic growth; substantial negative impact on economic growth; and increased economic growth. Thus, based on an empirical economic analysis, it is difficult to draw solid, clear-cut conclusions. It appears, however, that developing economies are more sensitive to increased energy prices than developed economies. There also seems to be a threshold value for sensitivity to energy prices and these thresholds vary depending on the development stage of the economy. Different economies have different capabilities to absorb price shocks. Finally, there is something of a consensus on there being short-term economic disruptions due to increased energy prices but hardly any long-term negative impacts on economic growth. Raw material based economies, the transportation sector and developing countries are probably more sensitive to these short-term disruptions (Grahn & Resvik 2006 and IMF 2006).

7 WHAT CAN GOVERNMENTS DO?

Based on this analysis, it seems plausible that the world economy *can survive with substantial energy price rises, due to rising demand for energy, but it cannot survive supply shocks* in the form of substantially reduced supplies of conventional energy.

It seems plausible that economic growth will continue (although unevenly over time) despite higher energy prices. This will cause increased pressure on the environment, and such pressure will lead to more environmental treaties and legislation while acting as a constraint on the utilisation of environmental resources. Governments cannot do much about this development, but they can stimulate innovations and R&D with respect to environmentally friendly technologies and products.

We can expect a substantial increase in energy consumption. This increased consumption may push energy prices upwards, which will probably cause short-term negative disturbances of economic development, but no long-term ones. Most of the adjustments resulting from these developments will take place in the private sector. In order to avoid a slow-down in economic growth, governments must (e.g. Birol & Keppler, 2000):

- Take measures for the establishment of efficient energy markets, meaning the establishment of policies for transparent prices, rapid adaptation to changing structural conditions and the rapid diffusion of new technologies.
- Develop long-term energy strategies.
- Stimulate the advancement of new energy technologies. New technologies will have major rebound effects on economic development in general.
- Governments must allow world energy prices to have their full impact on domestic energy prices while keeping energy taxes and inflation under control.

In energy exporting countries, governments may wish to take measures to sterilise inflows of foreign exchange so that growth in other sectors of the economy is not adversely affected. The above discussion of the current energy price situation concluded that, for the moment, there is a great deal of speculation and expectation. Willmore (2006) points out that the worst economic effect of today's energy prices is that they are expected to be temporary and therefore long-term investments in long-term solutions are being retarded. Thus, governments have a responsibility to establish solid, long-term energy policies in trying to avoid economic disturbances and speculation.

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COMPETITIVENESS AND STRUCTURAL POLICIES: WHERE DOES THE EU STAND?

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Summary

Average EU growth performance has been disappointing over recent decades. This picture is not uniform across countries, however, some having done better than others. We argue that the EU policy debate, rather than focusing on competitiveness, ought to address the reasons for disappointing aggregate growth outcomes as well as intra-EU heterogeneity. On the whole, weaknesses in growth performance can to a large extent be ascribed to inadequacies in the structural policy framework. The policy shortcomings that we identify based on a substantial body of OECD evidence are largely unsurprising. Rather, they have been true for some time, which raises the question of why reform has been insufficient. Based on the emerging empirical literature concerning the political economy of structural reform, we suggest a number of actions governments might take to facilitate the reform process. For example, structural reform may be assisted by creating scope for the macroeconomic accommodation of any negative short-term impacts, which is an additional argument for establishing more sound fiscal positions. In addition, the tendency for structural reforms to have ripple effects across different markets suggests that trade liberalisation, which is desirable in itself, could help reform in other areas. Finally, we also emphasise the role that analysis by institutions regarded as independent and credible can play in terms of unblocking the reform process.

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1 INTRODUCTION

Europe is obsessed with competitiveness. Conferences are held to discuss it, while politicians continually emphasise it. Major policy initiatives, such as the Lisbon Agenda, are launched with reference to competitiveness. Yet, this focus makes little sense in terms of the discussion of economic policy. At face value, the notion of competitiveness as a policy objective has a mercantilist flavour. It is suggestive of a zero-sum game whereas, in fact, one country's economic success rarely hampers, and frequently helps, that of another country. A focus on competitiveness may thus lead to strange policy reactions and inter-dependencies across countries. It is easy to imagine a kind of arms race as countries try to improve or preserve perceived competitiveness, for example by ramping up subsidies to, or tax-breaks for, various activities.

In order to provide a meaningful policy discussion, while still using the 'c' word in the title, we would therefore interpret the concept of competitiveness differently. More specifically, we think of competitiveness as a gauge of the extent to which policies create incentives and the preconditions for private economic agents, allowing them to maximise output. At the risk of sounding somewhat tenuous, we would contend that most policies favourable to economic growth would also enhance welfare. Recent OECD work has examined the link between GDP growth and welfare, summarised in Box 1.

On this basis, our focus throughout the rest of this paper is on where the countries of the European Union stand in terms of growth-friendly policies.² This involves assessing policies in individual countries, since most of the policies that matter in this regard are national ones, trade policies being an important exception. The focus on national policies in individual EU countries also gives rise to one of the important conclusions of the current paper: there is no single EU story. Some EU countries seem to have policies in place that are friendly to economic activity and competitiveness. This is reflected in their high levels of, and respectable growth in, real income. Other EU countries do less well. Since countries in this latter group often happen to be large, average EU performance tends to leave something to be desired.

The rest of the paper first reviews how countries are doing with respect to various aspects of economic performance. Subsequently, it discusses the structural policy settings responsible for observed performance. Given that policy inadequacies and corresponding performance weaknesses have often been recognised for years, the third section discusses some factors that

² To be more specific, we focus on the EU countries for which there is information in OECD databases, which in most cases means the 19 EU countries that are also OECD Members, or the 15 EU Members before the 2004 accession wave.

influence the process of structural reform and the possibilities for speeding up the process. A brief, concluding section sums up the paper.

Box 1 The relationship between GDP and welfare

There is no simple relationship between GDP/capita and wellbeing. At one level, GDP/capita is an imperfect measure of the material resources available to people. At another, the availability of material resources is only one factor affecting wellbeing. More specifically:¹

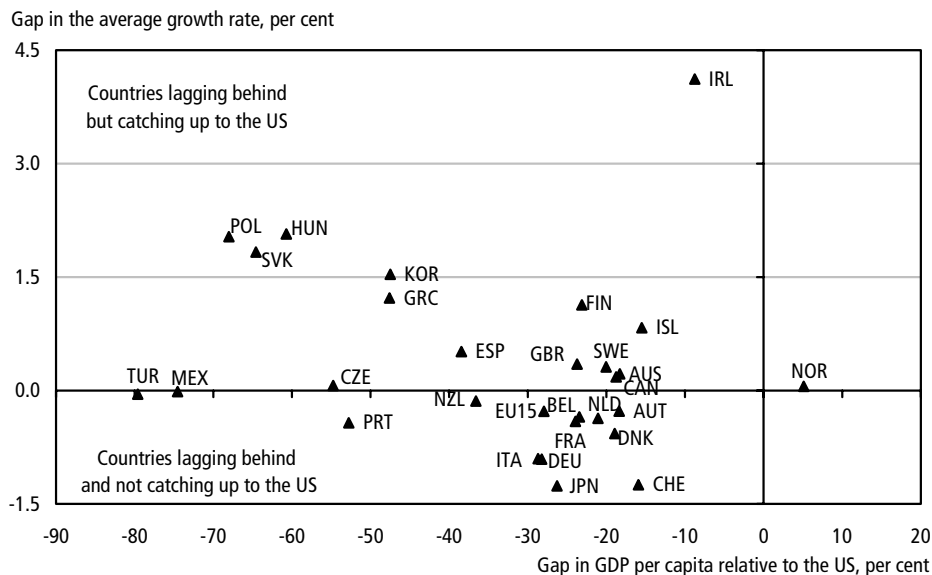
- A number of adjustments are possible within or around the system of National Accounts to move from GDP to concepts that are closer to real income. These adjustments take into account factors such as depreciation, net income from abroad and variations in the terms of trade. However, whether looked at in level or in growth rate terms, rankings of OECD countries based on these adjusted measures are not materially different from rankings based on GDP/capita.
- Recent Finnish experience furnishes an interesting example of growth being higher on an output basis, such as for GDP, than on a real income basis. The large ICT sector in Finland is experiencing very rapid productivity growth and, as a result, a tendency for prices to fall. Hence, GDP growth has been rapid but the terms of trade have tended to decline.
- People clearly derive wellbeing from their leisure time but the appropriate valuation of leisure is uncertain. Nonetheless, applying a number of different valuation assumptions, the rankings of countries in terms of leisure-adjusted GDP levels or growth rates is not very different from GDP-based rankings.
- Many would argue that, in terms of wellbeing, a dollar at the bottom of the income distribution is worth more than a dollar at the top. Cross-country rankings of household income levels under various assumptions about aversion to inequity are not too dissimilar to a GDP-based ranking for a low degree of aversion to inequity. However, with strong aversion to inequity a number of countries change positions with, in particular, the United States moving down the ranking. Rankings of countries according to growth rates are also highly sensitive to the degree of aversion to inequity.
- A different approach to the measurement of wellbeing relies on considering a wide range of social outcome indicators, stretching from employment and educational achievements, to child poverty, life expectancy and suicide rates. As it turns out, however, these indicators do not really tell an alternative story to that arising from GDP/capital levels. It is difficult to assign relative importance to the various indicators and while the cross-country patterns of some of them are correlated with each other and with GDP/capita, others are not. Nonetheless, the fact that a number of such welfare indicators appear not to be very responsive to GDP developments may signal that welfare returns from growth are diminishing.
- Subjective evidence on happiness based on surveys shows a positive, albeit noisy, cross-country correlation with levels of GDP/capita but, over time, there is little tendency for people to become happier as they become richer. This may in part reflect the fact that evidence on subjective happiness is better at registering the effects of relative incomes than absolute income.

¹ The following is based on Boarini et al. (2006).

2 WHERE DOES THE EU STAND ON PERFORMANCE?

For most of the period between the end of WW2 and the 1970s, western European countries tended to be catching up with the United States in terms of GDP/capita. Since then the EU15 has marked time, with hints that it may even have begun to slip against the United States from the mid-1990s – this is a presumption rather than a definitive statement, given that the difference in average growth is small and that macroeconomic fluctuations may affect the numbers (Figure 1). Nonetheless, the EU15 average performance hides considerable heterogeneity, with the three large continental economies falling more clearly behind US growth whereas many of the smaller countries, as well as the United Kingdom, have either held their own or continued to catch up.

Figure 1 GDP per capital levels and growth rates: gap *vis-à-vis* the United States¹.

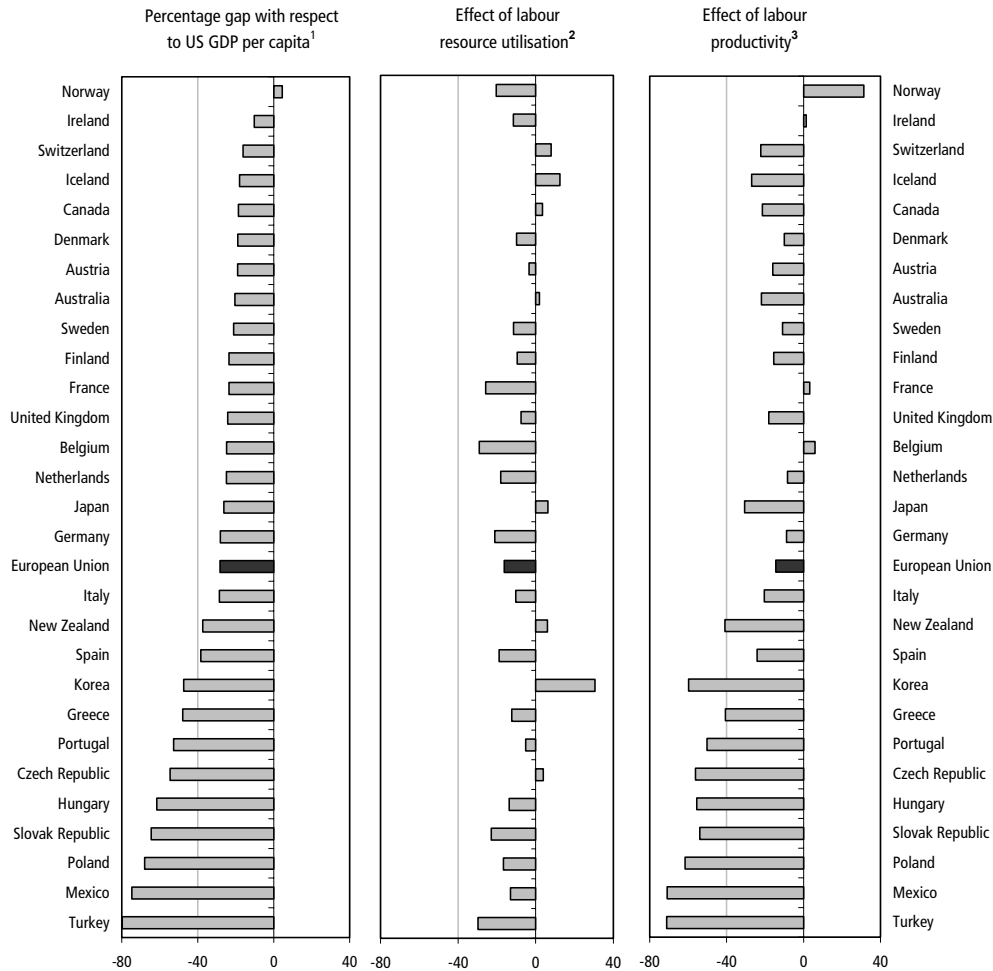


¹ The average growth rate in GDP per capita is calculated over the period 1995–2004 on the basis of volume data from national accounts sources. The level of GDP per capita is for 2004 on the basis of 2000 PPPs.

Source: OECD National Accounts of OECD Countries, 2004 and OECD Economic Outlook, No. 76.

As a result of these growth patterns, the level of GDP/capita in the EU15 is about a third lower than in the United States (Figure 2, left column). Again diversity is large, with the gap for Ireland being less than 15 per cent and the gap for Portugal exceeding 50 per cent. Some of the newer EU Member countries in eastern Europe are even further behind.

Figure 2 The sources of real income differences, 2004.



¹ Based on year 2000 purchasing power parities (PPPs).

² Labour resource utilisation is measured as the total number of hours worked divided by population.

³ Labour productivity is measured as GDP per hour worked.

Source: OECD, National Accounts of OECD Countries, 2005; OECD, Economic Outlook, No. 78; and OECD, Employment Outlook, 2005.

The gap in GDP/capita with respect to the United States can be accounted for by lower utilisation of available labour resources and by lower productivity of labour. For the EU15, the two components of the gap have almost the same magnitude. Lower utilisation of labour resources is the result of lower labour force participation, higher unemployment and lower working hours for those who work. The gap in productivity could in principle also be broken down into a number of contributing factors but, in practice, weak data make it difficult to compare levels of capital intensity and multi factor productivity across countries.

As with the gap itself, the breakdown into labour utilisation and productivity differs across EU countries. To some extent, there is a general pattern across all OECD countries according to which countries with large gaps in GDP/capita also tend to have large gaps in labour productivity. The eastern and southern EU Member countries fall into this category. However, the picture is much more diverse for those EU countries that have a GDP/capita gap of more moderate magnitude. Two countries, Belgium and France, are even recorded as having higher hourly labour productivity than the United States, with the GDP/capita gap more than fully accounted for by lower labour utilisation. However, the figures in this area need to be read with care.

One of the influences on recorded labour productivity is the quality of the labour employed. Evidence from a number of countries with low employment levels suggests that, in particular, low-productive labour is either unemployed or does not participate in the labour market. Hence, if employment levels in these countries were boosted to the same level as in the United States or some of the better-performing European countries, recorded productivity would tend to decline.³ In this sense, underlying labour productivity may be weaker than apparent productivity in countries with low employment.

With the Czech Republic as the only exception, all EU countries in Figure 2 have a lower labour utilisation than the United States. This has sometimes led to the suggestion that Europeans have a greater preference for leisure and that, accordingly, one should not be too concerned about the part of the GDP/capita gap that reflects lower labour utilisation. There is reason to believe that this argument is grossly exaggerated. More than half of the EU15-US gap in labour utilisation is accounted for by a lower employment/population ratio in EU15 countries. Recent OECD work illustrates that low employment figures to a large extent reflect disincentives to offer, seek and accept jobs.⁴ Hence, along the extensive margin of labour supply there seems to be little scope for a preference for leisure furnishing an adequate explanation of lower EU labour supply.

Along the intensive margin of labour supply, it is also unlikely that, to a significant extent, lower working hours reflect a preference for leisure. In any case, this would have to be a recently developed preference, given that European working hours were longer than those in the United States a few decades ago. Furthermore, there is reason to assume that distortions created by policy also play a role in this area (see below). That said, there are also arguments for working hours being excessive in the United States.⁵ First, there may be positive externalities in leisure consumption which are not easily

³ Estimates in Bournès and Cetté (2006) suggest that the effect on hourly productivity exceeds 10 per cent of the US productivity level in France, Germany, Italy and the Netherlands.

⁴ See Bassanini and Duval (2006), Duval (2004) and Jaumotte (2004).

⁵ For further background, see Alesina et al. (2005) and Landers et al. (1996).

internalised in the decentralised US labour market.⁶ Second, in the context of asymmetric information, working hours may be used to signal commitment, leading to long hours where there are no binding institutional ceilings.

The less than satisfactory growth performance of some EU countries would be less of a concern if there were signs that it might be reversed in the future. That is not the case, however. Ageing will affect many European countries more strongly than the United States. Hence, even taking into account the long-term effects of recent policy reforms on retirement behaviour as well as the tendency of younger cohorts of women to participate in the labour force, projections of GDP/capita growth are significantly lower in the large continental European countries than in the United States over the coming decades due to the relative fall in the share of the working age population (OECD, 2006a).⁷ Furthermore, on some accounts, the United States is investing more strongly in future productivity growth than most countries in the European Union. For example, spending on R&D as a share of GDP is higher in the United States and the share of the youth cohort enrolling in tertiary education is substantially higher. In both cases, however, as in the case of the ageing effects, there is no single European story. Nordic countries, in particular, tend to do better whereas southern countries tend to do worse.

3 WHERE DOES THE EU STAND ON STRUCTURAL POLICIES?

EU countries are not doomed to perform less well than the United States or other leading OECD members in terms of economic growth. First, as described above, some EU countries actually already perform fairly well. Second, the performance of those countries that do not can be lifted through the appropriate structural policy reforms. The links between structural policies and growth have been studied intensely by the OECD, and this section builds on the cumulated evidence.⁸ Four fields of structural policies are considered below (policies in labour, product and financial markets as well as those affecting innovation and human capital) and in each case the effect of policy on both labour utilisation and productivity is considered.

⁶ Positive externalities in leisure consumption arise when one person derives more pleasure from leisure if another person consumes leisure at the same time, as is likely to occur within families or among groups of friends. However, with bargaining between individual workers and employers such effects are unlikely to be taken into account whereas collective bargaining may act as a co-ordinating mechanism to integrate these spillovers.

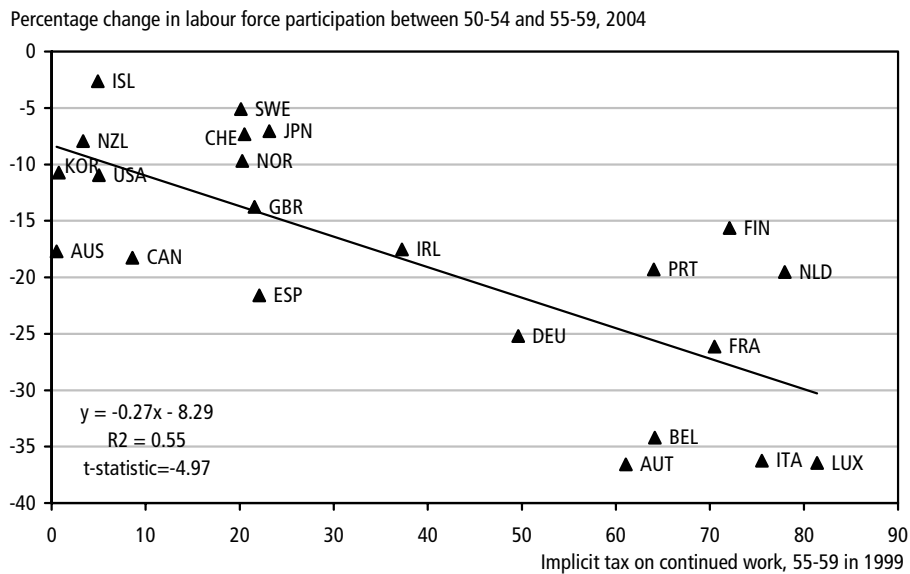
⁷ The projections in OECD (2006a) are based on a common rate of growth of labour productivity across all richer countries so that cross-country growth differences reflect demographic changes and changes in labour force participation and unemployment.

⁸ See in particular OECD (2003).

3.1 Labour market policies

As discussed above, about half of the EU15-US gap in GDP/capita can be accounted for by lower labour utilisation. On the labour supply side, the low age of retirement in many EU countries is a major explanation. This again is importantly affected by incentives arising from misguided policies concerning public transfers for early retirement, disability, unemployment and old-age pension.⁹ A measure of older persons' disincentive to supply labour is the so-called implicit tax on continued work. In broad terms, it represents the opportunity cost (in the form of lost public transfers) incurred by a person working an additional year instead of joining, for instance, an early retirement scheme. As illustrated in Figure 3, this implicit tax varies strongly across countries for people in their mid-50s, reflecting the specific arrangements for transfer and pension systems. It is also strongly related to retirement behaviour: where the implicit tax is high, there is a sharp drop in labour force participation between persons in the first and the second half of their 50s. It is noticeable that there are EU countries with both high and low implicit taxes, but all the countries with very high implicit taxes are EU countries.

Figure 3 Labour market withdrawal and implicit tax rate.



Source: OECD, Economic Policy Reforms: Going for Growth, 2005.

⁹ For a review of the issues and relevant empirical evidence, see OECD (2005a) and Duval (2004).

Apart from their effect on retirement incentives, where they can act as pathway into retirement, disability benefits are a concern in several countries where large numbers of the working age population are covered by these schemes. Thus, while the share of the working age population on disability benefits is no higher in the EU15 than in the United States, numbers are particularly high in the Nordic countries, in the United Kingdom and in some transition economies.

A number of EU countries, particularly in southern Europe, have very low female participation rates. This reflects several factors, including incentives arising from tax systems and family policies.¹⁰ As regards tax systems, the more equal taxation of second earners may be called for and, as regards family policies, a greater reliance on childcare support than on child benefits may also boost female labour supply.¹¹

Higher average unemployment is another reason for lower GDP/capita in EU countries than in the United States. Again, however, cross-country variability is high with EU unemployment rates ranging from levels comparable with those in the United States (in the United Kingdom and some smaller countries) to rates in excess of 15 per cent in some transition countries. The policy drivers of unemployment have been the subject of substantial research, including an effort made within the context of the recent reassessment of the OECD's Jobs Strategy.¹² The main upshots with relevance to policy settings in EU countries are:

- Where not counter-balanced by strict activation policies aimed at strengthening job search and availability, high unemployment benefits of long duration boost unemployment. Net replacement incomes tend to be high relative to earnings and of long duration in Europe north of the Alps, but some of these countries, notably in the Nordic region, also have more rigorous activation policies. Because replacement incomes pose incentive problems, a few countries have implemented work benefits to address these. However, if such benefits are sizeable they have to be phased out in order not to be too expensive and this may lead to very high marginal effective tax rates in the phase out range, posing other incentive problems such as weak incentives to improve professional competencies.

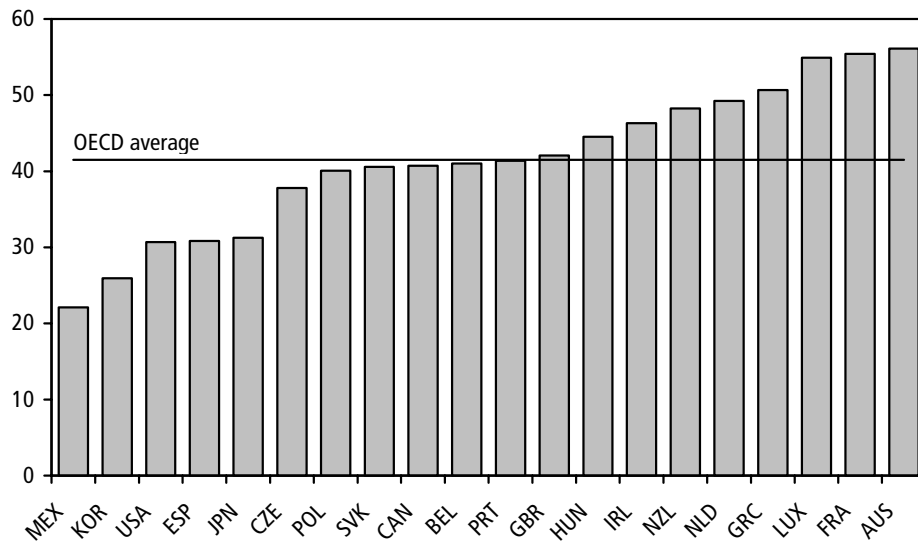
¹⁰ For a review of the issues and relevant empirical evidence, see OECD (2005a) and Jaumotte (2004).

¹¹ At the same time, however, it should be recognised that child benefits are easier to target at social objectives than childcare support.

¹² Analytical work empirically identifying linkages between policies and unemployment is described in Bassanini and Duval (2006).

- Taxes insert a wedge between the real wages employers pay for labour and the real wages employees receive, and thereby raise unemployment. This effect is particularly pronounced when wage floors, for example those created by minimum wages, prevent wage earners from accommodating the tax wedge through lower real wages. The cost of labour at the minimum wage is particularly high in some EU countries (Figure 4). This is despite a number of these countries providing reductions in payroll taxes for workers at the low end of the pay scale. More generally, high minimum wages may not be a particularly effective instrument for dealing with poverty given that the latter is predominantly a non-employment phenomenon in most countries.
- Competitive product markets also help to keep unemployment low. A main mechanism is that more competition means lower mark-ups as well as higher output, which again allows for a tighter labour market. In parallel with firms losing market power, real labour incomes tend to rise. The policy settings that are of relevance here are discussed further below.
- There is considerable evidence that job protection reduces job opportunities for certain groups and can lead to increased labour market segmentation and more long-term unemployment. It may also sap productivity growth as investment in R&D and physical assets is discouraged because the labour adjustment necessary to taking full advantage of such investment is made more difficult. There is also evidence which suggests that policies to reform job protection by allowing for short-term contracts while leaving in place strict protection for permanent contracts may be ineffective or even counter productive. Policies in many continental EU countries have indeed combined the maintenance of relatively strict protection for permanent contracts with an easing of conditions for short-term contracts. Further, the enforcement of job protection by the judicial system can be a source of uncertainty that hampers hiring.
- There is evidence that collective bargaining structures play an important role in unemployment, with corporatist structures in some of the smaller EU countries often credited with better unemployment outcomes. In practice, however, it is very difficult to influence bargaining structures through structural policies. In the absence of corporatist traditions, some continental EU countries apply administrative extension of bargained agreements, but this may only undermine the representative nature of the bargaining parties while pricing some of the more vulnerable groups of workers out of employment.

Figure 4 Minimum cost of labour, 2005. Percentage of labour cost of average worker.¹

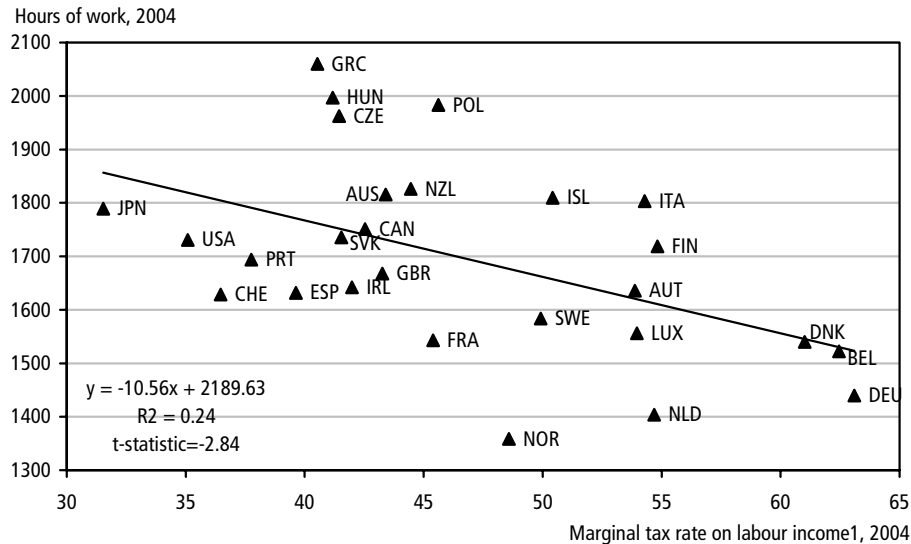


¹ The cost of labour is the sum of the wage level and the corresponding social security contribution paid by employers in manufacturing and services industries.

Source: OECD, Taxing Wages database and OECD Employment Outlook.

It is not only the number of persons employed that is likely to be unfavourably affected by policies in EU countries. Low annual working hours are also likely to be a result of distortions created by policy. A prime suspect in that regard is high marginal tax rates (Figure 5). Northern European countries have particularly high marginal tax rates on labour and also tend to have lower annual working hours.

Figure 5 Hours of work and marginal tax rate, 2004.



¹ Marginal income tax rate plus employee contributions and indirect taxes, based on a single person with no children earning the average wage.

Source: OECD, Taxing Wages; Analytical database, 2004.

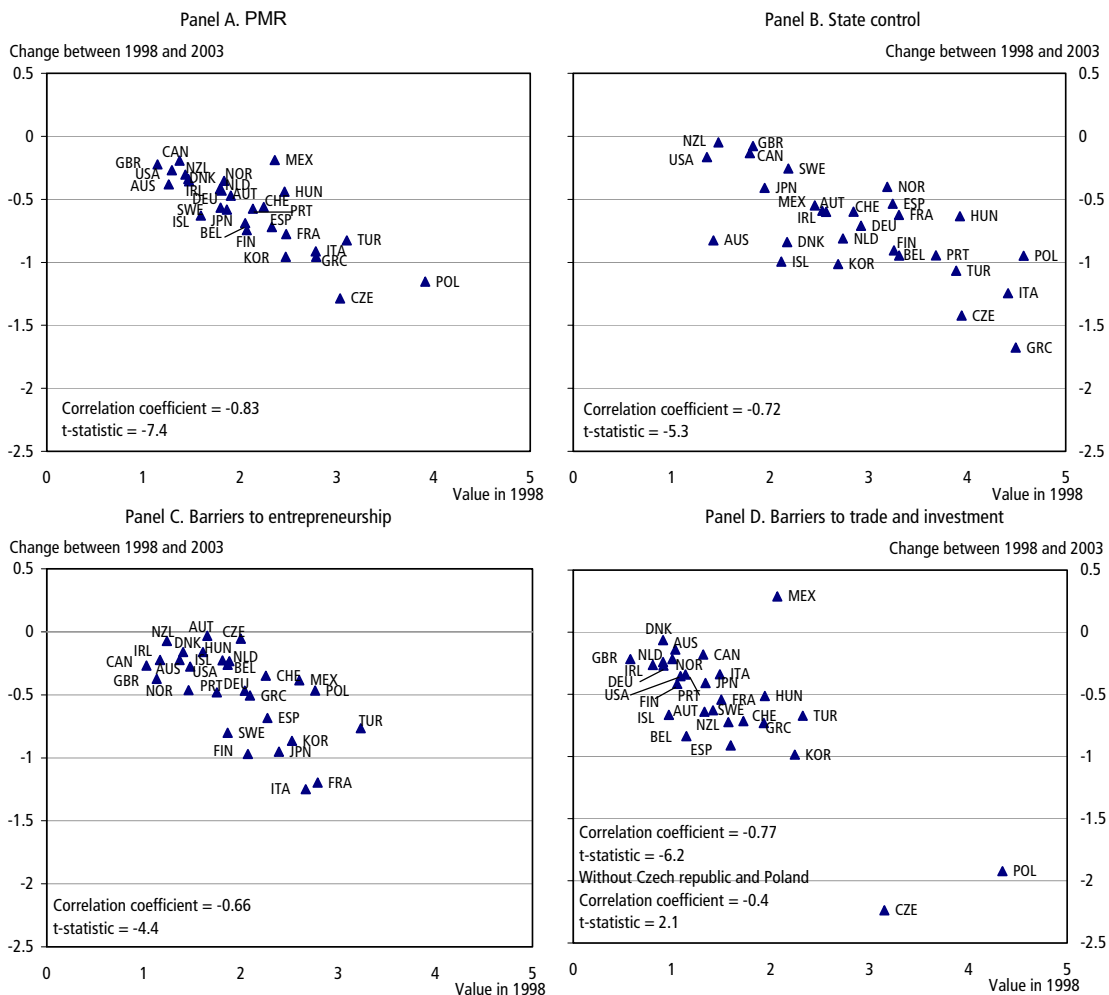
3.2 Product market policies

A rich empirical literature supports the notion that more competitive product markets tend to boost productivity.¹³ This happens through a number of channels including the pressures that competition puts on inefficient enterprises to either close or shape up. It may be feared that overly-intensive competition will quickly erode the profits associated with the introduction of new products or production processes since best practice would spread very rapidly, but in practice this fear appears to be unfounded, at least at currently existing levels of competition and given the appropriate protection of intellectual property. Indeed, there is convincing evidence that competition may act as a spur to innovation efforts. In the European context, where increased R&D investment is seen as a priority for virtually all countries, this suggests that measures to enhance product market competition are the best approach to reaching (sometimes arbitrary) targets for R&D investment (see further below). Even if the effect on innovation were limited, greater competition would still improve the allocation of resources across the economy and the efficiency with which they are deployed.

¹³ See the references quoted in OECD(2005b), which also quantifies the beneficial effects of further liberalisation.

Overall, anti-competitive product market regulation has declined throughout the OECD area over the past three decades. At the same time, available indicators suggest that there has been some convergence of regulatory stances across OECD countries, also over the more recent past (Figure 6). EU countries generally started out with the most heavy-handed regulation and the internal market programme may be among the explanations not only for absolute but also for relative progress since then. That said, EU countries are still among the most heavily regulated. In particular, eastern and southern European countries maintain a more restrictive regulatory stance, with the former group not yet having overcome their historical legacy despite substantial progress.

Figure 6 Examining convergence in regulatory approaches¹.



¹ A negative correlation between the indicator value in 1998 and its change between 1998 and 2003 is indicative of convergence in regulation, given that the scale of the indicators is 0 to 6 from least to most restrictive.

Within individual regulatory areas, EU countries have achieved a high degree of liberalisation of trade and investment flows, although extending these gains to the services area in the context of the services directive has proved difficult. Performance is more heterogeneous as regards state control and, to a lesser extent, with respect to barriers to entrepreneurship. While not a direct regulatory shortcoming as such, the tendency for consolidation in the utilities sector to occur within, rather than across, borders may pose challenges to effective competition going forward. Finally, the common agricultural policy remains grossly distorting, even if the weight placed on the most market-unfriendly instruments has been reduced.

3.3 Financial market policies

Policies affecting financial markets also play an important role in influencing economic growth. At a theoretical level, financial markets perform crucial roles in mobilising saving, channelling it to the investment projects with the highest returns (including investment in innovation), allocating risk to those who will accept it at the lowest price, and monitoring investment in a context of corporate governance. In order for financial markets to perform these roles, regulation should not unduly constrain competition while, on the other hand, providing for systemic stability.

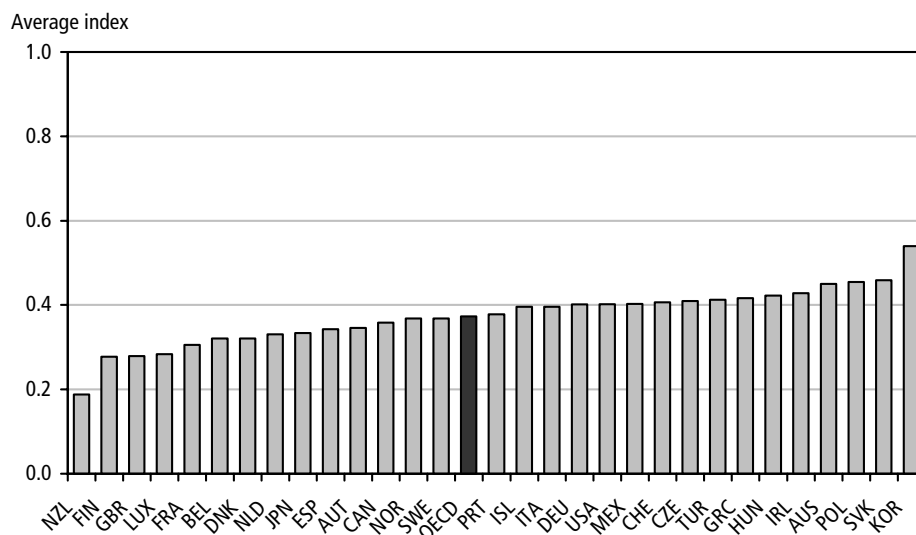
At the empirical level, there is only limited evidence linking financial regulation with the performance of financial markets and growth.¹⁴ A set of indicators recently developed by the OECD, based to a large extent on information collected by the World Bank, represents an exception. The indicators aim at synthesising the stance of a wide range of regulations with respect to competition and there is evidence that these indicators are actually related to growth outcomes (OECD 2006b). While this work remains preliminary and therefore not a solid basis for strong policy conclusions,¹⁵ the indicators suggest that intervention in the banking sector may act as a brake on growth primarily in eastern European countries, where entry barriers remain significant (Figure 7). The same countries, as well as some southern European countries, also appear to have a less competition-friendly regulation of securities markets, reflecting issues regarding contract enforcement, investor protection and efficiency of bankruptcy procedures.

¹⁴ Most of the empirical evidence is concerned with the relationship between growth-related outcomes and measures of financial market depth, such as stock market capitalisation or bank credit, but not with direct measures of policy settings. This literature has often suggested very large impacts from financial markets on growth, see e.g. Leahy et al. (2001).

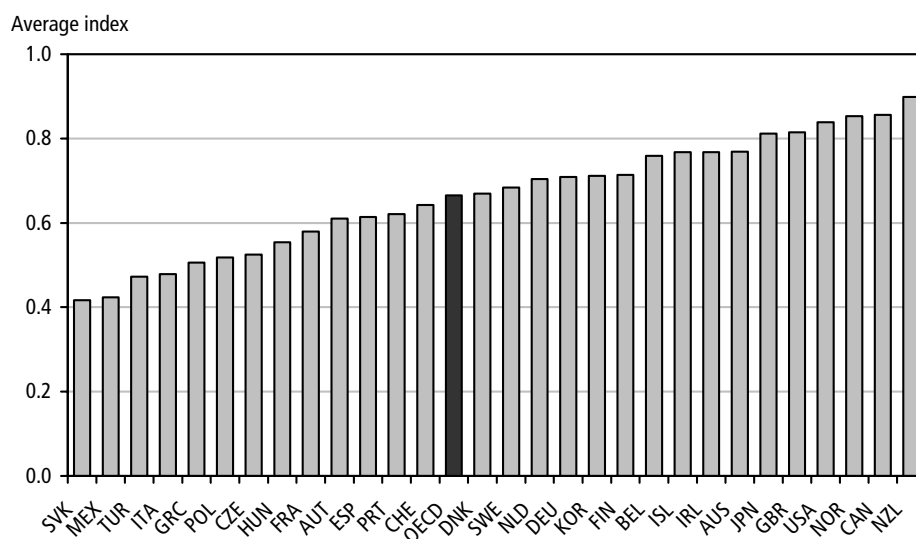
¹⁵ Among other things, the indicators do not capture "soft" issues such as the tendency for the liberalisation of markets for banking services in Europe to have been accompanied in some countries by substantial concentration in the domestic banking sector, with only limited consolidation across borders.

Figure 7 Indicators of the pro-competitive stance of financial regulation¹.

A. Regulatory barriers to competition in banking, 2003²



B. Securities market regulation, 2005³



¹ The scale of the indicator is 0–1 from least to most restrictive.

² Covers domestic entry, foreign entry, activity and government ownership. A higher value indicates more competition-restraining regulation.

³ Covers contract enforcement, access to credit, investor protection and bankruptcy procedures. A higher value indicates regulation that is more conducive to financial development.

Source: OECD and World Bank, Bank regulation and supervision database.

3.4 Innovation and human capital policies

Innovation is obviously a main driver of growth over the long term.¹⁶ At the same time, innovation is affected by market failures that, in principle, may justify government support. This is the background to a range of government policies in support of private R&D (either directly or indirectly, through tax breaks) or the performance of R&D in the public sector. As always in connection with public intervention, however, there is a risk of supporting activities that would have taken place anyway or of support not being given where the return is highest but where political influence is greatest (or in areas that at the political level are seen as representing technologies of the future). Risks of wasteful spending are probably particularly large in EU countries given the aim of raising R&D spending to the arbitrary level of 3 per cent of GDP - with the implementation of this target apparently aiming for a uniform application across countries, including those where such a target makes no obvious sense.

In any case, and as mentioned above, innovation is positively affected by structural reforms in labour, product and financial markets. For such reforms, positive effects on innovation come on top of beneficial primary effects. In this sense, such reforms are a no-regrets way of boosting innovation. By contrast, government support for R&D will have budgetary costs and may in some cases crowd out privately funded R&D.

Another example of a general framework policy that may positively affect innovation is education policy. There is evidence that a greater supply of potential researchers increases R&D and patenting.¹⁷ But education is also more generally a driver of economic growth, with OECD research suggesting that over past decades and across countries it is a rule of thumb that GDP has gone up by some 4–6 per cent for every one-year increase in the average length of education of the population. This result underlines the importance of education even if there are declining returns on investment in this area too. Indeed, results from the OECD's PISA project suggest that, at least beyond certain thresholds, the gains from reducing class size or spending more are, at best, limited (OECD 2001).¹⁸ Looking across countries, while recognising that international comparisons are difficult in this field, there is a tendency for eastern and southern European countries to drag down average EU performance. At the same time, some of the northern European countries have education systems that, at least in terms of the share of young cohorts with a

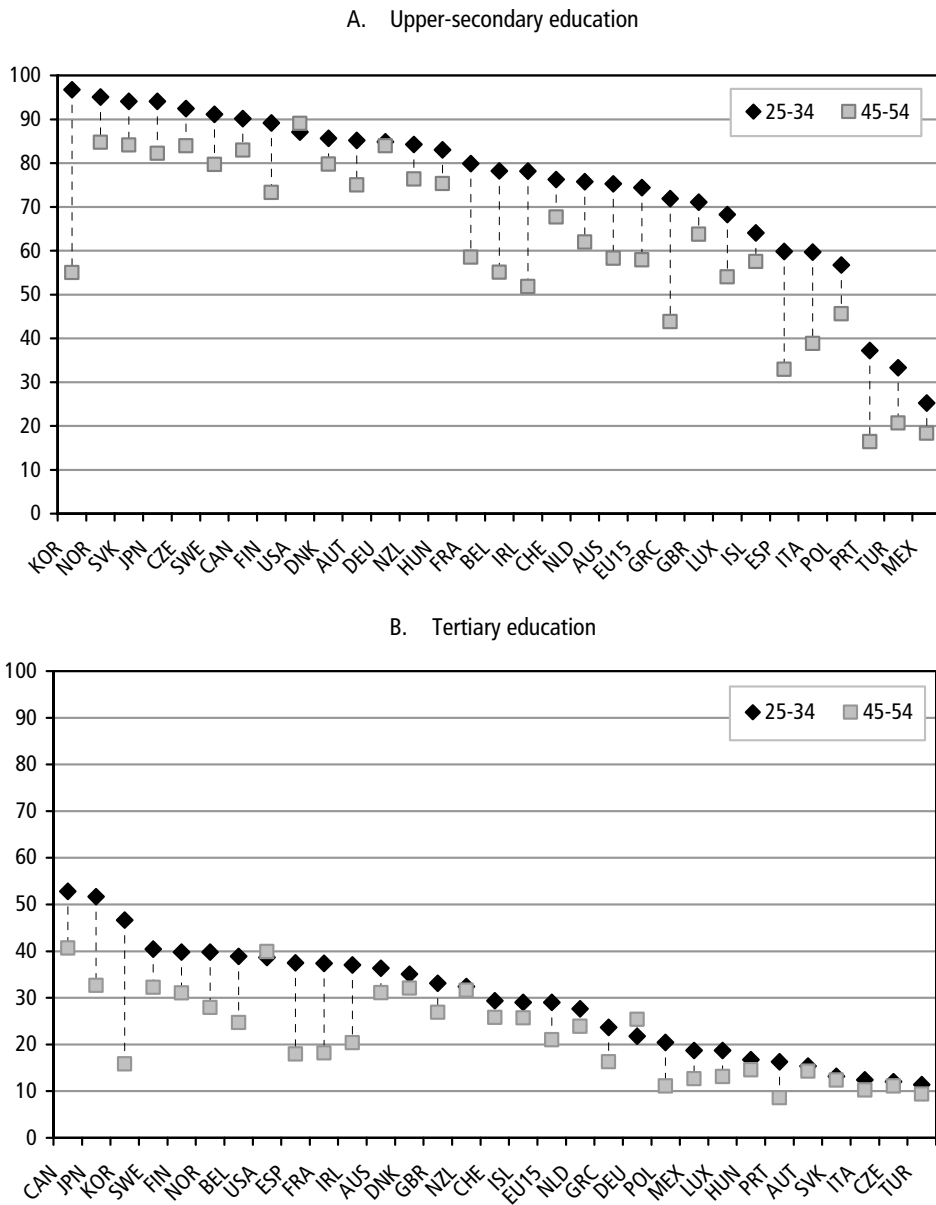
¹⁶ OECD research in the context of the Organisation's Growth Study found a strong empirical link between countries' R&D spending and their growth performance (OECD 2003).

¹⁷ This mechanism seems to work, at least in part, via the depressing effect of an increased supply of researchers on their real wages and thereby firms' cost of doing research (Jaumotte & Pain 2005a).

¹⁸ See also the discussion by de la Fuente (2006).

particular level of education, perform at a level that is similar to those of major non-EU OECD countries (Figure 8).

Figure 8 Educational attainment, 2003.



Source: OECD Education at a Glance, 2005.

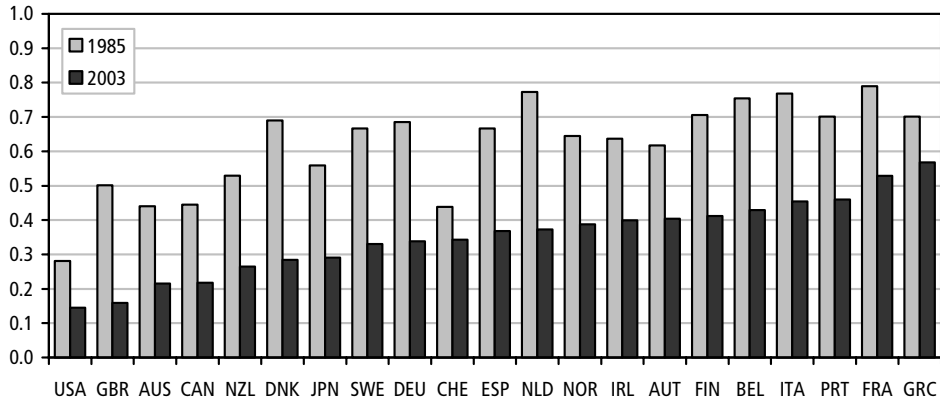
4 WHY IS IT SO DIFFICULT TO REFORM STRUCTURAL POLICIES?

The shortcomings in performance and policy settings identified above are somewhat unsurprising. Progress in policy analysis over the past decade has not so much thrown up new directions for policy as it has reinforced pre-existing orientations. But if the problems and their policy implications have been largely understood for many years, the question arises as to why progress in structural reform has not been more pronounced. To some extent, it is probably in the nature of structural reform that it is an uphill battle. There will almost always be losers and the losers tend to be easy to identify, to suffer significant losses and to do so in the early phases of structural reform. By contrast, the gains from structural reform usually emerge only after some time and are usually spread thinly over broad groups, which are often not very well organised. In addition, over and above the hindrances posed by groups who defend their rents, structural reform may sometimes create legitimate concerns about their social implications (though such concerns are also often a pretext for trying to defend rents).

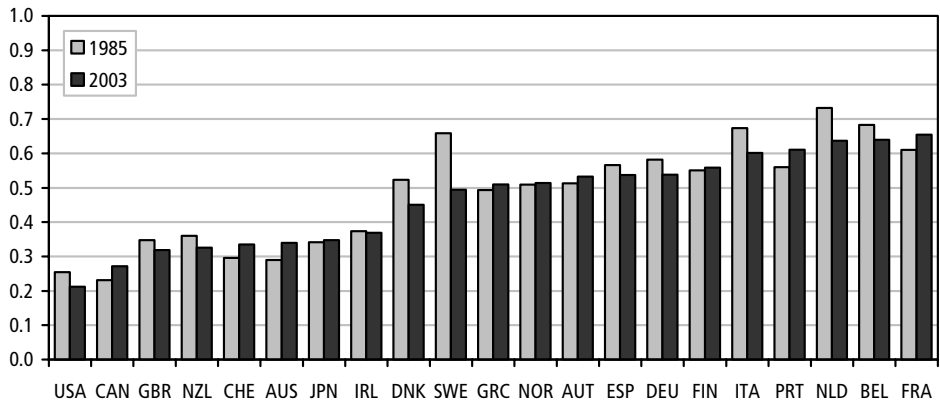
Set against this background, the progress in structural reform may not be so disappointing. However, it has also been rather heterogeneous. Based on available policy indicators with a (long) time dimension, together with admittedly rough and ready procedures for weighing these together with synthetic indicators of labour and product market policies, it appears that progress has been much better in liberalising product markets than in reforming labour markets (Figure 9). In addition, progress appears to differ across countries, with some of the (Latin European) countries pursuing relatively interventionist policies two decades ago still being more interventionist than other countries (outside Europe and in northern Europe).

Figure 9 Extent of intervention in product and labour markets, 1985 and 2003¹. Synthetic indicators of product and labour market policies.

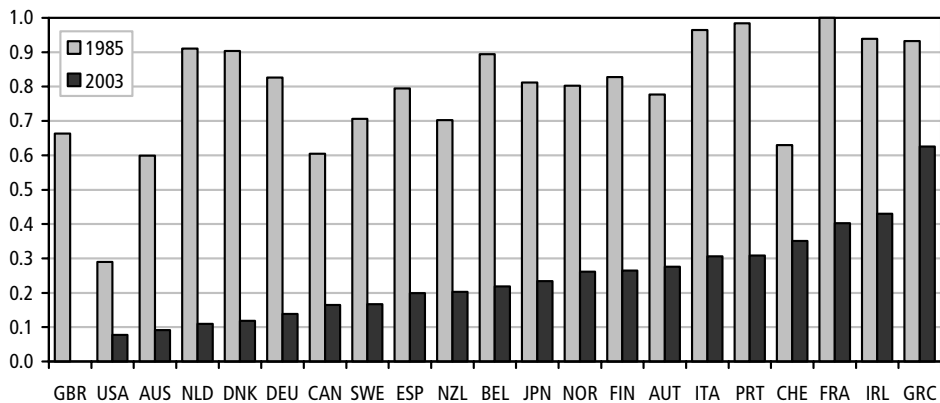
A. Product and labour market interventions



B. Labour market interventions



C. Product market interventions



¹ All indicators are normalised ranging from 0 to 1, where 1 indicates the highest degree of intervention. The synthetic indicators together weigh a range of indicators for individual policy settings in labour (job protection, unemployment benefits, tax wedges, retirement incentives) and product (regulation in rail transport, road transport, airlines, gas, electricity, telecoms, postal sectors) markets.

Based on the varied reform record across countries and over time, recent OECD analysis has empirically examined the process of structural reform.¹⁹ This strand of work is still in its infancy but the hope is that it will help to identify conditions that facilitate structural reform and that can be influenced by policy. Two issues in particular have come to the fore in this regard:

- The first is the extent to which macroeconomic policies may allow for the accommodation of the effects of structural policies. The background is the fear that some structural reforms, in particular liberalisation in the labour market, may have negative effects on economic activity in the short term. Hence, where fiscal and monetary policies have the scope to respond to and counteract such a weakness it may be easier to get through with structural reform. Indeed, there is empirical support for the notion that a comfortable fiscal position leads to more structural reform and more limited support for the notion that the pursuit of a domestic monetary anchor has the same effect. In current policy terms, the upshot is that efforts to consolidate fiscal policy may eventually bring an added benefit if they allow more structural reform.
- The second issue relates to the interactions between structural reforms in different fields and the possibilities of using the appropriate sequencing to make greater progress overall. As an empirical regularity, structural reforms in domestic product markets tend to be preceded by at-the-border reforms while labour market reforms follow at the end. There are a number of arguments as to why this pattern may be more than a coincidence. In particular, greater openness to foreign competition may lead to more pressure to abolish domestic regulatory constraints than inflate costs and more competition in product markets may make it more difficult to uphold interventions in labour markets. Whether such interlinkages between reforms in different areas can be used to enhance overall structural reform is more unclear, however. Such a strategic approach to structural reform may be too "clever" to work. Nonetheless, at the current juncture, it may introduce an additional argument in favour of overcoming international differences so as to allow a resumption of the Doha Round negotiations with the aim of reaching an ambitious conclusion.

An additional issue relates to the role of institutions. Both supranational and national institutions may play a role:

- There is empirical evidence to suggest that membership of the European Union as well as multilateral trade liberalisations have acted as spurs to structural reform. This raises the question of whether international agreement involving mutual obligations can be used as an instrument to enhance structural reform. For example, the internal market programme has been very successful in this regard. However, in recent years, the

¹⁹ See Høj et al. (2006). Related work includes Duval and Elmeskov (2005) and IMF (2004).

climate has not been very favourable towards such co-ordinated approaches.

- Some countries have generated momentum for structural reform with independent - and therefore possibly more credible - institutions analysing the costs of structural impediments and the consequences of reform. This can take the form both of *ad hoc* commissions dealing with individual issues and more permanent bodies covering a range of issues.²⁰

5 CONCLUSIONS

This paper has argued that the European focus on international competitiveness may be misplaced and that economic growth might be a more appropriate focus for structural policy. As regards growth and levels of real incomes, EU performance varies across countries, highlighting the fact that there is no single EU "story" of disappointing performance and policy failures. On the whole, differences in performance match differences in structural policy settings, although macroeconomic policies obviously also play an important role. The structural policy shortcomings in the various countries are largely well-known. However, this well-established diagnosis has not always been followed by a decisive cure in the form of structural reform. This fact has led to a renewed interest in the political economy of structural reform but research in this area is not yet sufficiently conclusive to permit strong conclusions.

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DYNAMIC EFFECTS OF EUROPEAN SERVICES LIBERALISATION: MORE TO BE GAINED

Henk Kox and Arjan Lejour¹

Summary

Europe's market for services is fragmented by many regulatory barriers. The Services Directive proposed by the European Commission aims to integrate national services markets by lowering these barriers. Several studies indicate that bilateral trade and foreign direct investment in services could be boosted substantially. GDP and consumption could increase by 0.5% to about 1% on average in Europe. The effects for the Member States will vary depending on the size of the barriers in their services markets and specialisation. These results take account of scale effects, and forward and backward linkages in the economy, but ignore the effects of more competition on productivity and innovation in the long term. This paper assesses the channels through which an integrated European services market may generate these dynamic gains. Improved market access will stimulate competitive selection and productivity growth. Through trade and investment, knowledge spillovers will increase and innovation will be fostered. These channels are illustrated using some of the scarce quantitative evidence available.

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1 INTRODUCTION

The EC Treaty mentions 'the freedom to provide services within the Community' (art. 49) as one of its main objectives. Its realisation is still a far cry from present-day practice. Twenty years ago the Single Market Programme (SMP) was launched, intended to effectuate the free circulation of goods, services, capital and labour in an integrated European market. The services sector now accounts for almost 70 per cent of European GDP and employment. But until 2004 it was kept in the waiting room for implementation of the SMP, and European services markets – including financial markets – remain highly fragmented. The European Commission then launched its proposals for a Directive on Services in the Internal Market (EC 2004). The topic sparked a remarkably intensive political debate in many of the 'old' EU countries. Unfortunately, the SMP for services often appeared to be regarded as a zero-sum game, whereby countries would either win or lose. The rejection of the Commission proposals by the European Council, in March 2005, was a painful setback for the SMP process. A contributory factor may have been that the proposed Services Directive and the accession of ten new Member States approximately coincided, giving rise to labour immigration fears. In 2006, a political compromise was reached on a 'light' version of the original Services Directive proposals.

The amended version of the Services Directive is to be implemented from 2010 onwards (EC 2006). 2010 is also the benchmark year for the Lisbon targets, formulated to strengthen the competitiveness, productivity and innovation performance of the European economy. The Sapir Report (Sapir et al. 2004) singled out the extension of SMP to services as a top priority for raising the EU's growth performance and international competitiveness. Labour productivity growth in the European services sector decreased in the 1990s relative to the 1980s, and even more so in comparison with the USA (European Central Bank 2006). O'Mahony et al. (2003) found that one of the main causes of the relative productivity slowdown in Europe compared to the United States is that European ICT-using services, such as wholesale and retail, have slower productivity growth than comparable sectors in the USA.

The question is whether an open market for services in Europe could foster competition and productivity growth such that the productivity gap with the US was diminished. This paper focuses on the relationship between services market liberalisation, innovation and competitiveness. We single out the channels through which more liberalised and intensive intra-European services trade might bolster productivity and innovation in the European economy. Up to now, most empirical studies – including our own – have quantified the static effects of services liberalisation, i.e. the shift effects that may occur as a result of a more

integrated EU services market. Even more important may be the dynamic effects of liberalisation, because these may be a sustainable source of future productivity growth and innovation. This contribution is based on recent theoretical insights from trade theory, innovation theory, and on recent empirical findings on the European services economy.

The structure of this chapter is as follows. Section 2 presents some key statistics on the European services market. It also briefly discusses the regulatory obstacles that up to now have constituted barriers to a more intensive intra-European services trade. Section 3 presents the main estimates of the static gains from services liberalisation. In Section 4, we assess the channels through which an integrated European services market in the future may generate dynamic welfare benefits for the Member States through more productivity and innovation. Valuable insights are derived from recent theory on trade with heterogeneous firms, and from the literature on competition and innovation. We present some of the still scarce quantitative evidence in this area. Section 5 draws conclusions and singles out some policies that may support the attainment of dynamic welfare gains from more liberal services trade.

2 A SINGLE EUROPEAN MARKET FOR SERVICES?

Commercial services represent some two-thirds of European economies and about 70 per cent of total employment. Despite headlines on globalisation and offshoring of services jobs, services markets are still somewhat closed to foreign competition. Trade in commercial services is at most one-fifth of total world trade in goods and services. In value terms, world services exports now amount to 2.4 trillion US dollars (WTO 2006). In 2005, world exports of commercial services rose by 11 per cent, while goods (merchandise) exports rose by 13 per cent. The gap between both has been widening in recent years.

The EU's services exports have grown faster than the average for all developed countries. This holds for the EU's external services exports and for exports in the internal EU services market. Table 1 shows that the shares of both in total OECD services exports have grown in recent years. This does not hold for the EU's share in total royalty and licence-fee receipts, used as a measure for exports of specific technical and high-valued-added services. Here, the EU seems to be losing ground. Figure 1 shows the composition of intra-EU services trade. Travel is the largest category in services exports, before transport and business services. External and intra-EU services trade have a comparable sectoral composition.

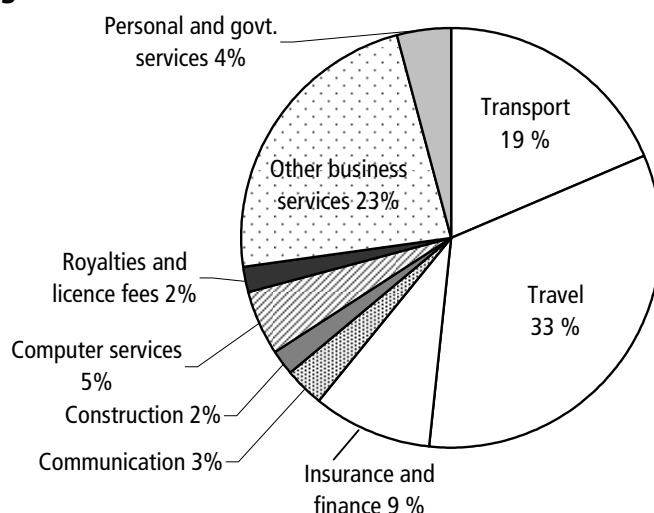
Table 1 The position of the internal EU market in the system of services trade between developed countries, 1999–2003.

	EU services exports as % of OECD services exports		Intra-EU services exports as % of total OECD services exports	
	1999	2003	1999	2003
Total services	57	64	38	47
of which:				
Royalties for technical services	31	28 ^{a)}	19	14 ^{a)}
Other business services	56	64 ^{a)}	32	42 ^{a)}
Commercial services without travel and transport	53	54 ^{a)}	35	42 ^{a)}

Note: a) 2002 data.

Source: CPB consistent bilateral services trade matrices, developed on the basis of OECD data and the GTAP method for consistency of bilateral trade flows. Annual data in current US dollars. EU data have been calculated for EU25.

Figure 1 Share of services sectors in intra-EU services trade, 2003.



Source: CPB consistent bilateral services trade matrices. The shaded components are most affected by the European Commission's amended Services Directive (2006).

Compared to manufacturing and agriculture, services sectors are less open to international trade (details in Kox et al. 2004). This difference with the goods-producing sectors has two basic causes.

1. Services production and delivery often needs the proximity of producer and consumer, obliging the services supplier to move abroad.² This makes cross-border trade relatively difficult compared to manufacturing where, normally, only the product is shipped abroad. If firms are large enough, they can

² In the case of tourism and travel, the consumers move abroad.

choose between exporting and setting up a local establishment in the destination country. The share of foreign affiliates in services value added ranges from 7% in Denmark to nearly 40% in Ireland (OECD 2005). In the larger EU countries it is about 10% and in the accession countries it is much higher. Although recent FDI flows in services exceed those in manufacturing, the production share of foreign subsidiaries in manufacturing is still higher than in services.

2. Regulation-caused non-tariff barriers form a further cause of the limited international integration of services markets. The European Commission (EC 2002a) identified a wide array of domestic measures that hamper services firms in supplying a foreign market through cross-border trade or foreign establishments. Regulations for service suppliers, for foreign investors and for the service products themselves are often primarily established for domestic purposes without taking account of the interests of foreign service providers.

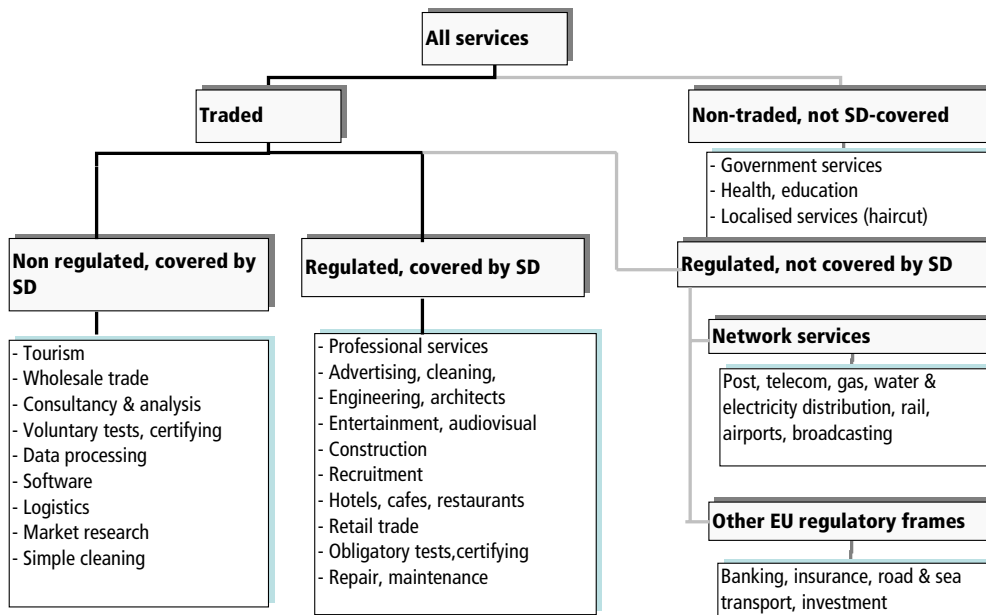
The fact that a national services market *is* regulated need not in itself present a barrier to international services trade.³ This can be demonstrated with a little thought experiment. Suppose that all countries have the same type of regulation, for instance, a qualification requirement for providers producing a particular service product. Since qualification costs are mainly fixed costs, it would cost an exporting firm a one-off effort to comply with the qualification criteria. Having incurred these fixed qualification costs, the firm would even have an incentive to export more. By enlarging its production through exports into other countries, the firm could reap economies of scale. However, such a uniform system of regulation for services markets does not exist. Countries often have little interest in each other's regulatory regimes or have little confidence in their quality. Hence, they are reluctant to adapt their own regimes where necessary to facilitate cross-border activities. If each country has different regulations in place and does not recognise qualifications in a foreign firm's home country, then the national qualification costs become cumulative fixed costs. Because the costs are country-specific, they are in fact sunk market-entry costs for a country market. This hampers exports and investment.

The Services Directive introduced by the European Commission intends to make headway with the Single European Market for Services, by reducing the negative impact of policy heterogeneity, by ruling out national measures that explicitly or implicitly discriminate against foreign service supplies, and by calling for measures facilitating trade and investment in services. Figure 2 tentatively shows the sectoral coverage of the Services Directive. The regulated services

³ This is true despite the fact that regulations may have a negative bearing on competition and domestic market entry. The European Central Bank (2006) found that service prices rose more in those EU countries which had stricter regulations (barriers to entrepreneurship).

sectors are the ones which are most affected by the directive. Combining the information of figures 1 and 2, we may conclude that from a quantitative perspective the SD first and foremost covers intra-European trade in business-to-business services. These services correspond in particular to what Baldwin (2006) calls the 'second wave of unbundling'.

Figure 2 Sectoral coverage of Services Directive (SD), as amended in 2006.



3 STATIC EFFECTS OF EU SERVICES MARKET LIBERALISATION

Until recently, very few studies were available that quantified the potential impact of lower service-trade barriers in the EU internal market. An early study by Buigues et al. (1990) simulated the strong effects of the European Single Market programme, but paid barely any attention to services. With its ambitious and far-reaching 2004 proposals for a Services Directive (EC 2004), the European Commission wishes to accomplish a European Single Market for a large part of the services sector. Its proposals would eliminate important obstacles to the freedom of establishment and the free movement of services, while strengthening mutual trust between the EU countries with respect to their regulatory regimes. Using the 2004 Commission proposals for a Services Directive (SD) as a point of departure, several studies have quantified the

potential effects of the proposed measures. Here we confine ourselves to summarising their main results.

Kox and Lejour (2005, 2006) approach the issue by quantifying the sunk market-entry costs of country-specific regulations, accounting for differences in product-market regulations between each EU country pair.⁴ The degree of bilateral policy heterogeneity between countries is used as a proxy for sunk export costs; it may differ between each pair of countries. Applied in gravity equations for bilateral services trade in the EU, regulatory heterogeneity in policy areas like competition and trade regulation appears to have a robustly negative trade impact. At a detailed level, they subsequently estimate the extent to which the Commission's SD would affect bilateral policy heterogeneity. The results are combined to simulate the effects of the SD:

- trade in commercial services (excluding transport and travel) could increase by 30 to 62 per cent;
- intra-EU FDI in services could increase by 18 to 36 per cent.

In order to estimate the macro-economic importance of the SD, De Bruijn et al. (2006) have fed the estimated trade impacts (not the FDI effects) into a large CGE model, WorldScan, which distinguishes most EU countries:

- average European consumption could increase by between 0.5 and 1.2 per cent;
- the mutual-recognition element in the Services Directive, i.e. the country-of-origin principle (or CoOP in short) accounts for about one-third of the effects.

If the effects of more FDI are also added (derived from Lejour et al. 2006) consumption could increase by 0.5 to 1.5 per cent. Frame 1 explains why these macro-economic effects seem relatively modest. However, expressed in terms of 2004 European GDP, the measures would add 35 to 95 billion euros. This still ignores the productivity and innovation impacts of more trade and FDI.

Frame 1 Placing services liberalisation in the size perspective of the EU economy

The Services Directive may increase the intra-EU volume of trade in *other commercial services* by 30 to 62 per cent (De Bruijn et al. 2006). This is a very strong increase for the services sectors involved. But a back-of-an-envelope calculation shows that the effect at a macroeconomic level is much more modest. Intra-EU trade in *other commercial services* represents only about seven per cent of total EU trade. The 2004 Services Directive would thus increase total EU trade by some 2 to 5 per cent. Detailed simulation results at country level support this intuition. Given the small effects on total trade, it is not surprising that the static GDP effects are modest, on average ranging from 0.3 per cent to 0.7 per cent in the EU.

⁴ Based on country-wise data on some 200 different items in product-market regulations from the OECD International Regulation database. The indicator is decomposed into 5 different areas of product-market regulation.

Breuss and Badinger (2005) use CPB's quantitative estimates of the SD's services-trade effects as input for their research. They estimate how much the additional trade will erode profit mark-ups in EU services markets. They find that more entry does not directly affect productivity, but for the sample of service industries covered by SD, they find significant effects of trade in terms of more competition. And the latter has significant positive impacts on productivity, employment and investment in EU services.

Copenhagen Economics (2005a, 2005b) analyses the welfare effects of the EU proposals with a CGE model which also considers the FDI effects. These conclude that overall consumption in the European Union would increase by 0.6 per cent. This estimate corresponds to the minimum estimate by De Bruijn et al. (2006). According to their analysis, the CoOP contributes only about 10 per cent to the total welfare effects (including the FDI-induced effects). This is not surprising, since their concept of non-tariff barriers in services is more limited: they look at domestic regulation within a country, but do not consider the impacts of inter-country differences in the form and content of the regulations.

Vogt (2005) considers the estimates of Copenhagen Economics conservative, because the dynamic effects of extra competition on productivity and innovation are left unconsidered. However, it is fair to say that this criticism also holds for the CPB studies. Both studies concentrate on the static (one-off) effects of opening up European services markets: economies of scale and efficiency gains through inter-sector supply linkages.

The estimates of the static gains of opening up the services market are comparable to the effects of the SMP in 1992. In 2002, the European Commission (EC 2002b) estimated that GDP in the EU was around 1.4% higher due to SMP. The GDP increase mostly derived from increased allocative efficiency in manufacturing. Moreover the liberalisation of network industries should increase GDP by another 0.4%. The dynamic effects and integration of services sectors are not estimated.

4 DYNAMIC EFFECTS OF LIBERALISATION

What can we say about the dynamic welfare gains of more intra-European trade and FDI in services, i.e. their impact on productivity growth and innovation, the basic sources of future economic growth? These dynamic effects are certainly more difficult to quantify than the static effects. The main channels for long-term dynamic impacts are: (a) more competitive selection; (b) knowledge spillovers; and (c) market entry as an incentive for innovation. We discuss each of these channels and present the relevant empirical evidence.

4.1 Competitive selection

Theory and empirics on the relationship between (foreign) competition, innovation and productivity growth are still in their early stages. Some clues to the dynamic impact of SD on productivity and growth can be found in the literature on the relationship between trade openness and income growth. The empirical relationship between openness and income is subject to debate.⁵ Some influential papers estimate that 1 percentage point of additional trade openness causes income to grow by 0.6 per cent in the short term, and 1.1 per cent when long-term effects are also counted (Frankel & Rose 2002). Applying the latter estimate, the 2004 Services Directive could increase European GDP by 2 to 5 per cent. These long-run effects incorporate the effects of extra competition, productivity spillovers, extra innovation and productivity growth. Nicoletti and Scarpetta (2003) estimate that entry liberalisation in services could boost productivity growth by 0.1 to 0.2 per cent in some European countries. Less product market regulation may stimulate firm entry, investment and the growth of firms.

Aghion and Griffith (2005) attempt to provide a unified and coherent account of the effects that competition and deregulated entry would have on economic growth.⁶ They sketch two opposing forces at work. One factor is that more competition may reduce the monopoly rents that reward successful innovators; too much competition would then be bad for innovation and growth. The other force sees competition generating incentives for firms to work more efficiently, and thus generate – as is corroborated by some empirical studies – higher productivity growth. Aghion and Griffith propose a distinction between 'competition for markets' (capturing market entry and the ability to escape current markets by creating new market opportunities) from 'competition in markets' (traditional cost competition in product markets). Following increased or imminent competitive entry *in* their market, incumbent firms will innovate again to escape competition. The incentive to innovate for new firms may decrease, however, because the potential rewards from successful innovation become smaller.

This insight can be applied to European services markets. The foreign firms that enter the domestic markets of other EU Member States are not new firms, but incumbents in their home market. Due to liberalisation, these incumbents do not leave their home markets but create new, additional market opportunities in other countries. The overall effect is that in all EU countries cost competition

⁵ Cf. Feenstra (2003: Ch. 10) for a review.

⁶ Earlier work by Aghion et al. (2003) includes some empirical support derived from manufacturing industries, but overall the empirics on the subject remain limited. For manufacturing, more and better statistical data on competition, innovation and productivity are available than for services. More European support for this type of research seems warranted, therefore.

between incumbents increases in existing product markets.⁷ This will raise the average productivity level. The incumbent firms will react by innovating in new product markets or by carving out niche markets. More foreign presence means that buyers have greater choice. However, the entry hurdle and innovation incentive for *new* domestic firms may become higher. Accompanying policies may be required to address this potential problem.

Griffith et al. (2006) analyse the impact that the Single Market Programme had on competition and subsequently innovation and productivity growth. They find that the programme had effects that are statistically and economically significant. In manufacturing, competition increased, as measured by profit mark-ups. This stimulated productivity growth and also fostered investment in R&D by existing firms. For services, they find that more competition is accompanied by more productivity growth, but due to statistical deficiencies they cannot establish the causality direction between the two.

Frame 2 Fixed-cost impact of exports and local establishment in business services.

A survey study commissioned by the European Commission provides some information on the magnitude of fixed market-entry costs (CSES 2001). Among a large number of business-services firms in the EU, 78 per cent of the firms mention that setup costs of selling services in other EU states are "*significant*" or "*very significant*" trading barriers. Of those firms that were able to estimate the size of the setup costs, 30 per cent estimated that these are in the order of 3–6 months sales proceeds, and 43 per cent estimated that such costs are more than 6 months of sales proceeds. The setup-cost effects are largest for small and medium-sized enterprises (SME): "*Evidence collected from SMEs and SME-supporting organisations suggests that many SMEs back off after initial inquiries about administrative requirements and procedures because they feel they do not have the necessary resources to deal with the current complexity*".

Scarpetta et al. (2002) conclude that stringent regulatory settings in the product market have a negative bearing on productivity and market access. The greatest impact of national product market regulations is on small and medium-sized enterprises. Only firms of sufficient size are able to overcome the fixed market-entry costs caused by national regulation (cf. Frame 2). Because of the country-specific character of most regulations, regulation-based qualification costs for individual firms are sunk costs, specific for each export market. In a situation with fragmented services markets and high sunk export costs, only the largest or the most productive services firms can be expected to export.

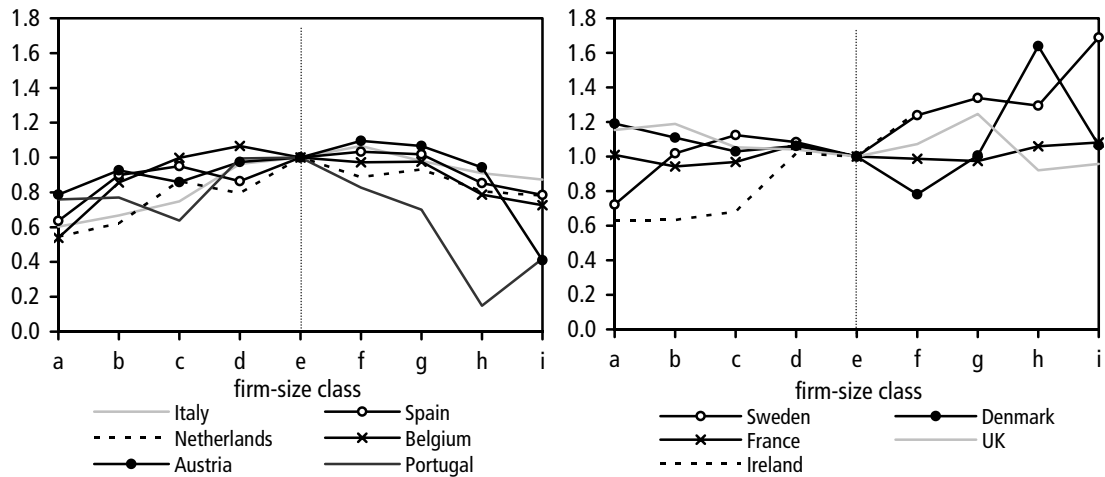
⁷ The extent to which competition will increase depends partly on the substitution between exports and FDI. Recent theory predicts that exports will increase more than FDI when liberalisation causes fixed market-entry costs to fall. Evidence from manufacturing industry supports this (Helpman et al. 2004).

The newest trade theory explicitly models and explains the impact of trade liberalisation in the case of heterogeneous firms (e.g. Melitz 2003, Baldwin 2005, Yeaple 2005, Helpman et al. 2006). These models explain a well-documented fact, namely that only the most productive firms are active in exports. They put particular emphasis on the role of sunk export costs. They also show that liberalisation causes exports of firms in all size classes to increase, but that firms newly embarking on exports are smaller than before. If liberalisation (or mutual recognition) lowers entry costs, more and smaller firms will be able to export profitably. In particular, firms among the ranks of medium-sized services firms will start exporting. A further finding is that the average productivity level will increase due to liberalisation, because relatively productive foreign firms gain market share at the expense of domestic firms that are less efficient.

These findings may have a direct relevance on intra-European services trade. Examining the relationship between firm size and labour productivity among a very large sample of European business-services firms, Kox et al. (2007) find that medium-sized firms tend to have higher than average labour productivity. The left panel of Figure 3 shows a hump-shaped relationship (inverted-U) between size and productivity in six out of eleven EU countries.⁸ While sunk export costs resulting from country-specific regulation requirements give large firms an advantage in intra-European exports, Figure 3 shows that these are not necessarily the most productive ones. If liberalisation lowers regulation-caused export costs, it is likely to lead to more exports by medium-sized firms. This may have a positive impact on overall productivity in services. Expanding the foreign market opportunities of SMEs may thus generate welfare-enhancing scale and productivity effects. Empirical research finds firms that newly enter a market (like the newly exporting SME firms) are more likely than incumbent firms to pass on productivity advantages through lower prices (Foster et al. 2005).

⁸ The right panel moreover indicates that in two more Member States (Sweden and Ireland), average labour productivity increases with size.

Figure 3 Relative labour productivity in business services by size class, 11 EU countries, 1999 (Benchmark: productivity in size class of 50–99 employees).



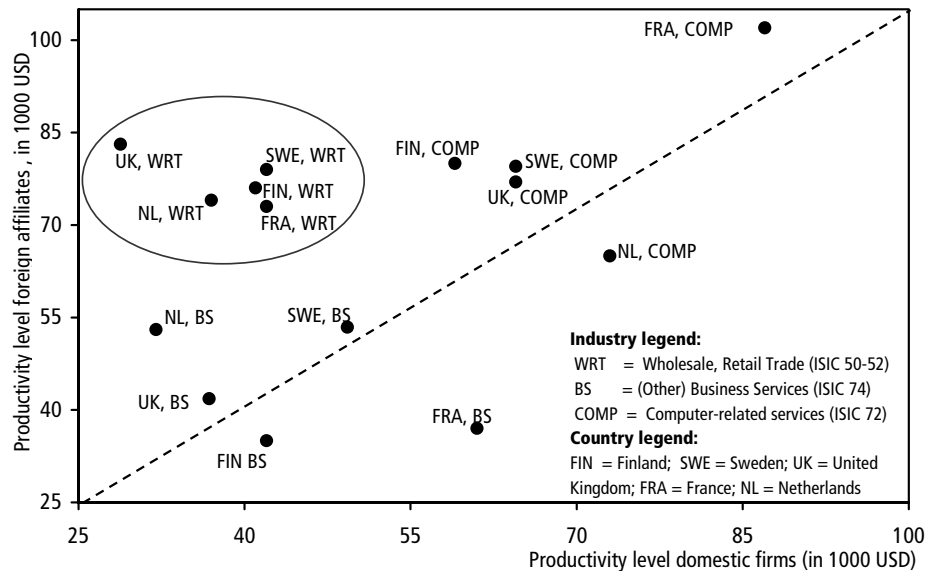
Note: labour productivity is measured as value added (in 1000 Euros) per employed person. Legends for firm-size classes, based on employed persons per firm: a) 1–4; b) 5–9; c) 10–19; d) 20–49; e) 50–99; f) 100–249; g) 250–499; h) 500–999; and i) over 1000 employed persons. The value added of the size class with 50–99 employed persons is the benchmark (=1).

Data source: Eurostat, New Cronos, Figure from Kox et al. (2007).

We estimated that the EU Services Directive could increase intra-EU FDI in services by 20 to 35 per cent (Kox & Lejour 2006). This will also raise average productivity and GDP growth. Several studies show that establishments of multinational services firms are often more productive than domestic services firms.⁹ In Figure 4.2 we specifically look at the productivity gap in sectors that are central to the Services Directive, namely business services, computer-related services and the trade/distribution sector. The oval shape in Figure 4 indicates that the productivity advantage of foreign affiliates is largest in the distribution sector, often still strongly dominated by domestic firms. Note that O'Mahony et al. (2003) found this sector to account for a large part of the EU-USA gap in productivity growth. Due to the Services Directive, foreign affiliates will gain market share at the expense of those domestic firms that are less productive, which will lift average productivity.

⁹ E.g. Griffith et al. (2004), Hoekman and Javorcik (2005), OECD (2005) shows that foreign affiliates in services are on average more (labour) productive than the average firm in the host country.

Figure 4 Productivity gap between domestic firms and foreign affiliates in selected services sectors, 5 EU countries, 1997–1998.



Note: If the dots are above the line, foreign affiliates have a higher labour productivity than domestic firms in that industry. Productivity is measured as value added per employed person.

Source: calculated from OECD STAN and OECD FATS databases.

4.2 Knowledge spillovers

Deeper services market integration facilitates knowledge spillovers. International trade contacts stimulate the exchange of ideas and knowledge. As was noted before, business services constitute the main sector affected by the EU Services Directive. This is a services sector that plays a crucial role in both knowledge diffusion and innovation (Rubalcaba et al. 2007). An IMF study by Guerrieri et al. (2005) stresses the important role of business services in knowledge accumulation and growth. They find a strong statistical relationship between international knowledge spillovers – as measured by bilateral patent citations – and trade in knowledge-intensive business services. They use an econometric model that can accommodate the dynamic effects of service-trade liberalisation. Their simulations suggest that output growth could become about 1 per cent higher due to liberalisation over a period of ten years.

From a vast amount of literature, Hoekman and Javorcik (2005) infer that services providers could be important in transferring knowledge, and that trade and FDI could be important in services sectors as a source of knowledge. UNCTAD (2004) concludes that systematic evidence on the extent of transfer

and dissemination of knowledge, expertise and skills by services multinationals is limited. There is proof that these firms train their employees, and that consultancy firms improve management practices in client firms. However, the empirical literature has largely ignored the services sectors so far.

4.3 Market entry as an incentive for innovation

As mentioned before, several studies indicate that a tougher competitive selection process due to liberalisation could trigger services firms to innovate more rapidly, in order to distinguish themselves from competitors. So, apart from strengthening the spillovers of existing knowledge, liberalisation may also induce new, original innovations, thereby stimulating productivity growth *and* future welfare (Nickell 1996, Aghion et al. 2005). Innovation can be a way to escape competition for services firms if the post-innovation rents (with new market opportunities) exceed the pre-innovation rents (imminent erosion of profits due to strong market entry). However, the empirical evidence on the innovation effects of more market entry in services is still under-researched.

5 CONCLUSION AND POSSIBLE POLICY IMPLICATIONS

Services markets in Europe are fragmented and labour productivity performance is relatively weak. The available studies on the impact of the European Services Directive have shown that the measures will generate more intra-European trade in services, more foreign direct investment in services sectors, and lower service prices. As a consequence, consumption and income will increase, as may employment in Europe. These effects are static gains, in the sense that they represent a one-off shift in economic performance. Most such static gains will probably materialise in the medium term – say five to seven years after implementation.

These static gains are considerable in themselves. For the economic future of the EU it is even more important what the accomplishment of the Internal Market for Services implies for future welfare. What does the integration of the EU services markets mean for labour productivity growth, for innovation, and for the European capacity to adjust in a world where – with or without an Internal Services Market – manufacturing *and* services activities will increasingly be sourced globally rather than regionally or nationally? These dynamic effects have a potentially greater and longer-lasting impact on the European economy, although they will materialise less quickly than the static gains of service-market liberalisation.

The upshot of the available evidence that we reviewed in this paper is that the prime dynamic gains from services liberalisation will come from more new market entry by firms based in other EU countries. Improved market access will subsequently stimulate competitive selection and productivity growth. Competitive selection will lift average productivity, bolster the role of SME firms in exports, intensify knowledge spillovers and strengthen innovation by incumbent firms. Moreover, increased FDI in liberalised services markets will also increase average productivity. This can be expected to be beneficial for the number of available service varieties, for service quality, and for the price of services. Domestic firms will have more choice options with regard to their service providers. This also includes their freedom to choose cheaper foreign supply options. As a general result, the international competitiveness of non-service industries will be strengthened.¹⁰

The overall welfare gains will be positive for the EU, and accompany a reallocation process in which countries specialise in the products for which they have the greatest advantages. This is illustrated in Frame 5.1. Industry reallocations always imply some degree of 'local pain'. Those that stand to lose are domestic firms with low efficiency, and those that fail to innovate with respect to new market opportunities.

Frame 3 Industry reallocations between Member States due to Services Directive

According to the CPB study (De Bruijn et al. 2006), industry reallocation will follow after implementing the Services Directive. We conclude that the Member States in Central and Eastern Europe will see a relatively large increase in services imports, but will be more than compensated by a relatively large export in manufacturing products. Countries like Germany and the UK will lose ground in manufacturing value added, but gain in services exports. For a country like Poland it will be the other way around. Their domestic value added in *other commercial services* will diminishes due to more imports, because the country is not competitive enough in this area, but their gains will be in manufacturing where they have the largest comparative advantage. The total gains, both in value added and exports, are positive for all EU countries. This shows that an operation as complex as the Internal Market for Services cannot adequately be interpreted as a simple zero-sum game.

Lowering national regulatory differences between Member States means that the sunk export costs for individual services firms will fall. This will attract new layers, particularly of the more productive medium-sized firms, to embark on exporting to other EU Member States. An integrated market for services will benefit SMEs. The burden of red tape is also more onerous on SMEs than big

¹⁰ According to a study by the European Central Bank (2006): "a higher level of competition in the services sector would tend to support more efficient and flexible service markets, facilitate adjustment processes and increase the resilience of the euro area to economic shocks".

firms, because many of the related costs are fixed costs and therefore hardly related to firm size.

Even with the 2006 Services Directive, the Single Market Programme (SMP) for services is still far from accomplished. First, the directive covers only a fraction of services industries. European markets for financial services are still highly fragmented along national borders. Also, in network services (telecom, utilities, rail, airlines) and transport national markets are only partially integrated. Second, the present Services Directive can only be considered as a first step for those services sectors covered by the directive.

The EU can reduce the costs that internationally operating firms incur due to national policy differences in the EU through two mechanisms: harmonisation or mutual recognition. In the latter case, foreign firms would be allowed to operate under the regulatory standards of their home country. Harmonisation is a very long and complex process, and may not even be efficient because countries may have different market preconditions or different regulatory preferences. Wider application of the mutual-recognition principle may represent the most auspicious policy track. This approach was originally chosen by the European Commission in its 2004 proposals, with the country-of-origin principle as the fundamental instrument. In the amended 2006 version, this principle has been watered down to the vague and redundant formula (*'the freedom to provide services'*) already laid down in the EC Treaty. Many national exemptions are allowed, thus undermining transparency for individual services firms. At the time, given the heavy debate in some countries, this was perhaps the best feasible political compromise. Our studies suggest that from the perspective of the SMP, the watered-down Services Directive is just a first step that still leaves – so to speak – many 50 euro notes lying on the pavement to be picked up later. Further steps will fall within reach as soon as there is enough mutual trust and stability in the relationships between Member States, because this is essential to adopting the mutual recognition approach. Our results further suggest that trade and foreign direct investment in services could be boosted, if the level of regulation is also limited.

Meanwhile, more trade openness in European services markets will increase competition which may, in some services sectors, accompany the exit of the less efficient national services firms. Rather than putting a brake on this reallocation process, it may be useful to strengthen the role of accompanying policies that address and mollify the transitional costs of adapting domestic sectors to such side effects of liberalisation. Such policies may include areas such as social insurance against involuntary job losses, a bankruptcy law that enables more exit flexibility, and re-education (cf. Andersen 2006, Davidson et al. 2006). Another type of policy that may accompany services liberalisation concerns the incentive for innovation by new services firms. However, the entry hurdle and

innovation incentive for *new* domestic firms may become higher, while the failure rate and self-selection for small domestic firms increases. Although this effect will not be catastrophic, EU governments could opt for start-up premiums in order to compensate for the reduced start-up incentive for potential innovators. Finally, improved accessibility of venture capital for small and medium-sized firms may also work out to be beneficial in terms of the number of start-ups.

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THE LIBERALISATION OF NETWORK INDUSTRIES IN THE EUROPEAN UNION: WHERE DO WE COME FROM AND WHERE DO WE GO?

Damien Geradin¹

Summary

For the last two decades the European Commission has engaged in a major effort to liberalise network industries. Since network industries had been controlled by (State) monopolies, often for over a century, it was believed that opening up the network industries markets to competition would bring significant consumer benefits and enhance the competitiveness of the European Union. This effort essentially rested on three pillars. First, liberalisation directives had to remove the exclusive rights which were granted to incumbents. Second, these directives provided for the development of regulatory frameworks designed to facilitate the emergence of competition, as well as setting up regulatory authorities in charge of implementing such frameworks. Finally, the application of EC competition rules has made a significant contribution to the promotion of competition in network industries. The liberalisation effort pursued by the Commission is generally considered a success. Today, two sectors (air transport and electronic communications) are completely open to competition, while liberalisation is closely engaged in the other sectors (postal services, energy and rail transport). Some bottlenecks, however, remain and impede competition in a number of sectors. First, a serious problem arises from the inadequate implementation of liberalisation directives in some of the Member States. This is delaying the liberalisation process and creating a distortion of competition by forging regulatory asymmetries between Member States. Second, the absence of EU-wide regulatory authorities is negatively affecting the creation of truly integrated markets, since national authorities are poorly adapted to dealing with cross-border issues due to their scope of action generally being confined within their Member State borders. Third, the arrival of competition in network industries markets is often being impeded by the fact that incumbents tend to rely on their market power to prevent entry into the market. Finally, the creation of EU-wide markets in network industries is being negatively affected by various forms of economic patriotism, whereby Member States try to protect their incumbents. A hotly-debated issue is whether, as

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competition progressively arrives in a variety of markets, sector-specific regulation will be rolled-back, thereby leaving competition rules as the only instruments for controlling market power in network industries. It is argued that, while a deregulatory movement can already be observed in a number of sectors, some degree of sector-specific regulation is probably here to stay for two reasons. First, some network infrastructures (such as electricity transport systems) harbour natural monopoly features and thus need continued regulation. Second, because competitive markets are unlikely to provide for universal service, universal service obligations will need to be maintained.

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1 INTRODUCTION

Over the last twenty years, governments in many parts of the world have engaged in the liberalisation of network industries (telecommunications, postal services, energy and transport).² This liberalisation process, which was first observed in the United States in the late 1970s and in the United Kingdom in the early 1980s, became a central preoccupation of the European Commission at the end of the 1980s. Since then, the European Commission has initiated liberalisation reforms in a range of sectors with some success. Sectors, such as telecommunications and air transport, are now fully liberalised and are becoming increasingly competitive. Others sectors, such as energy (gas and electricity), postal services and rail transport are not yet fully liberalised, but the market opening dynamic is now well underway. The liberalisation process has not been without difficulties, however, and many challenges lie ahead. Against this background, the objective of this paper is to give a brief overview of the liberalisation process and the results it has achieved, as well as to address some of the main challenges remaining.

This paper is organised as follows. Part II explains why, for almost a century, firms involved in network industries have generally taken the form of State monopolies, as well as why this organisational model began to be questioned in the late 1970s and was thus progressively replaced by a model based on opening up markets, and competition. Part III explains that the successful completion of the liberalisation process rests on three pillars: the removal of exclusive rights, the adoption of a regulatory framework and the establishment of independent regulatory authorities. Part IV analyses the current state of liberalisation in the different network industries. Part V reviews the various bottlenecks, which still prevent competition in some markets. Part VI discusses the issue of whether we should be able to do away with sector-specific regulation in one stage. Finally, Part VII contains a short conclusion and some proposals for moving ahead.

² See, for instance, D. Newbery, *Privatization, Restructuring, and Regulation of Network Utilities*, MIT Press, 2000. D. Geradin, *The Liberalization of State Monopolies in the European Union and Beyond*, Kluwer Law International, 2000.

2 THE TRANSITION FROM PUBLIC MONOPOLIES TO COMPETITIVE MARKETS

For almost a century, network industries were organised as State monopolies. There were several reasons for this.

First, there was a belief that such industries were natural monopolies, i.e. that there was only space for one undertaking in the market.³ This view was based on the observation that sectors, such as telecommunications and energy, were subject to large economies of scale and that network infrastructures were very hard or even impossible to duplicate. Exclusive rights thus represented a legal translation of the perceived economic model governing network industries.

Second, monopolies were often granted in return for the monopolist providing universal service, often referred to as "public services" or "services of general economic interest".⁴ There was thus a kind of "regulatory contract" between governments and large utilities. The latter would provide their services throughout the territory (including loss-making areas), to all customers (including unprofitable ones), with a given level of quality and without discontinuity, thereby ensuring social and geographic cohesion. The provision of universal service would certainly have a cost, but the monopoly granted to these firms would allow them to cross-subsidise profitable services with loss-making ones and still make a profit.

Third, because of the importance of these industries from several viewpoints, governments believed it was important to consolidate them in one firm, which they controlled. Network industries were indeed of key importance at several levels: (i) strategic (need to control basic infrastructures in case of war or major crisis); (ii) economic (these industries employ millions of workers and represent a significant part of GDP); and (iii) political (State monopolies were often part of the administration or had close links with public authorities).

In the late 1970s, however, the basic tenets of the monopoly model began to be challenged by economists, lawyers, policy-makers, industrialists and consumer organisations.

First, economists started to argue that, while some market segments in network industries (e.g. the local loop in telecommunications and the electricity transport

³ W. Sharkey, *The Theory of Natural Monopoly*, Cambridge University Press, 1982.

⁴ On the concept of services of general economic interest in EC law, see the Communications of the Commission on services of general interest, COM(1996) 443 and COM(2000) 580, O.J. 1996, C 281 and O.J. 2001, O.J. C 17.

network) certainly had natural monopoly features, others were contestable.⁵ For instance, while the local loop (the “last mile” of copper wires) could hardly be duplicated by new telecommunications entrants and would thus, at least for some years, remain monopolised by the incumbent, a number of other market segments, such as the provision of services, were potentially competitive. Such segments should thus be freed of exclusive rights in order to allow competition.

Similarly, the provision of universal service did not necessarily require the maintenance of public monopolies cross-subsidising unprofitable market segments with profitable ones. Cross-subsidisation was an imprecise funding mechanism, which had also distorted competition. Other methods of financing, such as targeted subsidies from general taxation or the creation of compensation funds could be used to contribute to the (often exaggerated) costs of providing universal service.⁶

Second, industry organisations in sectors subject to fierce international competition, such as the production of steel or the manufacture of automotive vehicles, argued that they were largely penalised by the high costs of essential production inputs (electricity, gas, transport etc.), which were provided by public monopolies. If these sectors were to remain competitive in the face of the globalisation of the economy, network industries had to be liberalised since competition would bring lower prices and better quality of service.

Third, consumer organisations also started to complain about the poor performance of public monopolies. Consumer prices tended to be high and the quality of service poor. The absence of competition, and thus of alternatives for consumers, gave public monopolies few incentives to adopt consumer-friendly policies and provide innovative products and services. Aligned with industry organisations, they claimed that competition was the best way to induce better prices, improve quality of service and stimulate innovation.

Fourth, early experiences of liberalisation in the United States and the United Kingdom convinced European authorities that the liberalisation model was workable and could provide positive economic results. A new model, based on the opening up of network industries to competition, combined with regulation through independent agencies, offered an interesting alternative to the much criticised and loss-making monopolies created at the turn of the 20th century.

⁵ W. Baumol, J. Panzar and R. Willig., (1982), *Contestable Markets and the Theory of Industry Structure*, New York, Harcourt Brace Jovanovich, 1982.

⁶ Regarding the methods which can be used to fund a universal postal service, see the WIK-Consult to the European Commission, *Main Developments in the Postal Sector (2004–2006)*, p. 78.

Finally, the European Commission realised that public monopolies, which were based on the granting of exclusive rights to national undertakings, were fundamentally at odds with its internal market policy. National monopolies prevented other Member States' operators from competing, thereby impeding the free movement of goods and services. In other words, the granting of exclusive rights had the effect of partitioning the common market in contradiction to the basic principles of the EC Treaty.⁷

In the mid-1980s, the European Commission launched a number of policy initiatives, such as the publication of green papers, leading to the adoption of proposals for directives liberalising the various network industries.⁸ While in the area of telecommunications the Commission managed to achieve quick results through its reliance on directives based on Article 86(3) of the EC Treaty, which provides the Commission with the power to adopt directives by itself, in other sectors⁹ the Commission relied on the lengthy legislative process under Article 95 EC (co-decision between the Council and the European Parliament).¹⁰ Directives in the energy and postal services sectors were thus the result of compromises between Member States and EU institutions, which were often short of the market opening ambitions of the Commission. Liberalisation directives were indeed often met with scepticism on the part of certain Member States, such as France or Belgium, which were keen to protect their public monopolies. Other Member States, such as the Netherlands or the United Kingdom, were by contrast in favour of rapid market opening. There was tension between Member States over the necessity and the speed of the liberalisation of network industries.

⁷ See § 5 of the preamble of Directive 90/388 of 28 June 1990 on Competition in the Markets for Telecommunications Services, O.J. 1990, L 192/10: The granting of special or exclusive rights to one or more undertakings to operate the network derives from the discretionary power of the State. The granting by a Member State of such rights inevitably restricts the provision of such services by other undertakings to or from other Member States.

⁸ See, e.g. Towards a Dynamic European Economy. Green Paper on the Development of the Common Market for Telecommunications Services and Equipment. Appendices. COM (87) 290, 30 June 1987; Green Paper on the development of the single market for postal services (communication from the Commission) COM(91) 476, June 1991

⁹ See J.L. Buendia Sierra, *Exclusive Rights and State Monopolies under EC Law: Article 86 (former Article 90) of the EC Treaty*, Oxford University Press, 2000.

¹⁰ C. Barnard, *The Substantive Law of the EU*, Oxford University Press, Oxford, 2004, pp. 493 to 535

3 THE THREE PILLARS OF THE LIBERALISATION PROCESS

The liberalisation of network industries in the EU has rested on three pillars.

First, liberalisation directives had to remove the exclusive rights which were granted to certain companies. Removing such rights did not necessarily involve major legal complications but, for reasons discussed above, often involved complex political compromises. One of the distinctive features of the liberalisation process in the EU consisted in the progressive nature of market opening. For instance, in the telecommunications sector, some services were open to competition before others¹¹ and in the energy sector some clients were free to select the supplier of their choice before others.¹² Such a staged approach provided incumbents with some time to reorganise themselves and prepare for competition. Such an approach was useful in achieving a consensus between Member States which, as noted above, did not necessarily agree on the need for liberalisation and the pace at which it should be pursued.

Second, liberalisation directives had to establish a regulatory framework. This framework contained not only substantive obligations, but also provided that Member States had to create independent regulatory authorities. The substantive obligations generally sought to maintain or expand universal service. Universal service was generally considered of central importance to the EU model and its survival had thus to be guaranteed in the new economic context created by liberalisation.¹³ Such obligations were also designed to facilitate the creation of competition in liberalised markets. The removal of exclusive rights by legislation does not necessarily render such markets competitive. Incumbents typically retain important advantages, such as the control of essential infrastructures (networks), well-established brand names, superior technical expertise, large cash reserves and special connections with their national

¹¹ Compare Directive 90/388, *supra* note 6 with Directive 96/19 amending Directive 90/388/EEC with regard to the implementation of full competition in telecommunications markets, OJ L 74/13.

¹² Compare Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, O.J. 1997, L 27/20 with Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC, O.J. 2003, L 176 /37.

¹³ See Article 16 of the EC Treaty: Without prejudice to Articles 73, 86 and 87, and given the place occupied by services of general economic interest in the shared values of the Union as well as their role in promoting social and territorial cohesion, the Community and the Member States, each within their respective powers and within the scope of application of this Treaty, shall take care that such services operate on the basis of principles and conditions which enable them to fulfil their missions.

government.¹⁴ Liberalisation directives thus typically contain rules that ensure third-party access to the network, accounting separation and cost-allocation rules (to prevent cross-subsidisation between competitive and non-competitive market segments),¹⁵ as well as rules designed to reduce switching costs (such as number portability in telecommunications). Such directives provide for pro-competition rules designed to create a level-playing field between incumbents and new entrants.

Besides such substantive rules, these directives typically contained provisions mandating Member States to create independent regulatory authorities.¹⁶ Under monopoly conditions, the regulatory framework was generally limited to price control and quality of service regulation, which were often carried out by a ministerial department (for instance, the ministry of energy or telecommunications). But in a liberalised market, regulation is typically more important (because, as we have seen above, one needs to create a level playing field between the incumbents and new entrants) and to avoid conflict of interests, it should be carried out by an independent entity. These agencies must be independent not only of the operators,¹⁷ but also of the government since the latter typically maintains holdings in the incumbents.¹⁸ A specific feature of the EU model is that regulation is carried out at Member State level. Federal agencies, such as the FCC or the FERC in the United States, do not have

¹⁴ See D. Geradin: *The Opening of State Monopolies to Competition: Main Issues of the Liberalization Process*. In D. Geradin, Ed., *The Liberalization of State Monopolies in the European Union and Beyond*, Kluwer Law International, 2000, at p. 181.

¹⁵ There is a rich economic literature on cross-subsidisation. See, e.g. G. Falhauber, "Cross-Subsidization: Pricing in Public Enterprises," (1975) 65 *American Economic Review*, p. 966; E. Bailey and A. Friedlaender, "Market Structure and Multiproduct Industries," (1992) XX *Journal of Economic Literature*, p. 1024; T. Brennan, "Cross-Subsidization and Cost Misallocation by Regulated Monopolists," (1990) 2 *Journal of Regulatory Economics*, p. 37; D. Heald, "Public Policy Towards Cross Subsidy," (1997) 68 *Annals of Public and Cooperative Economics*, p. 591. For good discussions of the responses offered by EC law, see L. Hancher and J.L. Buendia Sierra, "Cross-subsidisation and EC Law," 35 (1998) *Common Market Law Review*, at p. 901 and G. Abbamonte, "Cross-Subsidisation and Community Competition Rules: Efficient Pricing Versus Equity," (1998) 23 *European Law Review*, at p. 414.

¹⁶ See Damien Geradin, "Institutional Aspects of EU Regulatory Reforms in the Telecommunications Sector: An Analysis of the Role of National Regulatory Authorities," (2000) 1 *Journal of Network Industries*, 5; See, for instance, Phedon Nicolaidis, Arjan Geveke and Anne-Mieke den Teuling, *Improving Policy Implementation in an Enlarged European Union – The Case of National Regulatory Authorities*, (2003) *European Institute of Public Administration*.

¹⁷ See ECJ, 13 December 1991, RTT vs. GB-Inno-BM, C-18/88, ECR 1991, p.I-5491 at §28: "Articles 3(f), 90 and 86 of the EC Treaty preclude a Member State from granting to the undertaking which operates the public telecommunications network the power to lay down standards for telephone equipment and to check that economic operators meet those standards when it is itself competing with those operators on the market for that equipment."

¹⁸ Article 22 of Directive 97/67: "Each Member State shall designate one or more national regulatory authorities for the postal sector that are legally separate from and operationally independent of the postal operators. Member States shall inform the Commission which national regulatory authorities they have designated to carry out the tasks arising from this Directive."

an equivalent in the EU.¹⁹ At the time of liberalisation, a limited number of independent authorities already existed in the Member States, such as agencies in charge of controlling financial markets, but most Member States did not have agencies controlling network industries.²⁰ Liberalisation thus led to the creation of numerous new agencies in all Member States of the EU.

Third, liberalisation requires the application of competition rules, which are used in support of the market opening process. Several categories of competition rules are important. Article 82 of the EC Treaty and equivalent national competition rules are often used to prevent incumbents from abusing their market power. Indeed, incumbents, which even after market opening typically remain dominant (at least for several years), often resort to a variety of measures to prevent new entry.²¹ Such measures include refusal to access essential network infrastructures, anti-competitive cross-subsidisation between competitive and non-competitive services etc. Although ex ante regulation will often eliminate or at least reduce the risk of abusive behaviour, ex post application of competition may be needed to redress such behaviour when regulation has not proved sufficient.²² As competition progressively prevails in liberalised markets, Article 81 of the EC Treaty is also called upon to play an important role. Indeed, after a few years of tough competitive battles between incumbents and new entrants, these firms may decide to reduce the degree of competition through restrictive agreements, such as price-fixing or customer-sharing. Such initiatives must be resisted since they eliminate the benefits of liberalisation. The provisions of the EC Treaty prohibiting State aid (Article 87 et seq) also contribute to maintaining a level playing field in liberalised industries. Indeed, there may be a temptation for Member States to protect their incumbent against competition from new entrants by artificially increasing its competitiveness through various State aid measures. Finally, the EC Merger Control Regulation applies to all transactions meeting its thresholds. The liberalisation process has indeed triggered many mergers (though, as indicated below, fewer than one may have expected in some sectors), which need to be analysed to ensure that they will not impede competition in the market.²³

These three pillars are equally important. Removing exclusive rights without adopting a proper regulatory framework will not be sufficient since such a

¹⁹ See D. Geradin, *The Development of European Regulatory Agencies: What the EU Should Learn from the American Experience*, 11 (2005) *Columbia Journal of European Law* 1.

²⁰ See T. Prosser, *Law and the Regulator*, (1997) Clarendon Press Oxford, at p. 1 and the Public Report of the French Council of State, *Les autorités administratives indépendantes*, (2001) *Etudes et Documents du Conseil d'Etat*, n°52 at pp.281–284.

²¹ See Geradin, *supra* note 1.

²² See D. Geradin and M. Kerf, *Controlling Market Power in Telecommunications*, Oxford University Press, 2003.

²³ See, for an illustration in the energy sector, M. Piergiovanni, "EC Merger Control Regulation and the Energy Sector: an Analysis of the European Commission's Decisional Practice on Remedies," (2003) 4 *Journal of Network Industries*, p.227 at p.228.

framework is necessary to controlling the incumbent's market power and facilitating entry. The New Zealand experience, where the government had initially decided to liberalise the telecommunications market without adopting a proper regulatory framework, only to realise later that liberalisation was a failure and then to adopt such a framework, amply illustrates this point.²⁴ Similarly, competition rules are needed even in the presence of ex ante regulation, since such regulation typically contains gaps and is not sufficient to prevent certain anti-competitive behaviour, such as cartels or certain forms of State aid.

4 THE STATE OF PLAY

Twenty years after the first liberalisation initiatives were taken by the European Commission, liberalisation has made significant progress. The telecommunications (a term now replaced in the regulatory framework by the wider concept of "electronic communications")²⁵ and the air transport sectors are fully liberalised and, with some exceptions, competitive.²⁶ Price reductions and the development of new products and services have been spectacular, transforming the outlook of these industries. Few would contest today that the liberalisation of such sectors has generated substantial consumer benefits in terms of lower prices and wider access to services, although in some cases competition has created quality of service issues.²⁷ It has also allowed numerous companies, most often with innovative business models (e.g. the low-cost airlines), to enter the telecommunications and air transport markets.

Liberalisation is also well underway in the other network industries. In the energy sector, for instance, the electricity and natural gas markets will be

²⁴ D. Geradin and M. Kerf, *supra* 21.

²⁵ See, in particular, Directive 96/19 of the 13 March 1996 amending Directive 90/388 with regard to the implementation of full competition in telecommunications markets, (1996) O.J. L 74/13.

²⁶ Council Regulation 2408/92 on access for Community Air Carriers to intra-Community air routes, (1992) O.J. L240/8

²⁷ For instance, the benefits of liberalisation in the field of electronic communications have been clearly illustrated by Commissioner Viviane Reding's recent speech, "The Review 2006 of EU Telecom rules: Strengthening Competition and Completing the Internal Market," Annual Meeting of BITKOM, Brussels, 27 June 2006, SPEECH/06/422 ("Between 1996 and 2002, EU telecommunications services became much cheaper. On average, for the same telecoms services, consumers spent about 30% less of their income in 2002 than they did in 1996. Competition among telecoms operators has, in particular, drastically cut the cost of making phone calls over the past 20 years. Since 2000 the EU weighted average charge of a 3 minute call has fallen by 65% and the cost of a 10 minute call by 74%. At the same time, the EU telecom rules have led to impressive investments in electronic communications services both by the telecom incumbents and increasingly by new market entrants. Europe's market for electronic communication services amounted to some 273 billion euros in 2005. Aggregate investment, measured in terms of capital expenditure, rose to more than 45 billion euros in 2005, 6% more than in 2004. 2005 was thus the third consecutive year of increased year-over-year investment levels. On average, around half of the turnover currently generated in the electronic communications markets in Europe comes from new market entrants.")

entirely liberalised by 2007, thereby allowing all customers, including residential ones, to choose between suppliers.²⁸ Since 1 January 2006, the reserved area in postal services has been limited to 50 grams.²⁹ Although it has not been formalised yet, 2009 is often mentioned as the likely date for full liberalisation of the postal sector.³⁰ As far as rail is concerned, the second legislative package adopted in 2004 provided for the opening of the market for international freight transport to the entire European rail network as of 1 January 2006 and the opening of the market for national freight transport as of 1 January 2007.³¹ In the third legislative package, the Commission also proposed that international passenger services be opened up to competition in 2010.³²

Two important remarks should be made here.

First, while liberalisation has been largely driven by European directives, the degree of market opening tends to vary, sometimes significantly, between Member States. This is due to several causes. First, unless they provide for full market opening, EC liberalisation directives will only set up minimum opening thresholds, which can be exceeded by governments. This explains why some Member States have gone faster than others in opening up their markets to competition.³³ Second, even in the case of full liberalisation, some Member States have dragged their feet in implementing liberalisation directives.³⁴ This has created a degree of asymmetry between Member States as, in practice, firms in some Member States managed to avoid the obligations imposed by EC law for several years.

²⁸ See Directive 54/2003 of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 92/96, OJ L 176 of 15 July 2003, pp.37–56; and Directive 2003/55 of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30, OJ L 176 of 15 July 2003, pp.57–78.

²⁹ See Directive 2002/39 of 10 June 2002 amending Directive 97/67 with regard to the further opening up to competition of Community postal services, (2002) O.J. L 176 /21.

³⁰ See WIK, *supra* note 5, at p. 29.

³¹ See Directive 2001/12 of the European Parliament and of the Council of 26 February 2001 amending Council Directive 91/440 on the development of the Community's railways, (2001) O.J. L 75/1

³² Proposal for a Directive of the European Parliament and of the Council, amending Council Directive 91/440/EEC on the development of the Community's railways, COM (2004)139 (final) of 3 March 2004.

³³ Several Member States, such as Estonia, Finland, Sweden and the United Kingdom have, for instance, fully liberalised their postal markets although EC law still allows Member States to maintain a reserved area. See Elizabeth Eaves, *Opening the Mail*, Wall Street Journal, 22 March 2006.

³⁴ For instance, on 21 April 2004, after nine months of delay and two warnings, the Commission decided to take six Member States - Belgium, Germany, Greece, France, Luxembourg and the Netherlands - to the European Court of Justice for failing to implement fully new rules on electronics communications. See IP/04/510.

Second, it is interesting to note that while liberalisation has been particularly fast in some sectors (air transport and telecommunications) it has been much slower in others. This is due to several factors. First, in the mid-1980s, there was a general belief that liberalisation of the air transport and telecommunications sectors was genuinely needed to stimulate the development of the internal market (this is particularly true of the air transport sector) and the competitiveness of the industry (this is particularly true of the telecommunications sector, which in Europe was lagging behind the United States). In contrast, the benefits of liberalisation of sectors like energy, postal services and rail were disputed. Energy is a highly strategic sector and, thus, several Member States, such as France, adopted a reluctant stance towards the market opening process and devoted significant efforts to delaying it. While perhaps less strategic, postal services and rail are equally difficult sectors because of the anticipated social costs in terms of employment losses, one of the anticipated consequences of full liberalisation.

5 CURRENT BOTTLENECKS

As we have seen in the preceding Part, liberalisation is now complete in a number of sectors and well on its way in others. This does not mean, however, that all network industries markets are today competitive. The level of competition in the electricity and natural gas markets is, for instance, negligible in a number of Member States despite the fact that these markets are almost fully liberalised.³⁵ There are indeed a number of significant bottlenecks which are still preventing competition. These are discussed hereafter.

A. Poor transposition of EC directives

A first problem is the inadequate implementation of liberalisation directives in some of the Member States. One advantage of relying on directives is that they give some degree of flexibility to Member States.³⁶ This may be important, considering the different national situations in terms of market structures, administrative traditions etc. The problem posed by this instrument is that directives have to be implemented by the Member States and some are dragging their feet in introducing EC provisions within their national legislation. This creates a degree of asymmetry in the level of regulation which applies to

³⁵ See European Commission, "Energy Sector Inquiry Confirms Serious Problems and Sets out Way Forward," press release IP/06/174 of 16 February 2006.

³⁶ For a good discussion of the main features of directives, see Paul Craig and Grainne de Búrca, *EU Law – Text, Cases and Materials*, (2003) 3rd Ed., Oxford University Press, p.99. From a legal perspective, the choice of a directive as a legislative instrument implies a division of competences between the EC and the MS's. The EC institutions set the legislative goals to be achieved, while the MS's are left free as to the form and method of achieving these goals.

network industries in the different Member States, as well as distortions of competition. The tools at the disposal of the Commission to force Member States to implement directives are, however, somewhat ineffective. Legal action against Member States for failure to implement directives typically takes several years before the European Court of Justice (the "ECJ") arrives at a judgment.³⁷ In the meantime, the regulatory asymmetry denounced above persists.

B. Lack of EU-wide regulatory authorities

As noted above, the EU system relies on the implementation of regulatory obligations through national agencies. The advantage of this approach is that national authorities are closer to the regulated firms than European agencies would be. This may contribute to improving the quality of regulation. On the other hand, a degree of asymmetry exists between the levels of independence, competence, resources and accountability of the national agencies. While some authorities, such as OFCOM or OFGEM in the United Kingdom, are well-resourced and independent, authorities in several Member States are still closely associated with their national governments and their resources may be insufficient to adequately performing their missions. This may be another source of distortion in the internal market.

Of equal concern is the fact that national authorities seem poorly adapted to dealing with cross-border issues since their scope of action is typically limited to their Member State borders.³⁸ Yet, there are a certain number of regulatory issues of a cross-border nature, such as the regulation of electricity flows between Member States. The lack of EU-wide regulatory authorities has been somehow compensated by various forms of co-operation between the Commission and the national regulatory agencies, but it is not clear that such

³⁷ According to the official statistics of the European Court of Justice, a judicial procedure lasts 20.2 months on average
<http://www.curia.europa.eu/fr/instit/presentationfr/rapport/stat/st04cr.pdf>

³⁸ This mismatch was recently acknowledged in a high-profile study (generally referred to as "the Sapir Report") delivered by a group of distinguished scholars to the Commission. The report pointed out that "a policy may be inappropriately allocated between the EU and the MS levels with respect to the objective that is being pursued (either inappropriate centralisation or decentralisation)" and consequently raised the question of whether "the current assignment of competences between the EC and the MS could be considered optimal." See "An Agenda for a Growing Europe - Making the EU Economic System Deliver," Report of an Independent High-Level Study Group established upon the initiative of the President of the European Commission, July 2003, p.88. This document is available at
www.europa.eu.int/comm/dgs/policy_advisers/experts_group/ps2/odcs/agenda_en.pdf

co-operation is as effective as fully-fledged European agencies would be.³⁹ There are, of course, European agencies in fields, such as air or rail transport, but these agencies' competencies are essentially limited to safety and inter-operability issues. By contrast, they are not competent with respect to complex economic regulation issues, which have been discussed above.⁴⁰

C. Anti-competitive behaviour on the part of the incumbents

Opening up the network industries' markets to competition does not mean that such markets will become competitive overnight. In fact, following liberalisation, the incumbents typically retain very strong market positions and thus remain dominant for a number of years. For instance, although the UK telecommunications market was opened up to competition in the 1980s, BT still remains dominant in a variety of market segments. The same can be said of most incumbents in network industries.

Incumbents will often rely on their market power to prevent entry to the market. They can do so through a variety of practices, such as refusal of access to essential network elements,⁴¹ abusive pricing practices (e.g. margin squeeze), anti-competitive cross-subsidisation⁴² etc. EU directives typically contain regulatory measures designed to prevent such abuses of market power, but the

³⁹ Another model, which has been used in the energy sector, involves the Commission encouraging market players to co-operate in order to find solutions to the main cross-border issues through voluntary measures. This led to the creation of the so-called Florence Forum (dealing with cross-border issues in electricity) and the Madrid Forum (dealing with cross-border issues in gas). On the "Florence Forum," see Burkhard Eberlein, "Regulating cross-border Trade by Soft Law? The Florence Process in Supranational Governance of Electricity Markets," (2003) 2 *Journal of Network Industries*, 13. Information on the Florence Forum is available at http://www.europa.eu.int/comm/energy/en/elec_single_market/florence/index_en.html. Information on the Madrid Forum is available at http://www.europa.eu.int/comm/energy/en/gas_single_market/madrid.html. However, the Commission understood the intrinsic limits to this co-operative approach and decided to deal with cross-border issues through EC legislation. See Regulation 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity OJ L 176 of 15 July 2003, pp.1–10.

⁴⁰ See D. Geradin and N. Petit, "The Development of Agencies at EU and National Levels," *Yearbook of European Law* 2004, Oxford 2005, p. 147.

⁴¹ With respect to the rail sector see, e.g. Commission Decision of 27 August 2003, GVG/FS, (especially at § 120) OJ L 11 of 16 January 2004, pp.17–40 and O. Stehmann, "Applying Essential Facility Reasoning to Passenger Rail Services in the EU – the Commission Decision in Case GVG," (2004) 7, *European Competition Law Review*, 290.

⁴² For instance, on the 20 March 2001, the Commission issued a decision holding that Deutsche Post AG was using revenues from its profitable letter-post monopoly to finance a strategy of below-cost selling in parcel delivery services. The complainant, UPS, alleged that without the cross-subsidies from the reserved area, Deutsche Post AG would not have been able to finance below-cost selling for any length of time. UPS therefore called on the Commission to prohibit Deutsche Post AG's fidelity rebate scheme and its policy of below-cost selling. UPS further requested the Commission to impose a structural separation of the reserved area and to render parcel services open to competition. Case COMP/35.141, *Deutsche Post AG*, 2001 O.J. (L 125) 27.

creativity of incumbents when it comes to protecting their dominant position is such that these measures are often insufficient. This requires the intervention of the European Commission, the national competition authorities and the national courts on the basis of competition rules. Over the last twenty years, competition authorities have sanctioned many incumbents for abuse of market power in all network industry sectors.⁴³ Because EC competition rules hand significant power of investigation and enforcement to the European Commission, these rules are the most powerful instrument at the disposal of the Commission in preventing abuses of market power.

D. Economic patriotism

One of the key objectives of the European Commission when it initiated the liberalisation process was the creation of truly integrated EU markets. Yet, while liberalisation has introduced a degree of competition within national markets, it has so far failed to create such EU-wide markets.⁴⁴ There are a number of reasons for this. First, as noted above, regulation is essentially a national matter. This does not facilitate the operations of firms with European ambitions. Moreover, network infrastructures were usually originally conceived for national markets, not a European one. For instance, national rail infrastructures were often incompatible, thus preventing trains from travelling across Member States. Interconnectors at national borders typically have insufficient capacity to allow significant electricity exchanges. The flow of goods and services is thus impeded by the lack of cross-border infrastructures. This is the area in which most investment is needed.

An additional factor is that there are relatively few EU-wide operators in network industries. Airlines or rail companies are still largely national. The same can be said of telecommunications, energy and postal operators. Network industry sectors in Europe are thus composed of dozens of operators, some relatively small, and most of which operate in one Member State only. This contrasts with the situation in the United States where, with some exceptions, network operators tend to be large and operate throughout the nation. The number of cross-border mergers in these sectors has remained relatively modest although things are progressively changing.

⁴³ See the various contributions in D. Geradin, *Remedies in Network Industries*, Intersentia, 2004.

⁴⁴ With respect to the energy sector, see A. Piebalgs, "The situation of Internal Markets in Gas and Electricity," SPEECH/06/94 of 16 February 2006; N. Kroes, "Towards an Efficient and Integrated European Energy Market – First Findings and Next Steps," SPEECH/06/92 of 16 February 2006, European Commission Conference, Energy Sector Inquiry – Public Presentation of the Preliminary Findings Brussels.

In recent months, however, one has observed a powerful movement in certain Member States for the protection of their national champions. One could cite, for example, the efforts of the:

- French government to merge Suez with GDF as a way of countering a bid by Enel for Suez;⁴⁵
- Luxembourg, French, Spanish and Belgian governments to block a hostile takeover of Mittal by Arcelor;⁴⁶
- Spanish government to advance a merger between Endesa and Gas Natural to which it was favourable;⁴⁷
- Polish government to prevent Unicredito from taking over BHP, a large local bank, through its acquisition of HBV, a German bank controlling BHP.⁴⁸

This has triggered strong reactions from certain Member States, opposed to this new form of protectionism, but also from the Commission, which considers that the above efforts could run counter to internal market rules and competition rules.⁴⁹ Economic patriotism is a serious issue because it is fundamentally at odds with the creation of EU-wide firms operating on an EU-wide market.

6 CAN WE DO AWAY WITH SECTOR-SPECIFIC REGULATION?

Incumbents are frequently heard claiming that it is time for the progressive phasing out of sector-specific regulation. This claim is obviously motivated by the fact that regulation places restrictions on their behaviour and generates implementation costs. Most experts agree that sector-specific regulation should in principle be transitory and that, as regulation is rolled-back, network industries should be increasingly controlled through general competition rules. On the other hand, new entrants are against this phasing out since they see themselves as somehow protected by these rules.

In the electronic telecommunications sector, the Commission has already engaged in a deregulatory process through its proposal for a new electronic communications regulatory framework, subsequently adopted by the Council of

⁴⁵ H-H. Härtel, "The Threat of Economic Patriotism," (2006) 2, *Intereconomics*, 58, p.59.

⁴⁶ See Le Figaro, "Arcelor-Mittal: la «grammaire des affaires» a finalement eu raison de celle des politiques," *Y. de Kerdrel*, 28 juin 2006.

⁴⁷ H-H. Härtel, *supra* note 44, p.59.

⁴⁸ European Commission, "Commission launches procedure against Poland for preventing Unicredit/HVB merger," Press Release IP/06/277 of 8 March 2006.

⁴⁹ N. Kroes, "Competition policy in a Lisbon context – the State of Play," SPEECH/06/439 of 6 July 2006, German Bundestag – Europaausschuss, Berlin.

Ministers and the European Parliament.⁵⁰ This framework is deregulatory in the sense that it requires that sector-specific regulatory requirements be only adopted or maintained provided that the market in question is identified as non-competitive due to the presence of a dominant firm.⁵¹ This means that, as markets become increasingly competitive, sector-specific rules should progressively disappear. In the absence of such rules, these markets would be subject to the disciplines imposed by competition rules, like other sectors of the economy. There is no doubt that this approach could and probably should be replicated for other network industries, but the level of competition in these sectors is probably insufficient to justify such a deregulatory effort.

Moreover, even in the electronic communications field, it is unlikely that sector-specific regulation will soon, if ever, completely disappear. First, the local loop still has natural monopoly features and until wireless technologies are able to entirely replace the telephone network, it will still have to be regulated. In addition, regulation will remain necessary to maintaining a reasonable level of universal service. In the absence of regulation, universal service would not be provided spontaneously by market forces, since it entails providing services to unprofitable customers or in loss-making areas. The same remark can be made of other network industries. Universal service could thus remain the last bastion of regulation.

One must thus expect a progressive reduction of the level of sector-specific regulation currently observed and an increasing reliance on competition rules to prevent incumbents from abusing their market power. It is, however, unlikely that sector-specific regulation will entirely disappear.

⁵⁰ Directive 2002/21 on a common regulatory framework for electronic communications networks and services, 2002 O.J. L 108/33.

⁵¹ The new regulatory framework for electronic communications does provide for a review system whereby regulatory requirements can only be imposed or maintained with respect to operators holding significant market power as long as they are necessary to correcting a market failure. See recital 27 of the preamble of the Framework Directive: "It is essential that ex ante regulatory obligations should only be imposed where there is no effective competition, i.e. in markets where there are one or more undertakings with significant market power, and where national and Community competition law remedies are not sufficient to address the problem." See D. Geradin and G. Sidak, "European and American Approaches to Antitrust Remedies in the Regulation of Telecommunications," in S. Majumdar, I. Vogelsang and M. Cave, eds., *Handbook of Telecommunications Economics*, Vol.II: Technology Evolution and the Internet, North-Holland, 2004.

7 CONCLUSION

Liberalisation has largely been a successful process, which should be completed. Lower prices, higher quality, greater innovation and more customer-friendliness are some of the main achievements of this process, although exceptions can be identified in some markets. The challenge at this stage is no longer whether liberalisation should take place. It is to ensure that EU citizens will be able to enjoy the benefits of competitive markets.

The EU institutions and the Member States should thus seek to remove the various bottlenecks identified above, which still impede the development of competitive markets. While the European Commission has the power to initiate proposals for new legislation, the ball is essentially in the court of the Member States. Faster and better implementation of EU directives, putting in place independent and well-resourced regulators, investments in network infrastructures, and the absence of protectionist policies are principles/actions that should significantly contribute to the development of competitive network industries markets.

EFFECTIVE INNOVATION POLICIES FOR EUROPE – THE MISSING DEMAND SIDE

Luke Georghiou¹

Summary

The pressures of globalisation have brought innovation to the fore as a key element in increasing productivity and underpinning industrial competitiveness. Trends such as open innovation have created a networked innovation ecology which requires new kinds of policy support. Innovation policy is a global concern for governments, but Europe faces particular challenges. Negative indicators such as a growing cumulative economic growth gap and productivity growth which has fallen further behind the USA for over a decade are linked to underperformance in innovation. Any policy which seeks to help firms, singly or collectively, to improve their capacity to innovate may be seen as an innovation policy. A taxonomy of research and innovation policies is presented which distinguishes between supply-side (finance and services) and demand-side support.

It is contended that the demand side (systemic policies, regulation and public procurement) has been underexploited. This is especially so for Europe where the problem of underinvestment in business R&D and other innovative activities is strongly linked to the fragmented condition of European markets in scale, regulation, IPR terms etc. The recent report, "Creating an Innovative Europe," put the need for markets friendly to innovation at the core of its proposals for reviving the Lisbon Agenda. New policy documents have responded positively and now feature the promotion of lead markets in a central role. The paper concludes by assessing what the implementation of policies based upon procurement and regulation would require. It notes the reluctance to pursue the kind of bold large-scale actions that would be needed to begin the transformation of Europe as an innovatory environment.

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1 THE IMPORTANCE OF INNOVATION

The pressures of globalisation have brought innovation to the fore as a key element in increasing productivity and underpinning industrial competitiveness. Since the industrial revolution, innovation has transformed industries ranging from textiles to power supplies. In more recent years, microprocessors and the Internet are but two examples of technological drivers of change which have created massive opportunities and changed the international economic order. The ability to exploit new ideas successfully is not confined to technology-based activities in manufacturing industries – service sector innovation is currently one of the most dynamic areas of activity and the strong desire for improvements in the cost and quality of public services is unlikely to be met without major innovative changes.

Business cannot afford to opt out of innovation, although the advent of “open-innovation”² has broadened the range of knowledge sources that a firm may draw upon. Thus, traditional corporate R&D is supplemented and in some cases replaced by the outsourcing of R&D and the acquisition of small technology intensive firms by larger companies with market power. The new ecology of innovation³ is completed by a complex web of collaborative relationships linking firms and knowledge suppliers (public labs, private R&D contractors and universities), customers and suppliers of goods and services, and government at different levels and in multiple roles including regulator, facilitator, funder and purchaser. This intensive drive towards networked approaches has arisen in response to ever shortening product cycles which mean that the innovation process must be agile, efficient and, above all, fast. Becoming more efficient in an effort to meet global competitive pressure means that firms must strive to share and re-use competitive platforms – for example the EUREKA Initiative’s ITEA Cluster Project supported the development of a software platform which underpins most of Nokia’s mobile and network products and the majority of those from Philips Medical Systems.

1.1 Europe’s position under threat

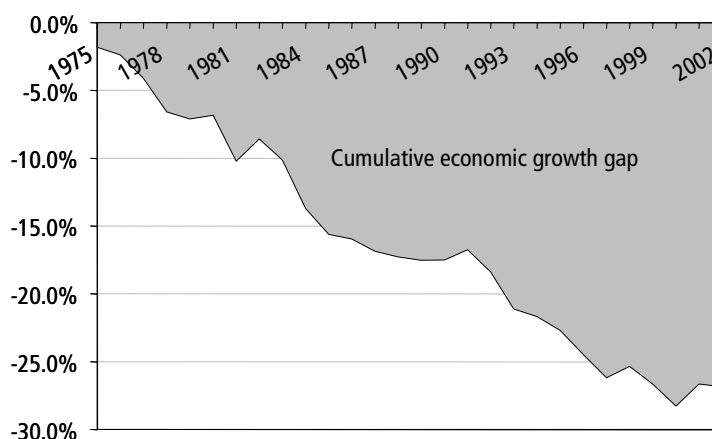
All countries seek constantly to improve their innovation performance – see for example the new emphasis on innovation in Japan’s 3rd Basic Plan for Science and Technology by contrast with its predecessors, the USA’s Innovate America

² Chesbrough, H. (2002): Open Innovation: The new Imperative for Creating and Profiting from Technology, Harvard Business School Press.

³ Coombs, R. & Georghiou, L. (2002): A New Industrial Ecology, Science Vol. 296 p.471 April 19 2002.

report⁴, expressing particular concerns about the capability of the workforce, and China's worries about excessive reliance on foreign direct investment as a driver of innovation. We are concerned with Europe's specific predicament. Here too, national governments and other actors have been paying increasing attention to innovation policy⁵. Other papers in this series address the wider economic picture but we can cite a few indicators to emphasise the problem.

Figure 1 Cumulative economic growth gap between the EU and the other industrialised countries (current prices and current PPPs).



Note: For both the EU-15 OECD countries and the non-EU-15 countries, 1974 GDP at current prices and current PPPs (billions of dollars) has been taken as 100. For all following years, GDP growth in percentages relative to the 1974 amount has been calculated. Then the series for the non-EU-15 OECD countries (Australia, Canada, Iceland, Japan, Korea, Mexico, New Zealand, Norway, Switzerland, Turkey and the US) has been set to 100 and the difference with respect to the series for the EU-15 calculated.

Source: DG Research Impact Assessment of FP7, 2005. Data: OECD.

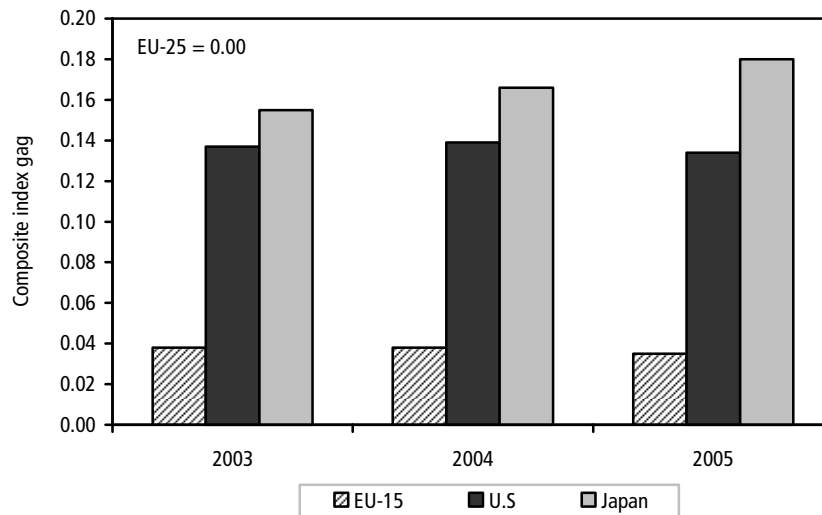
Figure 1 shows that despite a good performance by a few Member States in recent years, over the last quarter of a century European growth as a whole has underperformed by comparison with the world economy. A demographic challenge which will see a sharply rising dependency ratio, with the proportion of people over 65 rising from 16.4% in 2004 to 29.9% in 2050, points to the need for a sharp increase in productivity. This is taking place against a background whereby, for the first time in the post WW2 era, both labour

⁴ Council on Competitiveness (2005): National Innovation Initiative (NII) Final Report - Innovate America: Thriving in a World of Challenge and Change. <http://innovateamerica.org/>

⁵ See for example the UK Government's Innovation Report, *Competing in the global economy: the innovation challenge*, December 2003; The Finnish Ministry of Trade and Industry's Evaluation of the Finnish Innovation Support System (publication 5/2003); France's Association nationale de la recherche technique (ANRT) creation of the Futuris foresight in the research and innovation system; Malta's National Strategic Plan Research and Innovation 2007–2010 Building and Sustaining the R&I Enabling Framework, 2006; Portugal's Technological Plan 2005 etc.

productivity and total factor productivity have continued to fall further behind those of the USA for a period of almost a decade. Relative failure to capitalise on the application of information and communication technologies has been a major explanatory factor⁶.

Figure 2 EU Innovation Gap with US and Japan.



Source: European Innovation Scoreboard 2005, Trendchart on Innovation.

The European Trendchart on Innovation has produced a composite innovation performance index based on a set of comparable data for 16 indicators⁷. Figure 2 shows that the US and Japan are still far ahead of the EU25. The innovation gap between the EU25 and the US is close to stable, while that with Japan is increasing. The main drivers of the gap in both cases include USPTO patents and the percentage of the population with a tertiary education. For the USA, ICT expenditures are the other major distinguishing factor, while for Japan the third driver is superior performance in Triad patents. The evidence points in the same direction at sectoral level, even in Europe’s traditionally strongest areas. Hence, in pharmaceuticals in 1990 Major European research based companies spent 73% of their world-wide R&D expenditure in EU territory while by 1999 this had fallen to 59%, with most of the transfer being to the USA.⁸ The effect on market performance is clear – in 1992 six out of the top ten pharmaceuticals were produced by European companies while by 2002 it was two out of ten.

⁶ European Economy, European Commission Directorate-general for economic and financial affairs Economic papers N° 208 July 2004, An analysis of EU and US productivity developments (a total economy and industry level perspective), Cécile Denis, Kieran McMorro and Werner Röger.

⁷ European Trendchart on Innovation, Innovation Scoreboard 2005, <http://trendchart.cordis.lu/scoreboards/scoreboard2005>

⁸ Data from European Federation of Pharmaceutical Industries and Associations.

1.2 Creating an Innovative Europe

It was the combined forces of these and other indicators which raised the concerns of the authors of the report, "*Creating an Innovative Europe.*" Despite the important and necessary measures being undertaken in fulfilment of the Lisbon agenda, our concern was that rhetoric exceeded action and that temporarily and partially favourable economic conditions were inducing a sense of complacency among the public and a reluctance on the part of governments to undertake reforms on the scale necessary to maintain a viable competitive position in the face of globalisation. A holistic approach to policy was proposed along with a range of actions not only by government but also by the other stakeholders in industry, academia and even more broadly by the public at large. The package of interdependent changes that are needed involve:

- Creating a market friendly to innovation;
- Providing sufficient resources for R&D and innovation
- Improving the structural mobility of Europe and
- Building positive attitudes and a culture favourable towards entrepreneurship and risk taking.

The case for a need to create a market friendly to innovation rests upon both direct and indirect evidence from industry of the negative effect Europe's fragmented markets are having upon its R&D and other investment decisions. Most recently, companies replying to the EU 2005 Survey of R&D Trends⁹ indicated that market demand for new products and services is clearly the most important factor influencing the level of R&D investment while market access is the most important factor influencing mobile R&D location decisions. The rest of this paper focuses on how innovation policy can engage successfully with the concept of the "innovation-friendly market."

2 INNOVATION POLICY

In writing about innovation policy, it is as well to begin with a definition. Herein, any policy which seeks to help firms, singly or collectively, to improve their capacity to innovate is regarded as an innovation policy. This includes the provision of scientific infrastructure in research and education and direct and indirect support for research and technological development. It also includes a wide range of policies which aim to build networks, to make markets more conducive to innovation, to facilitate the transfer of technology, to help firms to acquire the relevant capabilities, and to provide a supporting infrastructure in

⁹ European Commission Directorate General Joint Research Centre and Directorate General Research, Monitoring Industrial Research: the 2005 EU Survey on R&D Investment Trends in 10 Sectors, <http://iri.jrc.es/>

areas such as standards and intellectual property. Many other public policies also affect innovation, although this is not their main object. This group includes macro-economic policies, education more generally, public procurement, regulation (pollution or health and safety) and competition policy.

There are long-running debates concerning the degree to which it is legitimate for government¹⁰ to intervene in support of innovation in the economy. A broad consensus exists that it is a government's duty to provide effective education and a strong science and engineering base. More recently, that consensus has extended to the need for the public science base to be effective in knowledge transfer or exchange with industry. The other area of general agreement is that government should provide the necessary framework conditions including, at a higher level, macroeconomic stability, competition policy and general infrastructure plus, more directly, the infrastructures referred to in the preceding paragraph and others such as physical standards. Economic rationales for innovation policy rest upon two main foundations, market and systemic failures, which in some senses compete and in others are complementary. We shall return to these in the discussion below.

2.1 Policy measures

The range of explicit innovation policies being applied today is very much concerned with the supply side and even more with R&D support of various types, ranging from funding of science in public institutions to fiscal incentives for firms to increase R&D spending. Much less attention has been paid to policies which could increase either the motivation or the likely success of innovation by acting on the demand side i.e. the specification and purchase of innovative goods and services. In Figure 3 (page 193) we present a first taxonomy that attempts to balance those discussed above by showing both demand and supply-side innovation policy measures, and also re-emphasising that broader policies not specifically targeted at research and innovation (here termed framework conditions) can also influence these activities.

Demand-side policies can be presented in three main groupings:

1. Systemic policies which provide an environment which may amplify other innovation policy measures by optimising relationships between actors – the promotion of clusters being an example;
2. Regulation which in many markets such as environmental technologies defines the competitive space and can be used to extend it; and

¹⁰ Herein, the term 'government' encompasses all levels including national, regional and supra-national and combinations thereof in multi-level governance.

3. Procurement, where the purchaser can specify goods and services in terms of a function which offers a higher performance than is currently available off-the-shelf and hence requires an innovative step to achieve it.

2.2 Systemic policies

What we term systemic policies are by now quite well understood. Cluster policies are essentially concerned with creating or strengthening linkages between actors in a value or knowledge chain, often but not always in a regional context. The highly uneven regional distribution of innovative activity in almost any national context emphasises the importance of such effects. Much of the policy effort towards clusters goes into facilitation and incentivisation of such linkages, and may involve actions such as foresight exercises to help build a common vision. In the context of the trend towards open innovation discussed above, the importance of building networks and clusters is critical for a well-functioning innovation system. Clusters also have a market dimension, providing a useful arena within which regulators and purchasers (private or public) may come into early contact with the producers of innovations in goods and services. This approach could be summarised as providing a means by which the full range of innovation policies may be combined and amplified to achieve a greater effect. Similar benefits of co-ordination may be achieved within the context of the more recent concept of the technology platform.

2.3 Lead markets

The concept of "lead users" is a long-standing one in innovation through the work of von Hippel and others¹¹. Early users take the risk of working with a technology that may not be fully optimised in return for access ahead of their competitors or achieving a desired solution to a problem more quickly. Innovators benefit from the learning and feedback that this environment offers. For small firms there is the added benefit of credibility gained by having an installation of their technology as the beginning of a reference list.

Extending the concept of a lead user to that of a lead market requires widespread early adoption of an innovation through multiple users of this type, or else through a single user with sufficient purchasing power. Such users would

¹¹ Erich von Hippel introduced the concept of lead users in innovation – defined as those whose present strong needs will become general in a marketplace months or years in the future – see von Hippel, Eric (1986) "Lead Users: A Source of Novel Product Concepts," *Management Science* 32, no. 7 (July):791–805.

then constitute a market in their own right. In such cases, the learning benefits are supplemented by a reduction of risk in the investment necessary to perform R&D and to innovate. The expectation is that other markets would then adopt the design so established, giving it international dominance. The characteristics of a lead market include customers willing to pay a premium for the particular features of the innovation, or even in some consumer markets for its novelty per se. This could imply a high degree of customer "intelligence", meaning anticipatory knowledge of the technology. Compatible infrastructure may also be a factor. In general, such markets should have sufficient scale for the costs of innovation to be viable. Market requirements should also be sufficiently generic to allow for expansion/export into wider markets as costs fall through continuing innovation or increasing scale of production. Finally, a lead market should provide the more general conditions favourable to innovation such as an efficient and responsive regulatory structure, security for intellectual property etc.

It should be noted that there are inherent risks in this concept, notably that the lead market requires product or service characteristics that are so specific (idiosyncratic) that the possibility of extension to other markets is foreclosed. An example is the UK's System X telephone exchange developed by the then Post Office and launched in 1980 but failing to penetrate export markets. The French Minitel experience is a case where domestic success was not matched by exports in the face of emerging competition from the Internet.

Successful examples of such markets include Japan in terms of facsimile machines, the USA for pharmaceuticals and Germany with respect to ecological consumer products.

If we briefly consider the promotion of lead markets in terms of policy rationales, we could assert that the existence of fragmented markets meets the criteria of market failure, for example that there is a deficiency and an asymmetry in the information available to those intending to undertake or to purchase innovations. Fragmentation also increases the risk involved in innovation (and early purchase). Convergence on a standard allows firms to internalise spillovers and hence to increase the incentive to invest in R&D. The system failure rationale also favours this approach with the emphasis it places on the need for effective linkages between the actors and institutions of an innovation system. Under conditions of fragmentation, such information is unlikely to flow effectively and the value of each individual element of information – say on customer requirements – is diminished by its specificity. Regulation is potentially an area of "government failure" in that regulations are designed without taking into account a sufficiently broad range of policy considerations – in this case the benefits of innovation.

This leaves us with the key slogan of non-intervention – the need to avoid picking winners – in essence telling us that any choices made by public authorities will be inferior to those put forward by the market under conditions of competition. In this situation, this is a false analogy. Picking winners was originally about selecting firms (national champions, sometimes ailing national champions) or about selecting technologies (specific solutions). Here we are selecting whole market areas in terms of their importance to the economy, their apparent ripeness for innovation and a current situation of fragmentation in Europe relative to the rest of the world. No specification is to be made of which firms or even of which solutions should be pursued in the first instance. Eventually, under competitive conditions, preferred solutions and suppliers will emerge but this happens in all markets. What must be achieved is an open process whose result sees winners emerge. It is possible to deal with other concerns through the ways in which lead markets are promoted via policy. First, a demonstrated level of commitment from business should be a prerequisite for action – a sector where the desire for co-ordination has already emerged. Secondly, the measures taken within that sector should preserve competition wherever this is feasible. For example, in procurement second sourcing, perhaps from an innovative SME, could keep alternative options open.

3 POLICIES TO PROMOTE INNOVATION-FRIENDLY MARKETS

In *Creating an Innovative Europe* it was noted that Europe already had the favourable conditions provided by relatively high incomes and a willingness to purchase higher quality goods, but that four key steps were needed to create functional markets:

- Providing a harmonised **regulatory environment** across the EU favourable to innovation and based on early anticipation of needs;
- Using **standard**-setting powers to demand high technical performance levels and reach agreement on new standards quickly and efficiently;
- Using **public procurement** to drive demand for innovative goods, while improving the level of public services; and
- A horizontal factor, fostering a **cultural shift which celebrates innovation** and a desire to possess innovative goods and experience innovative services, such that Europe develops as a natural home for innovators.

A discussion paper from the Finnish EU Presidency¹² set out its own list 1) competition and innovation-friendly regulation, 2) innovation-oriented public services, 3) an adaptable research infrastructure and 4) a strong culture of entrepreneurship. Here, we shall briefly explore the topics of standards and regulation, and that of procurement, in more detail.

3.1 Regulation and standards as instruments of innovation policy

The setting of standards is largely the responsibility of industry bodies but is also an area which induces competitive positioning between different industry groupings which attempt to get their de facto standards adopted as a key source of market advantage. European successes in this respect include GSM and ADSL. The Presidency paper points out that intelligent setting of standards can reduce the risk for both innovator and purchaser by aggregating demand in fields that might otherwise be spread too widely over multiple solutions. Standards can also encourage innovation if they are set at a demanding level of functionality without specifying which solution must be followed, hence opening the door to innovation. While agility is certainly a characteristic to be aspired to in standards-setting, the actual timing is a matter of fine judgement – too soon means that a technology may not be sufficiently advanced to deliver high performance and too late may allow unwanted divergence to emerge.

Regulation is an area where pan-European action by governments can make a critical difference. Despite the numerous directives in force, it remains the case that Europe is operating with 25 markets in many areas either through lack of reach of harmonising measures or because local variants or complementary rules and practices prevent the benefits of harmonisation from being felt. One example of such post-regulatory fragmentation is the e-signature directive and another at an earlier stage is the proliferation of some 40 e-invoicing solutions. Supporters of de-regulation might also argue that the less regulation there is, the less need there is to harmonise it (although, of course, deregulation must also be harmonised across the EU).

¹² Market Demand As A Driver Of Innovation – Towards A More Effective European Innovation Policy Discussion note to the informal meeting of the competitiveness ministers, Jyväskylä, Finland, July 10–11, 2006.

The role of regulation in stimulating innovation was explored in a study for the Commission which proposed a “Third generation innovation policy”¹³. This emphasised regulatory and institutional reform, involving:

- Content of regulations (for example of market liberalisation);
- Reducing the regulatory burden;
- Building more flexible regulatory approaches; and
- Innovation within regulatory policy itself.

Within the domain of innovation policy, regulatory reform is seen to affect innovation indirectly through affecting the funds available for investment and market size and structure, and directly through its impact upon the perceived profitability of particular lines of development. As with standards, regulation can be used to set targets for innovation (so-called performance based regulation). For example, an environmental emissions target beyond current capability may anticipate and aim to stimulate innovation. It is no coincidence that eco-innovation is often cited as a crucial area in which the lead market principle could be applied.

A comprehensive study of the relationship between regulation and innovation has emphasised the role of regulations in shaping new markets, while also pointing out that, from the perspective of companies, regulations have both positive (quality-raising) and negative impacts (slowing time to market) on aspects related to the introduction of new products and services¹⁴. Positive impacts also arise from protection from liability claims and increased user acceptance while negative impacts are mainly on the costs of labour, energy and materials. The study found a strong consensus among firms that approval procedures are too costly and too long – public help regarding the fulfilment of regulations is insufficient and regulations are perceived to be too numerous, inflexible and lacking in transparency.

It is of course necessary to remember the purpose of regulations in protecting consumers and worker health and safety as well as the interests of companies in relation to their competitors. Nonetheless, bodies responsible for regulation in these areas should also consider the benefits that innovation may offer to their core missions.

In general terms, the requirement is for a much more agile regulatory system that again uses foresight and other approaches to anticipate technological

¹³ Louis Lengrand and Associates, PREST and ANRT, 2003, Innovation tomorrow – Innovation policy and the regulatory framework: making innovation an integral part of the broader structural agenda, Directorate General for Enterprise Innovation Papers No 28, EUR 17052.

¹⁴ Blind, K. et al., Fraunhofer Institute for Systems Research, New Products and Services: Analysis of Regulations Shaping New Markets, European Commission, 2004.

development and to foster the integration of new products and services through more rapidly approved and harmonised regimes. This cannot be achieved without bringing regulators into contact with innovators in the type of supply-demand co-ordination which is the theme of this paper.

3.2 Procurement

When it comes to the specific use of procurement there are three main categories of policy:

1. Public procurement of innovative goods and services;
2. Public procurement of R&D and demonstrators; and
3. Support for more effective private procurement of either of the above through initiatives in e-procurement or training of private procurers in innovative procurement.

Procurement of R&D is of interest because it is exempted from certain regulatory constraints (notably, it can be limited to European suppliers) and may be used to bring goods to market readiness. However, we will not deal any further with this issue here, focusing instead on the procurement of goods and services. Similarly, for reasons of space, the issue of stimulating private procurement for innovation is only noted here as a potential arena for action.

The potential for the use of public procurement as an instrument in stimulating innovation has received growing emphasis in Europe in recent years. Representing 16.3% of European GDP, public procurement is both a key source of demand for firms in sectors such as construction, health care and transport, and a major area in which governments are striving to improve their effectiveness in the delivery of public services.

The 1990s saw the first systematic approaches in some countries towards utilising state procurement and the promotion of private procurement to create new markets and diffuse innovations (for a selection of cases, see Edquist et al.¹⁵). Procurement for innovation is currently on several national agendas. In the United Kingdom, the Government's Innovation Report of 2003 proposed a series of measures aimed at increasing the research and innovation impact of public procurement. Consequent actions include the production by the Office of Government Commerce of a guide on "capturing innovation". The National Health Service is a leading example of efforts to change practices. Also in 2003, the Irish Science and Technology Policy Agency, Forfás, carried out a scoping study on Public Procurement for Increased Innovation, while the Spanish foundation, COTEC, produced a report on "Public Procurement and Technology".

¹⁵ Edquist, C., & Hommen, L., & Tshipouri, L. (eds) (2000): Public Technology Procurement and Innovation, Kluwer Academic.

In the Netherlands, an internal group of experts from the government is defining the potential of state procurement with respect to innovation policy, and in Germany the "Impulse Group Innovation Factor State" is working on the possibility of promoting innovation dynamics from the market place by adjusting procurement practice in general, as well as through strategic procurement measures in selected technology areas.

At European Union level, the emphasis has been upon the link between procurement and perceived underinvestment in R&D by business. Following the work of an expert group¹⁶, procurement for innovation was incorporated as an element of the European Commission's Research Investment Action Plan¹⁷. This seeks to promote the implementation of measures to support the objective set by the European Council in March 2002 (Barcelona Objective) of raising European R&D expenditure to 3% of GDP by 2010, with the additional objective of increasing private funding of R&D from 55% to two-thirds of total R&D expenditure. The Action Plan has proceeded both through Commission actions and through the Open Method of Coordination, operating via CREST, a committee which co-ordinates Member States' R&D policies¹⁸. A specific process is underway to support the development and diffusion of information, for example on the best available technologies for public buyers, and there is an initiative to set procurement in the broader context of 'policy mixes,' in order to exploit its synergies with other research and innovation policies, for example technology platforms. Specific follow-ups included two studies on good practice and a planned handbook,¹⁹ but these are only necessary first steps.

3.3 Necessary conditions for success in procurement for innovation

New EU directives have created opportunities for public authorities to purchase innovative solutions, with key changes including:

- Opportunities for technical and competitive dialogues between purchaser and supplier, a necessary condition if each side is to understand the other;

¹⁶ Georghiou et al, Raising EU R&D Intensity: Improving the Effectiveness of Public Support Mechanisms for Private Sector Research and Development: Direct Measures 2003, EUR 20716.

¹⁷ Commission of the European Communities, Research Investment Action Plan, 2003.

¹⁸ Committee for Scientific and Technological Research, composed of official representatives of Member States and other European countries associated with the Framework Programme.

¹⁹ Actions include an expert group report: Wilkinson R. et al, Public procurement for research and innovation, DG Research, September 2005, EUR 21793 and a study forming the basis of a Handbook on raising the technological and innovative intensity of publicly procured goods and services.

- The facility to specify requirements in terms of functional performance or standards, which allows suppliers to produce any configuration of technology they feel can meet a given need;
- Options permitting variants, thus opening up bids to alternative ideas; and
- Conditions that allow the transfer of intellectual property to suppliers, hence allowing them to exploit their innovations in wider markets.

However, to reap the benefits of these changes, actions are required. Demand needs to be co-ordinated or aggregated to create sufficiently large orders to make innovation worthwhile. On the other hand, opportunities need to be opened up for innovative SMEs to bid for parts of larger packages. A key to successful procurement for innovation is the “intelligent customer,” who is aware of potential new solutions and can specify and manage contracts of this kind throughout their lifecycle. This means actions to develop a cohort of trained professionals and to support them through networks in exchanging ideas and raising skill levels. It also means a new attitude to risk among public authorities, matched with an emphasis on the whole-life costs of their purchases rather than the lowest price at the point of purchase. National and European Agencies should assume the role of lead market customers.

Care also needs to be taken to avoid the pitfalls of a procurement-led policy, notably the risk of letting “national champions” emerge, or as noted above in the discussion on lead markets, of unnecessarily over-specifying the public requirement to the point that little scope exists for extension to other markets.

4 EVOLUTION OF PRESENT POLICY FOR DEMAND-SIDE MEASURES

Following some of the European studies and reports mentioned above, in November 2004 the “Kok Report” on the Lisbon strategy recognised that procurement could be used to provide pioneer markets for new research and innovation-intensive products. The March 2005 European Council endorsed the mid-term review of the Lisbon strategy and the proposal to make jobs and growth its central focus, while explicitly calling for Member States to refocus public procurement on innovative products and services.

As a central plank of its recommendations, the Aho Group report, while endorsing the “horizontal” measures designed to create more innovation-friendly markets, also proposed large-scale strategic actions to provide an environment in which supply-side measures to raise investment in research and innovation could be combined with the process of creating demand and a market. The

Group identified several examples: e-Health, Pharmaceuticals, Energy, Environment, Transport and Logistics, Security and Digital Content. They call for an independent High Level Co-ordinator to be appointed to orchestrate European action in each area across Member States, different parts of government and the Commission, business, academia and other stakeholders.

The Spring Council made a positive response to *Creating an Innovative Europe*, stating that:

A comprehensive approach to innovation policy can be achieved by supporting markets for innovative goods and services and excellence in research in new technologies, including information and communication technologies (ICT) and eco-innovations.

Since then, the concept of demand-side innovation policy has been high on the European agenda, during the Finnish Presidency as already noted, and in numerous Commission and business-sponsored reports culminating in a clear endorsement in the Commission's Communication on innovation strategy which "introduces a more focussed strategy to facilitate the creation of areas for action, and in particular introduces a more focussed strategy to facilitate the creation and marketing of new innovative products and services in promising areas – the lead markets"²⁰.

5 FUTURE POLICY

We began this essay by emphasising that innovation is currently a distributed activity proceeding at an ever faster pace under highly competitive conditions. Both the critical importance and the overall deficiency of European innovation performance were stressed. While *Creating an Innovative Europe* identified a need for action on multiple fronts, its central recommendation was the need to create markets friendly to innovation in Europe. The issue then is what public policy measures are needed to foster this (in addition to actions by industry and others)? We have noted the potential of systemic approaches such as cluster policies, of improving the setting of standards and of the benefits of using regulation. Public procurement is proposed as a major instrument by which government can provide a pull-through for innovation.

²⁰ COM(2006) 502 final, Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions, Putting knowledge into practice: A broad-based innovation strategy for the EU.

The common factor amongst all of these demand-side measures is the central importance of co-ordination. No demand-side policy can flourish without bringing together the full range of innovation actors involved in the construction of future markets. These include customers, suppliers and regulators, with other stakeholders also playing significant roles. This represents a much greater challenge than measures targeted solely at R&D performers or intermediaries. Not only are there far more actors to be engaged, but many of them are not sensitised to innovation as an issue, let alone as a priority.

The necessary broader engagement has its analogue in the governance of innovation. It ceases to be the sole preserve of research or industry ministries (important though their contributions are) and instead becomes a shared responsibility right across government. Most of the regulations and procurement requirements we have discussed emerge from sectoral ministries. While there is no single model of how joined-up government can be achieved, it is a challenge to all European governments to begin by realising this at national level and then engaging in co-ordination at European level.

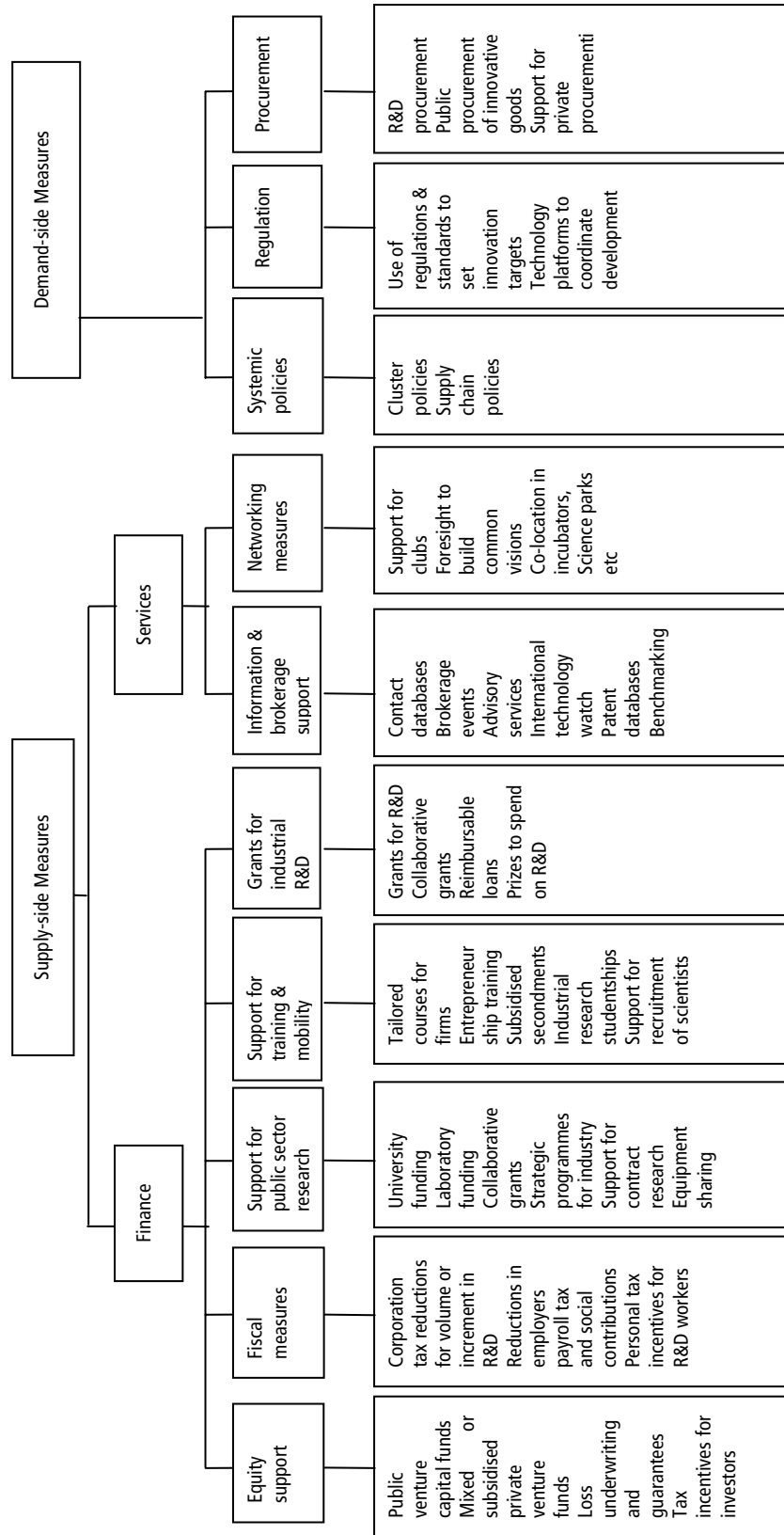
The measures suggested in recent policy documents are primarily of a horizontal nature and, while such developments are absolutely necessary, a strong implementation challenge remains. In a climate of rising expectations on the part of business, governments need to take bold and large scale actions which capture the imagination of those engaged in innovation and the interest of the public at large. It is here that we may return to the vertical measures proposed in the Aho Group report, involving the appointment of high profile co-ordinators in key sectors of opportunity (and of course giving them the necessary subsequent support to do their job).

Symbolic action is needed. At a minimum, two key areas should be selected (preferably on a competitive basis to ensure sectoral commitment) for an immediate launch of large scale pilot projects in the creation of an innovation friendly market. Perhaps one should have ICT at its core and the other the health sector, but this is not essential. For the sake of speed, these projects could well be based on current technology platforms but it must be recognised that they too must transform their thinking to encompass the broader business picture. The appointed co-ordinator should then, within a period of six months, report back to Europe's leaders on a priority agenda for the market to be invigorated in Europe. The Commission and Member States should be prepared to enact fast track legislation where the related needs are clearly demonstrated. Within these actions, aggregating demand must be a core feature.

Symbolic actions may also be achieved within horizontal measures if European leaders are willing to cut through the mire of reputation-damaging long-term disputes and, for example, announce that under any circumstances agreement will be reached on a European patent framework and other outstanding intellectual property agreements within, say, 6 months.

Some may urge caution and confuse demand-side policies with past failures in “picking winners”. As argued above, this is muddled thinking – we stress once more that here it is the competitive arenas that are being picked, not the firms or technologies which will win the challenge they present. In all cases, they are markets which industry itself has already identified as critical to its future and it is market forces which will drive innovation forward. Creating innovation-friendly markets is a means of progressing Europe’s internal market and as such touches on the very core of the European Union’s historical trajectory.

Figure 3 Taxonomy of Innovation Policies



Framework Conditions - Human Resources and Employment Conditions, Science Base, Regulatory Framework (including State Aid, Competition and IPR), Fiscal Environment

EDUCATION AND ECONOMIC GROWTH: A BRIEF REVIEW OF THE EVIDENCE AND SOME POLICY GUIDELINES

Angel de la Fuente¹

Summary

Recent cross-country research on the determinants of economic growth finds large social returns from education in European countries and suggests that investment in human capital should be accorded greater priority as part of a European strategy for promoting growth without sacrificing social cohesion.

The available evidence from the microeconomics of education provides some guidance for targeting efforts in this area efficiently. The literature suggests, first, that providing the right incentives for all participants in the education process is probably much more important than increasing resource inputs. Secondly, it intimates that returns are likely to be highest in the case of early interventions, particularly when they focus on youngsters from disadvantaged socioeconomic backgrounds, because they can at least partially compensate for an unfavourable family environment at an age that is critical for the acquisition of basic skills.

Hence, priority should be given to pre-school education and to incentive-improving measures, such as the introduction of standardised examinations, the publication of school performance indicators, increased school autonomy in certain areas, performance pay for teachers, and greater school competition and parental choice.

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1 INTRODUCTION

Human capital is a broad and multifaceted concept encompassing many different types of investment in people. Health and nutrition are certainly an important aspect of such investment, particularly in developing countries where deficiencies in these respects may severely limit the population's ability to engage in productive activities. In advanced countries, however, the key aspect of human capital has to do with the cognitive and non-cognitive abilities that are acquired at home, in the work place and in formal and informal training and which are useful in the production of goods, services and further knowledge.

The first part of this paper briefly surveys the findings of a very extensive literature that provides evidence that skills are one of the primary determinants of wages and labour market outcomes at individual level and of the level and growth rate of productivity at national level. Hence, investment in people is both a crucial growth factor, particularly in the current context of rapid technological change, and a key instrument for enhancing social cohesion. As a result, educational policies and other public actions that influence the level and distribution of skills are potentially among the most effective levers that governments have at their disposal in promoting economic progress and an equitable income distribution.

Recent estimates of the growth effects of human capital imply rather large social returns on educational investment in European countries and suggest that investment in education and training should be accorded greater priority as part of a European strategy for promoting growth without sacrificing social cohesion. These findings, however, provide very little guidance for the detailed design of human capital policies. To try to identify the key elements of an efficient strategy in this area, the second part of the paper draws on microeconomic evidence from the economics of education to advance two broad proposals that may help improve the efficiency of European educational systems.

2 HUMAN CAPITAL AND PRODUCTIVITY: A BRIEF REVIEW OF THE EMPIRICAL EVIDENCE

There is good reason to expect that human capital should be an important determinant of productivity, both at individual and aggregate level, and that its role should be particularly crucial in today's globalised knowledge economy. Workers with greater problem-solving and communications abilities should perform better than their less skilled counterparts at any task that requires more than the routine application of physical labour and will also learn faster and adapt better to changing circumstances. Hence, skilled workers can be expected

to be more productive than unskilled ones for any given production process, and should be able to operate more sophisticated technologies that place greater demands on their capacities. If the possession of skills does entail a greater ability to learn, produce new knowledge and adapt to change, a more educated labour force will also be able to achieve faster productivity growth, both through gradual improvements in existing production processes and through the adoption and development of more advanced technologies, and should be in a better position to respond flexibly to intensifying worldwide competition.

These considerations suggest that the importance of human capital as an input has grown over time as production processes have become increasingly knowledge intensive and footloose. Today, relatively few occupations involve only mechanical physical tasks, and a large and growing fraction of jobs either reduce to the processing of information or require the application of specialised knowledge and skills to the production of increasingly sophisticated goods and services.² This is also true in relation to the production of the applied knowledge that underlies technical progress, which has gradually become more reliant on explicit R&D activities, more closely intertwined with formal science and, as a result, increasingly skill intensive. In addition, falling transportation and communication costs have opened up more and more activities to foreign competition, increasing the pace of structural change and putting a growing premium on the innovative capacity and adaptability of firms and workers.

There is a lot of academic work that broadly supports the hypotheses I have just set out. At the microeconomic level, the very extensive literature that has analysed the impact of educational attainment on individual wages and other labour market outcomes leaves very little doubt that schooling has significant and quantitatively large positive effects on earnings, labour force participation rates and employment probabilities.³ Recent research suggests that an additional year of schooling increases wages at individual level by around 6.5% across European countries and that this effect can be as high as 9% in EU members with less regulated labour markets, where pay scales presumably reflect productivity more closely (Harmon et al, 2001). Taking into account the employment effects of education, these estimates imply private rates of return on schooling that cluster between 7.5% and 10% for most European countries (de la Fuente and Jimeno, 2004). There is also evidence of the large and

² A recent OECD (1999) study finds that over half of the combined output of its member countries is produced in knowledge-intensive industries. These include not only advanced-technology manufacturing sectors such as ICT, but also intensive users of new technologies and of skilled labour, such as finance, insurance and communications services.

³ Wage equation studies have generally adopted the specification proposed by Mincer (1974). Psacharopoulos and Patrinos (2002) collect the results of such studies for a large number of countries and Card (1999) surveys the relevant literature focusing on estimation issues. On the impact of education on unemployment, see among others Ashenfelter and Ham (1979), Nickell (1979) and Mincer (1991).

significant wage and employment effects of basic literacy and numeracy skills, even after controlling for school attainment.⁴

At the macroeconomic level, academic economists have traditionally been optimistic about the contribution of education to economic development and have often assigned a central role to the accumulation of human capital in formal models, particularly in the recent literature on endogenous growth. The results of empirical cross-country studies on the determinants of economic growth have been largely consistent with this view. Landau (1983), Barro (1991) and Mankiw, Romer and Weil (1992), among other authors, find that a variety of educational indicators have the expected positive effect on output levels. Some of the relevant papers find rather clear indications that the level of education is an important determinant of the rate of technological progress and that this positive rate effect seems to work, at least in part through the role of education in facilitating the absorption of foreign technologies (see, for instance, Engelbrecht, 1997).⁵

During the second half of the nineties, however, a new round of empirical papers produced rather disappointing results on the effects of schooling on aggregate productivity. Unlike most previous studies (which relied on cross-section data to analyse the determinants of growth over long periods), most of these papers used pooled data at relatively short frequencies and relied on either panel techniques or the use of differenced specifications to control for unobserved country heterogeneity. In this setting, educational variables are often found to be insignificant or even enter with the "wrong" sign in growth regressions (see for instance Benhabib and Spiegel (1994), Islam (1995), Caselli et al. (1996) and Pritchett (1999)).

While some researchers have been willing to take such counterintuitive results at face value and have even started to consider seriously the reasons why educational investment may not contribute to productivity growth (see in

⁴ See among others Boissiere et al. (1985) and McIntosh and Vignoles (2001).

⁵ The literature suggests that a country's stock of human capital can be expected to have a positive effect both on its *level* of productivity and on its *rate* of technical progress. In practice, it has proved rather difficult to separate these two types of effects, with different studies reaching opposite conclusions about their relative significance. This may be partly an estimation problem, since the high correlation between schooling levels and growth rates and of these variables with other regressors can make it difficult to untangle their separate effects in a growth regression. But there are also plausible theoretical specifications according to which the two effects may be difficult to identify separately. In particular, the distinction between them tends to become blurred once we allow for technological diffusion. In this context, an increase in human capital does make for faster technological change, but this effect gradually exhausts itself as the country comes closer to the world technological frontier and total factor productivity growth stabilises. As a result, the rate effect becomes a level effect over the medium or long run and, if convergence with the "technological equilibrium" is sufficiently fast, the two effects cannot be separated.

particular Pritchett, 1999), many others have been rather sceptical (see for instance Barro, 1997). These authors have tended to attribute negative results on schooling and growth to various econometric and specification problems and to poor data quality. Measurement error, in particular, has been widely recognised as a potentially important problem for two reasons. First, because the series of average years of schooling commonly used in the literature are likely to contain a lot of noise and, second, because years of schooling can be expected to form a very imperfect measure of skills in any event. The first problem, in addition, is likely to be particularly important in a panel setting, where parameter estimates rely heavily on the time-series variation of the data, because measurement error arising from changes in classification and data collection criteria tends to generate a lot of spurious volatility in the schooling series, making it difficult to identify the contribution of education to productivity growth.

The research carried out over the last few years strongly suggests that the negative results found in the previous literature can indeed be largely attributed to deficiencies in the human capital data used in earlier studies. Papers that make use of improved data sets on attainment or allow for measurement error find that increases in schooling do indeed have a substantial impact on productivity growth. Results are generally even stronger and sharper when direct measures of skill levels are used to proxy for human capital, suggesting that improvements in the quality of schooling can have an even greater effect on aggregate output than increases in its quantity.

Krueger and Lihdhal (2001) show that the amount of noise in the most widely used schooling data sets is large enough to explain some of the most widely cited negative findings on human capital and growth as the result of measurement error. De la Fuente and Doménech (D&D, 2001 and 2006) and Cohen and Soto (2001) draw on previously unexploited sources of information to construct new attainment series that appear to contain a considerably smaller number of measurement errors. Both sets of authors find that the use of these refined data leads to very significant improvements in the performance of schooling indicators in several standard growth specifications. De la Fuente and Doménech (D&D, 2006) use an extension of the classical errors-in-variables model to correct the bias induced by measurement error. Their corrected estimates of the coefficient of schooling in an aggregate production function are around twice the size of what may be considered the consensus value of this parameter in the earlier literature.

The results of these papers indicate that the contribution of schooling to aggregate productivity growth is at least of the size implied by microeconomic estimates of wage equations and may be considerably larger, suggesting that human capital accumulation may be the source of important positive

externalities at the aggregate level which are likely to be related to the role of education in promoting the development and absorption of new knowledge. There remains, however, considerable uncertainty regarding the size of these externalities, both because the existing range of estimates of the relevant parameter is broad, and because it is quite likely that some of these estimates may be biased upwards due to a reverse causation problem that reflects the feedback effects of rising income on the demand for education (see, for instance Bils and Klenow, 2000).

Another interesting development is the use of direct measures of skills which are likely to be better proxies for human capital than years of schooling. While such data are still somewhat scarce, some recent papers suggest that this is likely to be a rather fruitful line of research. Hanushek and Kimko (2000) construct an indicator of labour force quality using mean country scores in a number of international student achievement tests in mathematics and science, while Coulombe et al (2004) use data drawn from IALS, an international study on the skill level of the adult population conducted by the OECD and Statistics Canada.⁶ In both cases, the results of growth regressions point to even larger output effects than those obtained using even revised attainment data. These estimates imply that the return on improvements in schooling quality could be extraordinarily high, for not only are their expected benefits large, but the relevant costs will generally be much lower than those of increasing attainment for they do not involve a further sacrifice of student time and output.

The social return to schooling investment

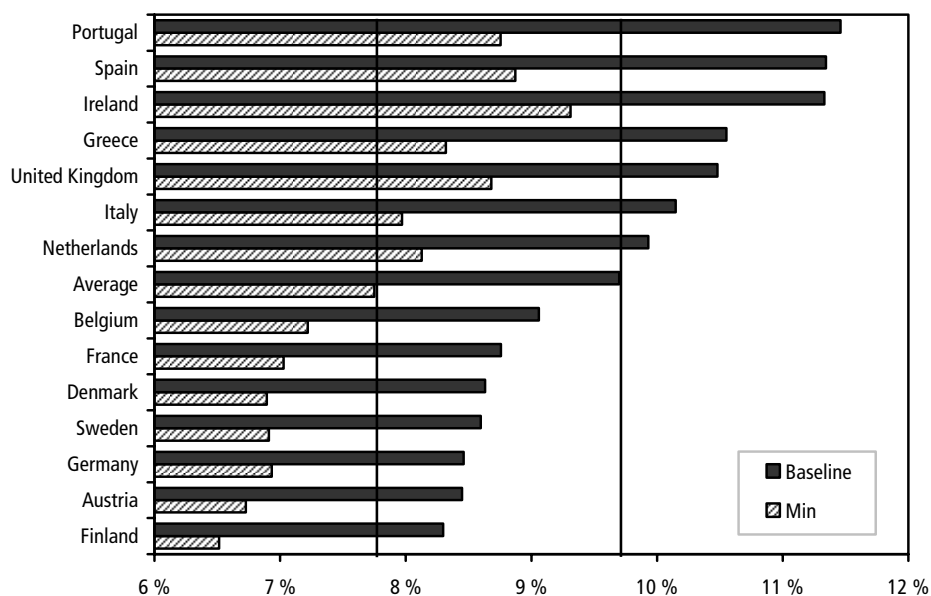
The recent studies I have briefly discussed point to strong growth effects from human capital which in turn imply rather respectable social rates of return on investment in schooling. Drawing on D&D's (2006) results, I estimate that an additional year of average school attainment raises productivity in the average EU country by 6.2% upon impact and by a further 3.1% in the long run through its contribution to faster technological progress (de la Fuente, 2003).⁷ The first of these effects is considerably higher in the cohesion countries and in Italy,

⁶ The IALS study is of great interest in itself because it provides what is probably the best available cross-country data on the skill level of the adult population. An important finding of this study, which points to a formidable policy challenge, is that a considerable fraction of the adult population of advanced industrial countries lacks basic literacy and numeracy skills.

⁷ These estimates also imply that human capital accumulation accounts for 21% of observed productivity growth in the average OECD country over 1960-90 and that cross-country attainment differences within the same sample explain 42% of observed productivity disparities in 1990. Hence, human capital is relatively more important in accounting for remaining productivity differentials than in explaining past growth. The reason for this is that the stock of physical capital has grown more rapidly than average years of schooling and has converged at a faster pace across countries, thereby reducing the contribution of this factor to observed productivity differences.

reaching 9.2% in the case of Portugal, and drops to around 5% in the Scandinavian and German-speaking countries.

Figure 1 Social rate of return on schooling in the EU.



These figures are then combined with rough estimates of the relevant employment effects to obtain the baseline estimates of the social return⁸ on a marginal increase in school attainment in EU member states that are shown in Figure 1. The figure also shows a conservative (min.) estimate that is based on D&D's raw estimates of the human capital parameter, without correcting for measurement error.

According to my baseline estimates, the social rate of return on schooling in the EU ranges from 8.3% in Finland to 11.5% in Portugal, with an average value of 9.7%. Under the more pessimistic (min.) assumption on the size of the growth effects of schooling, the average return drops to 7.75% and the lowest return to 6.5%. Under both assumptions, estimated returns on human capital are highest in the cohesion countries and the UK, and lowest in the Scandinavian and German-speaking countries.

It is worth noting that the social return on human capital appears to be higher than the return on physical capital in all EU15 countries. This suggests that a

⁸ The social rate of return on schooling is defined as the discount rate that equates the present value of the increases in output induced by a marginal increase in average attainment to the present value of the explicit and opportunity costs of schooling. For further details, see de la Fuente (2003).

marginal reallocation of investment resources in favour of education would be socially desirable. The social premium on human capital, defined as the difference between the estimated rates of return on human and physical capital, varies across member states, reflecting the relative endowments of production factors, and appears to be largest in Finland, Italy, Denmark, Greece, the Netherlands, Spain and Ireland, and smallest in the UK, Austria, France, Belgium and Portugal.

3 POLICY ISSUES AND RECOMMENDATIONS⁹

The figures I have just presented are estimates of the social return on marginal increases in the quantity of education, as measured by average years of schooling. They suggest that, provided this could be achieved without increasing the average cost or reducing the quality of schooling, practically all EU countries would benefit from an increase in the level of education of their population, even if it comes at the expense of a reduction in other types of investment. Other things being equal, returns on improvements in the quality of education are likely to be significantly higher, for they do not involve increases in the opportunity cost of schooling.

Hence, there is probably a good *prima facie* case for devoting additional resources to increasing both the quantity and the quality of education. There is still considerable room for improvement along the first of these dimensions, particularly in some of the poorer countries and regions of the Union, where enrolment in upper secondary training is still far from universal and tertiary accession rates remain relatively low. But there can be little doubt that in the long run the more relevant policy margin has to do with the quality of education, as we must eventually run into sharply diminishing returns with respect to further increases in attainment.¹⁰

The formulation of policies that can increase student performance is, however, a difficult issue – and one for which the cross-country aggregate studies I have focused on in the previous section offer very little guidance. There is, however, a considerably body of microeconomic research on the economics of education that provides at least some general guidelines for setting policy

⁹ This section draws heavily on Wössman and Schütz (2006). This paper is a report for the European Commission prepared by more micro-oriented colleagues at EENEE (European Expert Network on the Economics of Education).

¹⁰ Econometric estimates of aggregate production functions do not suggest sharply decreasing returns with respect to increases in average attainment at observed schooling levels. Even so, rates of return on schooling will fall as youngsters stay longer in school, because their working lives will shorten. In addition, sharply diminishing returns are bound to set in once attainment reaches a certain level. It seems very unlikely, for instance, that the entire population will have the aptitude required to benefit from advanced training.

priorities. Its main lessons can be summarised by two propositions. First, providing the right incentives for all participants in the education process is probably much more important than increasing resource inputs, at least in advanced countries where expenditure levels are already quite high. And second, returns are likely to be highest in the case of early interventions, particularly when they focus on youngsters from disadvantaged socioeconomic backgrounds.

The determinants of the quality of schooling

Economists tend to think of education as a standard production process in which different types of inputs (teacher and parent time, school facilities, learning materials...) are combined in a mechanical way to produce an output that may be measured by test scores or some other achievement measure. Once this perspective is adopted, it becomes rather tempting to think that any desired increase in achievement can be obtained by putting enough money into the system. Indeed, many discussions about educational policies implicitly accept this principle and focus on the need for additional resources in order to reduce class sizes, buy more computers, reduce university tuition fees or increase the volume of student grants.

Unfortunately, things do not seem to be that simple. A considerable amount of work in the recent literature suggests that increasing resource inputs does not necessarily translate into improved student performance. In spite of large increases in expenditure per student and falling class sizes, student achievement shows no discernible improvement in the US or other OECD countries, and actually falls significantly in many cases over the last few decades (Hanushek, 2003 and Gundlach et al, 2001). There is also no clear correlation across countries between average student performance in standardised achievement tests and expenditure levels.¹¹ Finally, microeconomic estimates of educational production functions with different student samples show mixed results at best, with a preponderance of insignificant or "wrong-signed" estimates of resource coefficients (see Hanushek 2003 for a meta-analysis of such studies and Wöessmann 2003 and 2005 for two careful studies of the subject using two large international student samples). While the issue is not entirely settled because the likely endogeneity of resource allocation within and across schools makes it difficult to isolate the causal impact of class size and other measures of resource input on student performance,¹² Heckman (2000)

¹¹ Hanushek (2003) and Hanushek and Kimko (H&K 2000) conclude that standard measures of school resources do not have a perceptible effect on the quality of schooling as measured by achievement tests. Lee and Barro (2001), on the other hand, find a positive correlation between test results and some expenditure variables.

¹² For conflicting results and points of view, see among others Hanushek (1986 and 2003), Card and Krueger (1996) and Krueger (2002).

argues that, even if we accept the most optimistic estimates of the effects of student/teacher ratios on future earnings that can be found in the literature, reducing class size would be an inefficient policy with negative expected net returns.

On the whole, then, it seems unlikely that indiscriminate increases in resource inputs will be of much help in raising academic standards in Europe.¹³ A number of authors have argued that a more promising alternative would be to focus on providing the right incentives for students, teachers and school administrators and on increasing parental choice and competition among schools. One measure which seems to have a substantial positive effect on the incentives of educational agents is the introduction of standardised curriculum-based exit examinations, coupled with the publication of mean scores and value added measures for each school. Bishop (1997) finds that centralised exams have substantial positive effects on student performance both across countries and across Canadian provinces. Hanushek and Raymond (2003) also report positive results in connection with the introduction of school accountability systems by different US states. Wöessmann (2003) confirms these findings using a large student sample drawn from 39 countries. This author also finds that, particularly in countries that administer centralised exit examinations, school autonomy in certain areas but not in others appears to have a positive effect on student performance. He finds, in particular, that school autonomy in personnel and process decisions, and teacher autonomy in the selection of teaching methods appear to have positive effects by allowing schools to draw on their superior local knowledge. On the other hand, he argues that centralised control over budgetary and curricular matters should be maintained in order to prevent opportunistic behaviour aiming to reduce workloads or extract rents.

Other measures that have been found to have positive effects on academic performance, presumably through an incentives channel, include performance pay for teachers, increased competition by privately managed (but not necessarily privately funded) schools and increased choice by parents in the selection of schools through vouchers and similar schemes (see Hanushek 2003, Heckman, 2000, Wöessmann and Schütz, 2006, and the references therein). Various authors, however, also warn that designing incentives correctly is difficult and that schemes that are not well thought out may have adverse side effects (see for instance Hanushek 2003 and Ladd and Walsh, 2002).

¹³ One exception of sorts to this pattern of findings has to do with teacher quality. Hanushek (2003) and Wöessman and Schütz (2006) review some evidence that suggests that this factor has a very great effect on student performance. They also note, however, that measured teacher performance is extremely hard to relate to observable characteristics such as level of education or experience.

A lifecycle perspective on skill formation

The acquisition of cognitive and non-cognitive abilities is an ongoing process in which skills acquired early on become a crucial input in further learning. In a number of papers, Heckman and various co-authors (see among others Cunha et al, 2005, and Heckman, 2000) have developed a lifecycle model of skill formation that incorporates the available evidence on the characteristics of the learning process available from economics and other disciplines and on the returns on investment in human capital at various stages in life and for different socioeconomic strata. They emphasise that the process of learning begins very early and is heavily influenced by family environment, that there are critical periods for the acquisition of certain basic skills, and that certain abilities crystallise rather early and are difficult to modify later on.

Heckman's model and his review of the empirical evidence provide some useful guidelines for the allocation of educational resources across age and income groups. One important prediction of the model, which appears to be born out by the available evidence, is that the return on investment in human capital will decrease with the individual's age in a way that can be expected to vary systematically across socioeconomic strata. Returns will fall in all cases because early learning will facilitate the acquisition of further skills and because the period over which the investment will produce a flow of returns will shrink as the individual becomes older. Returns to very early (pre-school) investment can be expected to be very high for children of disadvantaged families because intensive interventions early on can at least partially compensate for an unfavourable family environment at an age that is critical for the acquisition of basic skills.¹⁴ In the absence of such compensatory interventions, however, the return on further investment in disadvantaged children falls sharply with age as ability deficits build up, and drops below those on investment in better-off children at relatively young ages. As a result, there is a clear trade-off between equity and efficiency at later ages, but not for young children.

Heckman and co-authors make a persuasive case for energetic early interventions targeted at disadvantaged groups as a way of promoting both efficiency and equality of opportunity.¹⁵ Some of the evidence they present

¹⁴ There is considerable evidence that intensive early interventions have substantial and long-lasting effects. In addition to Cunha et al and the references therein, see for instance Barnett (1990 and 1995) and Goodman and Sianesi (2005).

¹⁵ Schuetz et al (2005) reach similar conclusions in an interesting paper where they construct an index of (in-) equality of opportunity for over 50 countries using the estimated influence of family background on student performance. They then explore the determinants of such an index across countries and conclude that countries with high enrolment in long pre-school cycles tend to provide greater equality of opportunity. They also find that early tracking (i.e. the early separation of students into different types of schools on the basis of their performance) has a negative effect on equality of opportunity.

suggests that attempts to remedy early educational deficits later in life are both ineffective and expensive, and that such deficits, rather than short-term borrowing constraints, are the main obstacle to university attendance by children of low-income families. All this suggests that getting children from disadvantaged families very early into a comprehensive pre-school system that goes beyond day care may be essential for preventing the early build up of ability deficits that are likely to have important long-term consequences. By contrast, some of the measures that are frequently advocated to facilitate university attendance by low-income students, such as heavily subsidised tuition fees, may be of only limited effectiveness.

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INTELLECTUAL PROPERTY RIGHTS IN EUROPE – WHERE DO WE STAND AND WHERE SHOULD WE GO?

Dietmar Harhoff

Summary

Intellectual property rights (IPRs) have recently been subject to numerous, sometimes highly controversial, debates in Europe. An arcane technical matter prior to the 1990s, the design of IPR systems now attracts attention, not only among the users of the respective IPR systems, but also more broadly among the citizens of Europe. It is generally accepted that IPRs can play an important role in fostering innovation, but the design choices for IPR systems remain contested. Some of the renewed interest stems from the perception that over the last few decades, IPR systems have strengthened the position of rights owners over those of the users of protected subject matter. This chapter argues that this perception is at least partly correct. In the field of copyright, technical and legal developments have contributed to a shift of control towards commercial content providers. In the area of patent rights, changes in the behaviour of applicants have led to strong increases in the demand for patent protection, coupled with some signs of quality deterioration in the patent system. While Europe may have fared relatively well when compared to the US, problems are emerging in the EU as well. From an economic perspective, there is a need to harmonise European administrative and legal practices in the area of IPRs while increasing the quality standards used in these systems. Moreover, a new balance between the owners of rights and users of the protected subject matter needs to be struck in many fields.

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1 THE ASCENDENCY OF INTELLECTUAL PROPERTY

1.1 The Role of Intellectual Property in the Knowledge Economy

With its Lisbon Agenda, the European Union has developed a future vision of a region focusing on learning and innovation in order to maintain high levels of productivity and wealth. To achieve these objectives, EU policies will need to foster innovation and encourage investments in new and more efficient products, processes and organisational routines. Intellectual property plays an important role in this vision and in several areas the EU has embarked on a course intended to strengthen rights that support innovation. But this course of action has met with a less consensual reaction from the general public. From an economic perspective, some aspects of past developments call for a more cautious and balanced policy approach. This essay outlines a few areas in which the controversies have been particularly strong, and where prudent policies are needed most urgently.

As tangible assets lose their capacity to generate above-normal returns and as low-cost labour production becomes widely available across the globe, many corporations are turning to intangible assets as a source of reliable competitive advantage. These assets include the quality of the workforce, innovative products and processes as well as new ways of organising business activities and processes. Intellectual property rights (IPRs) refer to those intangible assets that are legally secured through some right which entitles the owner to exclusive use of the protected matter. The frequent use of the term "intellectual property" is relatively recent, although particular IPRs such as copyright and patent protection date back several centuries.

Frame 1 Intellectual Property Rights

Intellectual property rights (IPRs) refers to rights which bestow upon their owners the right to exclude other parties from the use of a particular intangible asset. IP rights include patents, copyrights, trademarks, trade secrets, industrial designs, databases and other types of rights. Particular laws delineate the exclusive rights bestowed upon the IPR owner. For example, the owner of a copyright may prevent other parties from copying a creative work such as a book or a photograph. The owner of a patent right may exclude other parties from using an invention that is described in the patent.

While the analysis and design of IPR rights and systems was an arcane, technical topic reserved for the attention of a few experts throughout most of the 20th century, recent developments have led to intense public debates and controversies as to how these rights should be designed. Examples of such controversies in Europe include debates on copyright and Digital Rights Management (DRM) systems, on the protection of computer software through

patents and/or copyright, and the extent of patent protection for biotechnological inventions.

Such strong public attention has not been accorded to IPR issues since the period between 1850 and 1875 when public debates in Europe focused on the question of whether to introduce or maintain patent systems at all. That period saw a number of policy reforms and experiments: for example, the Dutch government abandoned its patent system completely in 1869, only to reintroduce patents several decades later. Irrespective of the particular IPR type, the current debates have a number of common themes. They all focus on the balance between IPR owner rights and the rights of other parties. Moreover, since the TRIPS² agreement has increased the extent of international harmonisation of IPR systems, the question as to which elements of IPR systems should be adopted and how they should be designed is also pertinent in many developing countries.

As in earlier periods, new technologies have presented a major challenge to IPR laws and institutions. The advent of digital technologies and biotechnological engineering has numbered among such challenges. Partly as a response to these changes, the reach and scope of IPRs has been uniformly expanding over recent decades. New subject matter now falls under the protection of IPR rights, and some subject matter that was not covered by them in the past is now subject to protection. In many jurisdictions, the rights of IPR owners have been strengthened in comparison to the rights of other parties. Completely new IPRs (such as for database protection) have been devised. These changes have given rise to a number of policy issues.

1.2 Important Policy Issues

Contrary to many claims, IPRs are not identical to property rights over physical property such as a house or a car, neither in legal nor economic terms. From an economic perspective, all IPRs are *granted* by governments to their owners for a limited period – 20 years for patents, and 70 years (after the death of the creator) for copyrights.³ Such restrictions are unheard of for any other kind of property. Intellectual achievements covered by IPRs differ from other economic goods for a very important reason – consumption of the protected good is typically non-rival, and intellectual achievements have public goods characteristics. The knowledge protected by a particular patent could benefit many citizens. Yet, if instant imitation were certain, there would be little incentive for the costly creation of intellectual achievements. IPRs seek to strike

² For a detailed commentary on the TRIPS agreement, see Reichmann (2000).

³ While trademark rights can theoretically be maintained forever, a maintenance fee has to be paid and, without active use of the trademark, the right is revoked.

a balance between providing incentives to those who can produce creative works and the societal benefits from using these creations. The basic principle of all major IPRs is to grant the IPR owner an exclusion right for a limited period of time. But this simple principle betrays the complexity of the system: for example, the breadth and scope of a patent as well as its temporal extension are determined not only by the particular IPR laws, but also by the administrative practices of IPR administrators, and by the intervention of courts which ultimately decide over the infringement and validity of IPRs.

The *perpetual* question in the design of IPR systems is how to balance the position of the creator or inventor against the welfare gained by giving the public full access (under competitive supply) to the information, idea or creation protected by the IPR. IPRs that are as strong as possible for the owner are by definition harmful to society. A complete weakening of IPRs is equally likely to be harmful as the incentive function of having a temporary position of exclusive rights would no longer be in effect. But the optimal balance between the two positions depends on many factors: technology, market parameters, technological opportunities for new inventions and creations, the availability of other incentive mechanisms and many more. Changes in technology may require changes in the design of IPR systems and institutions. These developments pose tremendous challenges to the existing institutions and organisations, such as patent, copyright and trademark offices, but also to policy-makers and the public at large.

The question of balance has become particularly critical with the clear success of alternative incentive systems, in particular the open source mode of software development. In the area of open source software, licences that deliberately ensure positive externalities and little personal appropriation are in wide usage. Despite the lack of comprehensive and well defined property rights in the classical sense, innovation in open source software seems to be flourishing. Excessively strong property rights – either patents or copyrights – may very well limit the degree to which innovative users, user communities and OSS development groups can contribute to innovation. Given the increasing importance of this source of creativity, European policy-makers need to assess the ramifications of IPR design on those innovation processes that work very differently to classical ones, but that contribute to productivity growth. This question has played a prominent role in the public discussion regarding the EU Commission's proposal for a Directive on Patent Protection for Computer-Implemented Inventions.

From an economics point of view, a system in which an IPR could be tailored to a specific context would have many advantages. The balance between the countervailing costs and benefits of IPRs could be tuned very precisely to the economic context. But the notion of many specific IPR types runs into one major

objection – the costs of complexity. These are often very hard to quantify, but they need to be considered before embarking on a plan to fine-tune IPRs for their respective purposes. Concrete proposals are available, e.g. for the introduction of a European utility model patent, a registration right similar to the German *Gebrauchsmuster*. In the course of the debate on software patents, some proposals foresee the introduction of a *sui generis* right over software which would avoid some of the disfunctionalities of either copyrights or patents. And with its Database Directive in 1996, the EU introduced a completely new form of protection for database compilations (even those that were not in any sense innovative or creative, but merely required effort). Such alternatives need to be explored – but bearing the aforementioned issue of complexity and its costs in mind, and paying particular attention to convincing evidence that there is an overall economic effect in favour of innovation.

2 IPRS IN EUROPE – STATUS QUO AND RECENT DEVELOPMENTS

2.1 Patents

Patent systems are under pressure - not just in Europe, but in other countries as well. As in the US, both patent applications and patent grants at the EPO have increased much faster than R&D inputs in OECD countries.⁴ From 1990 to 2000, EPO patent applications grew from 70,955 to 145,241 (an average growth rate of 7.4 per cent per annum) while OECD R&D inputs (in 1995 real terms) increased from \$398 to \$555 billion, which reflects an average annual growth of 3.4 per cent. The actual grant rate (the share of patent applications leading to a patent grant) remained almost constant at about 65 percent for patents with application years from 1978 to 1995.⁵

Some of the welfare consequences of these developments have been discussed in a report prepared by the US Federal Trade Commission (FTC 2003). The report comes to the devastating conclusion that patents have become obstacles to innovation in some sectors. Given the prospect of such effects, it is not surprising that patent system reform has featured prominently on the public policy agenda in the US. Several other advisory panels have also recommended changes to the US patent system. A major academic study was produced by the National Academies (2003), recommending changes in the examination and post-examination stages of the patenting process as well as in the patent

⁴ OECD R&D expenditures are chosen as the comparison index since OECD country R&D composition roughly mimics the applicant composition at the EPO.

⁵ See Harhoff and Wagner (2005). Some observers have interpreted this figure as an indicator of a rather selective examination process when compared to the USPTO (Quillen et. al. 2002).

litigation system. The US Patent and Trademark Office (2003) has developed a *Strategic Plan* to deal with these challenges, and the American Intellectual Property Law Association (2004) has produced its own set of recommendations. In their call for patent reform, these organisations have been joined by a number of large corporations and SMEs.

Given the current US debate and the similarity in application growth, some questions come to mind immediately. Has the quality of applications submitted decreased with the increase in the absolute number of applications? Has the European patent system become too permissive in the sense that the EPO has issued “too many” patent grants? These questions are notoriously difficult to answer, but some indicators have been seen as signals of diminishing quality and of strategic patenting behaviour. One indicator is the number of claims, which can be seen as a measure of patent complexity. The number of claims is also an important determinant of patent office workload. Since examiners have to assess patent applications with particular attention to the claims, additional claims add to the examiner’s work and have been shown to increase pendencies. Complex claim structures can also be used to pursue strategic objectives.⁶

There is also growing concern that incoming patent applications contain more claims that are of marginal quality. Indeed, as the search reports prepared by the EPO reveal, the share of questionable claims in patent applications has been increasing. Comprehensive explanations of these developments remain scarce, but preliminary answers are emerging. Applicants in the US as well as in Europe do not seek to maximise the social returns of innovation – they are motivated by private concerns. Hall and Ziedonis (2001) have interpreted the rise in patent applications in the semiconductor industry as an arms race in which all parties seek to amass a large portfolio of patents which can be used in court if any of their rivals choose to attack. Filing one more low-quality patent application may be a rational response in an environment where everybody else is doing so, even if the additional patent is not meant to protect products or processes used by the enterprise. Heller and Eisenberg (1998) show that badly delineated, overlapping patent rights can cause problems because patent owners can block each other’s research. These and other effects are still being analysed empirically. Leaving aside the deeper reasons for changing applicant behaviour, it is clear that patent applicants in Europe have also changed their patenting behaviour. In the course of these changes, EPO patent applications have become more complex, and claims have been of lower quality than in the past. A potential explanation for such behaviour could be that applicants have to use

⁶ Some recent WO publications contain more than 10,000 claims. Whatever the specific motivation of the applicants, “claim flooding” should be considered an abuse of the system. But currently (and in particular under the PCT), patent offices can do little to counter dysfunctional applicant behaviour of this type.

more complex claim structures in order to manoeuvre in an increasingly crowded patent space. But by doing so, they may have inadvertently initiated a vicious circle of declining quality and increasing quantity.

Patent offices have responded in a variety of ways to the challenge of increasing workloads. The USPTO appears to have focused on fast processing of patents and on "patent-granting." The EPO has allowed longer pendencies to occur, but it is now under increasing pressure to reduce these, even in the face of increasing application numbers. As pressure has increased to cut down on the backlogs of applications, the criteria by which patents have been evaluated in Europe may have slipped, providing applicants with even greater incentives to file additional applications. Applications are becoming even more complex and contain more claims which are inserted in order to maintain options in an increasingly complex environment. A vicious cycle of deteriorating quality appears to have been the consequence of this development. Patent examiners as well as practitioners in patent departments are complaining about their increasing workloads.

It is conceivable that this dynamic could have been stopped or decelerated by a reduction in grant rates, but at the EPO the grant rate has remained constant even in the face of strongly increasing application numbers and falling application quality. If the quality of patent applications has been decreasing, why should patent grant rates have remained at the same, roughly constant level? While some national offices have reduced their grant rates, the current institutional framework at the European Patent Office is presumably more conducive to supporting a pro-quantity rather than a pro-quality policy. EPC member nations are represented on the Administrative Council of the EPO which is the institution's highest decision-making body. The Council has to approve major policy changes that affect, for example, the fee structure, search and examination policies, and the office's budget. Incentives favouring a *pro-quantity* policy may come into play, since EPC member nations (respectively, their national offices) receive half of the renewal fees for EPO granted patents in the respective, designated country.

2.2 Copyright

The term, copyright, describes exclusive rights which regulate the use of a particular expression of an idea or information. Historically, this right literally applied to book-printing. Copyright may nowadays cover "works" such as all forms of literary creation, paintings, drawings, sculptures, photographs, software, radio and TV broadcasts. Copyright is meant to protect the expression of ideas, not the ideas themselves. Nor is it supposed to cover concepts, facts, styles or techniques. However, all of these may be expressed in copyrighted

works. While the Paris Convention led to a first harmonisation of patent law, a similar development occurred with respect to copyrights with the 1886 Berne Convention. Under this convention, a registration of creative works is not necessary for the right to become valid. In the signatory states of the Berne Convention, foreign authors were accorded the same rights as domestic creators.⁷

In Europe, a major step towards greater harmonisation was already achieved in 1993 with the European Union copyright directive. This directive harmonised the duration of copyright protection to 70 years (after the death of the author or creator). This choice exceeded the duration in the Berne Convention. The directive also retroactively restored copyrights that had already lapsed. In this regard, the directive strongly favoured the rights of content producers relative to those of users.

The EU Directive 2001/29/EC of the European Parliament and of the Council of May 22nd 2001 on the harmonisation of certain aspects of copyright and related rights in the information society marked the next step in European harmonisation. The Directive was the European implementation of the 1996 WIPO Copyright Treaty. Widely known as the EU Copyright Directive, this legislation was also the subject of broad and controversial public discussion. The Directive provides for strong copyright protection and requires EU member countries to implement legal protection for Digital Rights Management (DRM) techniques. The implementation of the Directive into national law remains an ongoing process in a number of member countries, such as Germany and France. In Finland, the 2005 amendment to the Finnish Copyright Act and Penal Code was accepted by the Finnish Parliament and became active on Jan. 1st, 2006. These debates have also focused on questions of "fair use". In many countries, copyright law is accompanied by doctrines exempting certain uses of the copyrighted work from protection. The justification for these exemptions lies in the fact that excessive copyright protection can in principle be used to stifle civil liberties such as the right to free speech. "Fair use" is for example applicable when a critic of some literary work cites passages in order to comment upon the work itself. The Directive leaves EU member countries considerable leeway in defining other types of "fair use".

The arrival of new digital recording and transmission technologies has been the main driver of changes in copyright law. The act of copying occurs on any computer or the Internet many times. Copies can be made with no loss of quality, and at low cost. This development would suggest that the balance between rights owners and users of copyrighted works should have shifted to

⁷ Contrary to the Paris Convention, however, the Berne Convention was not signed by the US until 1989.

the latter group. But new technological developments allow for digital rights management that makes the wielding of existing copyright and contract law much more powerful. Simultaneously, an increasing fraction of copyright protected content is provided via digital media which allows in principle for unlimited copies at almost no cost and without loss of quality. However, Digital Rights Management (DRM) - made possible by means of technology routines and enforcing law (such as the Digital Millennium Copyright Act (DMCA) and the EU Directive 2001/29 EG) - can nowadays effectively limit the production and distribution of copies. DRM systems may therefore strengthen the appropriation of returns on the creation of digital products and services, thus enhancing incentives for innovation by commercially oriented parties.

Since the combination of DRM technology, copyright and contract law could effectively restrict or even prevent public access to useful information, innovation from outside and particularly from non-commercial innovators could slow down or cease completely. Furthermore, digital products and services are often associated with positive network externalities that may lead to the creation of natural monopolies. Excessive application of Digital Rights Management threatens to lock out other potential innovators, such as small firms, developing users and complementary asset owners, thereby reducing potential competition for monopolists and reducing the incentives for innovation in the area of digital products and services. This may pose difficult questions for competition policy in the EU. Finding the right balance between the innovation incentives of potential contributors is a difficult policy task, particularly since there are very few economic assessments of the social costs and benefits of copyright protection.

2.3 Other Types of IPRs

While this discussion focuses on copyright and patent protection, other realms of IP have also seen controversial debates. An important case has been the protection of databases, where the EU took the unusual step of introducing a completely new form of IPR with its DIRECTIVE 96/9/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 March 1996. This step was not accompanied by a thorough debate, and many observers continue to consider the hasty adoption of database protection as unwarranted. There is no empirical evidence to date that would suggest any positive impact of the Directive on database production activities.

Trademarks and industrial designs can be considered an area where European harmonisation has been quite successful, even if a complex parallel world of national, European and international systems continues to exist. Trademarks rarely appear in public policy discussions as they do not constitute particular problems for competition and innovation policy. Starting with Council Regulation

No 40/94 of 20.12.1993, the European Union established the Community Trade Mark Right (CTMR) which conveys on its proprietor a uniform right applicable in all Member States of the European Union. It also established the Office of Harmonization for the Internal Market (OHIM) as the central registration office for the CTMR. For trademarks, rights owners have access to a harmonised court system with a court of First Instance and a final instance for appeals. OHIM is also the registration office for (since 2001) unregistered and (since 2003) registered design rights in the EU which have been harmonised as well.⁸

3 SPECIFIC PUBLIC POLICY ISSUES AND OPPORTUNITIES

3.1 Patenting Costs and Harmonisation

Patenting costs in Europe have been a major policy concern for some time. While estimates vary, the cost of applying for and maintaining a patent in seven European countries is between 3 and 5 times higher than the comparable cost of patenting in Japan and the US. The lion's share of the cost differential is accounted for by translation, since the patent owner has to provide a translated patent document whenever the patent is validated in an EPC signatory state. While large corporations will be able to bear these costs, SMEs are possibly disadvantaged. It is important to note that these high costs put non-European SMEs seeking patent protection in Europe at the same disadvantage as European SMEs.

A number of policy proposals have addressed the cost issue, among them the Community Patent (see Frame 2) and the London Protocol (see Frame 3). In both cases, problems have again emerged due to language issues. EU member states have been extremely reluctant to agree to a proposal according to which foreign nationals can file patents covering their country in a language other than the national one. For this and additional reasons, the Community Patent initiative has essentially failed. In a recent communication, the European Commission announced that it now supports the London Protocol and the European Patent Litigation Agreement (EPLA). Prospects for the full implementation of the London Protocol look promising at this point.

⁸ See <http://oami.europa.eu/en/default.htm> for more details on both types of intellectual property rights and on the institutional evolution of the OHIM.

Frame 2 The Community Patent

The **Community Patent** was proposed by the European Commission as early as 1974. Contrary to the bundle patent granted by the EPO, which is only valid in the EPC country for which protection is requested, the Community Patent was to be a legal title in all EU member countries. Its validity would be subject to a harmonised European court system whereas validity and infringement of EPO-granted patents are subject to national laws and court systems. As the Community Patent was supposed to be translated into a limited number of languages only, a substantial cost reduction effect would emerge. In March 2003, the Council reached an agreement on critical choices regarding the Community Patent, but translation issues – both for the publication of the patent document as well as for litigation proceedings – remained controversial among EU member countries. As the conflicting views could not be resolved, the Commission finally gave up its immediate efforts to establish the Community Patent in May 2004. In September 2006, after having initiated a new consultation on IPR issues, the Commission announced that it would support the London Protocol which had long been viewed as a competing proposal.

The London Protocol is the second major proposal. Like the Community Patent initiative, it would lower the cost of patenting in Europe. By doing so, it would make patents more affordable for SMEs and independent inventors. This effect would be welcome and beneficial. But it would also enhance the overall demand for patents, and lead to further increases in the overall number of applications filed with the EPO. Given the extent of the cost reduction, a notable increase in the number of patent filings at the EPO can be expected. Considering the concerns that exist already, it is all the more important to address quality issues quickly and to counteract abusive filing strategies.

Frame 3 The London Protocol⁹

The **London Protocol** is based on Article 65 of the European Patent Convention (EPC) which allows member states to waive certain translation requirements. It is an optional protocol that will become effective once eight signatory states – including Germany, the UK and France - have ratified it or accede to it. In July 2006, ten states had approved the protocol – Denmark, Germany, Iceland, Latvia, Monaco, Slovenia, Switzerland, the Netherlands, Sweden and the UK. The French National Assembly and the French Senate have recommended the ratification of the London Protocol.

Countries which become signatory states to the London Protocol waive the requirement that European patents have to be filed in their national language. That means that patents can be validated in EPC countries which have agreed to the London Protocol even if they are not translated into the respective national language. In case of patent litigation, a translation into the national language has to be provided by the patent holder. In its recent communication, COM(2006) 502, the Commission embraced the London Protocol while maintaining the objective of a Community Patent in the long run.

⁹ See http://www.european-patent-office.org/epo/pubs/oj001/12_01/12_5491.pdf.

3.2 Courts and Litigation Systems

The future design of IPR litigation systems assumes an important role for the efficiency of IPR systems. Litigation cases are rare, although their frequency has been increasing lately, in particularly in the US. But these rare cases of legal controversy are important because the court rulings emanating from these instances guide patent offices, applicants and third parties with respect to important decisions, for example on examination, infringement and patent filing strategies.

Frame 4 The European Patent Litigation Agreement (EPLA)¹⁰

The EPLA is a proposed optional agreement and foresees the establishment of a new international organisation, the European Patent Judiciary (EPJ). The EPJ would have the European Patent Court (with a Court of First Instance and a Court of Appeals) and the Administrative Committee as its organs. The Court of First Instance will comprise a Central Division at the seat of the EPJ and a number of Regional Divisions set up by the contracting states. Typically, there will be one Regional Division per country, and up to three Regional Divisions in larger countries. The system will adopt the EPO's language regime, i.e. cases at Regional Divisions will typically be heard in the respective national language while cases at the Central Division will be heard in one of the three official languages of the EPO (English, French, German). Cases will be heard by panels of three to five judges, comprising at least one judge who is technically qualified and at least two who are legally qualified.

A badly designed litigation system may encourage extortionary practices, again counteracting the intended positive effects of IPRs. The best IPR court and litigation system should resolve cases quickly and at low cost; it should create as few opportunities as possible for influencing rivals' litigation costs (e.g. by using mechanisms such as discovery of evidence); it should seek to bring the required expertise (in many cases this means technical knowledge) into the judges' chambers; and its cost allocation rules need to lower the risk of frivolous litigation being instigated by cash-rich parties against financially less well-off opponents. The EPLA takes a number of these concerns into account and has broad support among practitioners and users. But further design decisions need to be made. Currently, the variety and heterogeneity of European legal institutions is a burden. But it also represents a rich pool of ideas. European policy-makers should study the existing national institutions thoroughly in order to determine best-practice and best-design cases. Such an approach should be preferred to a top-down rendering of a new court system. A careful and fact-based approach to these questions is all the more important since the creation of a harmonised patent litigation environment will also immediately revive the

¹⁰ See <http://www.european-patent-office.org/epo/epla/pdf/ewl0510.pdf>.

controversial debates surrounding patent protection for software (or: computer-implemented inventions) as well as for bioscientific inventions.

3.3 Standardisation and IPRs

Standardisation has emerged as an important policy area over the last five years. In the area of ITC, the diffusion of new products and services is increasingly dependent on interoperability. Standard-setting is currently mostly undertaken as a co-operative process among the interested players in an industry. Standards often build on technical elements which are covered by patents. These are brought into initial consultations at standard-setting institutions such as ETSI (European Telecommunications Standards Institute). Participants in these discussions can reveal their IP and have it declared as essential. Prior to the adoption of some of the essential patents in the standard, the IPR owners typically declare that they will grant FRAND (free, reasonable and non-discriminatory) licences once the standard is enacted. In a number of pending court cases, the exact nature of the FRAND commitment is subject to legal controversy. New approaches to the licensing process are being discussed in the ICT industry, such as patent pools, which might in the future be used to avoid legal controversies and – as alleged by some – the abuse of the process in a hold-up-like situation. The discussion also centres on the question of how statutory (non-voluntary) licensing should be performed if courts or the Commission are asked to impose licensing conditions on these transactions in order to delineate the diverging interests of the corporations involved.

3.4 Emerging Markets for Technology and IPRs

Traditionally, technical knowledge and ideas have been hard to transfer in organised, liquid markets. The reasons for this finding have been much discussed and are generally recognised. Knowledge is idiosyncratic and hard to evaluate on an objective basis; its value may depend on a large number of complementary assets in the hands of different individuals; and most importantly, asymmetric information between those offering technical knowledge or IP and those seeking the information or asset is likely to make market transactions very difficult. The creation of high-quality IPRs can support the emergence of markets for technologies. Recently, several private equity backed funds have been initiated in Europe, which purchase IPRs and combine them into valuable portfolios that can be sold or licensed to potential users. IPRs have been used in some cases as collateral for loans to SMEs. The emergence of new financial intermediaries and financing mechanisms is encouraging. The collateralisation of patent portfolios is particularly interesting, as it might support SME financing of innovation activities.

4 WHERE SHOULD WE GO? – THE NEED FOR A EUROPEAN IPR POLICY

There are three major challenges to the future design of European IPR policies. The first is **harmonisation**. If the EU is to become a region in which innovation can be undertaken without being impeded by national barriers, there is a clear need for creating truly European IPR policies and institutions. That includes harmonised interpretation of IPR laws, harmonised court proceedings and the introduction of legal institutions (final instance courts) which resolve cases that have been highly controversial. Progress will not be immediate in this field, as the necessary legal and institutional convergence is a time-consuming process. But with the EPLA (see Frame 4), a practical solution merging some of the best practices in Europe appears to be at hand.¹¹

A second important requirement is the focus on **balance**. The naive notion that more and stronger IPRs are always good for innovation has been refuted by researchers in empirical and theoretical work over the last few decades. Balance in copyrights means that the fair use rights of consumers have to be taken seriously. In an age of increasing importance of user-generated content, the public domain should be strengthened. Balance in the patent system may be required to strengthen the position of follow-on inventors who build on earlier inventions. But this also means avoiding the crowding out of processes (such as open source software) which depend on a vibrant public domain which is not “burdened” by IPRs. Balance also means avoiding policy capture – IPRs can become the instrument of entrenchment in the hands of established players. Competition policy needs to analyse IPRs carefully in order to prevent their abuse quickly when it becomes apparent.

Third, IPRs that are awarded on the basis of an examination process should be of high **quality** in the sense that they create legal certainty, rather than uncertainty. European institutions, in particular the European Patent Office, should seek to grant high-quality patent rights which are based on tough standards for novelty and inventive step. Contrary to some reports, a transition to tougher standards is supported by many users of the system.¹² Cutting back on strategic patenting, abusive tactics and strategic manoeuvring by applicants would make the system more transparent and also support European SMEs. These are at a financial disadvantage when it comes to the build-up of strategic

¹¹ Harmonisation beyond the EU is currently not politically desirable. In particular, since the US patent system continues to harbour major pathologies, Europe would lose rather than gain by adopting the lower standards of US institutions, for example, by recognising US search reports and examination results.

¹² Cf. the results of the Commission’s Public Hearing of July 12, 2006. See http://ec.europa.eu/internal_market/indprop/docs/patent/hearing/preliminary_findings_en.pdf.

patent portfolios. The response should not be to cheapen the creation of strategic patent portfolio and patent thickets for all players, but to sanction and reduce those activities that are deemed harmful to innovation and competition. The demise of the US patent system should serve as a clear warning to European policy makers. A low-quality patent system with lax examination standards will create many more patents, but it is likely to become an impediment to innovation, as many US corporations are finding nowadays.¹³ A quality-oriented patent policy will be particularly important when the adoption of the London Protocol leads to a substantial lowering of the cost of patenting in Europe, since the demand for protection is likely to increase.

IPRs have a very important function, and without proper design of the European IPR system, innovation will suffer. Somewhat paradoxically, the greatest danger is not – at this point – that IPRs become too weak to support innovation. A far more serious concern is that by strengthening IPRs in a naive fashion, the system becomes unbalanced. In that case, sequential innovation – in the field of creative works and inventions – may be deterred by overly strong and broad rights. In the area of copyright, a new balance between commercial and private, non-commercial interests needs to be sought. A free flow of ideas and information needs to be maintained in order for Europe to achieve its ambitious objectives in the field of innovation. In the area of patents, a focus on quality and tough standards is required in order to thwart increasing tendencies to abuse the system. In terms of the improvement of both systems, it would be helpful to recall that they are meant to serve the citizens of Europe at large, and not a particular group of stakeholders or users.

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¹³ See the public statements of major US companies during a symposium at the University of California, Berkeley in 2004, in *Berkeley Law Technology Journal*, 19 (3). See Merges (1999) for an early analysis of problems in the US patent system.

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RISK CAPITAL FOR GROWING WORLD-CLASS COMPANIES: CHALLENGES FOR EUROPEAN POLICY

Markku V. J. Maula and Gordon C. Murray¹

Summary

The availability of risk capital in all its variants is a critical resource for a modern and adaptive economy. The effective exploitation of new knowledge requires a commercialisation process that is conditional on informed, skilled and risk accepting investors both as individuals (Business Angels) and professionals (Venture Capitalists). Similarly, the restructuring and reinvigoration of large established corporate businesses, often on an international or global scale, has been materially assisted by the advent of a finance industry focused on Management Buy-Out activity.

In Europe, the provision and use of equity-based financing is both patchy across countries and materially lags behind the levels of development seen in the USA. Both inefficiencies in the supply of venture capital and in the demand from informed and growth-oriented entrepreneurs has resulted in parochial and nationally focused risk capital industries that are individually and collectively weaker than their US competitors.

Global trends in both the provision by and demands of institutional finance seeking more and larger management buy-out opportunities, as well as the increasingly borderless identity of new technology paradigms, is threatening the relevance of Europe's current, predominantly country-based model of private equity. There is a real need to develop a more pan-European private equity industry.

In creating an Entrepreneurial Europe, policy makers need to recognise that:

1. Business Angels are a fundamental and early building block of an innovative and adaptive enterprise community. For early-stage ventures, they are collectively more important than venture capital. The national fiscal environment should incentivise and reward risk taking by entrepreneurs and their early-stage financial backers.
2. The fiscal environment should allow inter-country tax transparency. The costs associated with avoiding multiple taxation by private equity firms are a material barrier to a European market for risk capital.

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3. Government should work to encourage the involvement of private and commercial investors rather than seeking to substitute for their unique skills by acting as a direct investor of public monies into new enterprises. Where government supports 'hybrid' venture capital funds by co-investing, it should stipulate that such funds must be of a commercially viable scale.
4. Governments themselves can be highly entrepreneurial. Yet, inter-country learning from both good and bad enterprise policy initiatives is poor and should be addressed by greater international contact between policy makers and academic experts.

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1 INTRODUCTION

In this summary report we seek to give an informed view of two important roles of risk capital markets in Europe. First, we look at the region's ability to provide risk capital for high-potential start-ups and young growth-oriented firms. Secondly, we examine the region's ability to restructure, refinance and grow established firms into strong international firms capable of competing globally.

The key roles of venture capital in the identification and growth of new enterprises are described, including present weaknesses in Europe. Similarly, the increasingly dominant influence of the European private equity industry on company (and increasingly industry) restructuring via management buy-out activity will be charted. Given the European policy perspective of this document, we will emphasise, where possible, means by which current market constraints or limitations may be resolved in order to ensure that high-potential businesses secure the appropriate finance and support to realise global opportunities.

The terms 'venture capital' (VC) and 'private equity' (PE) are notoriously easy to confuse. We will therefore follow the convention of the European Commission's Expert Group (European Commission 2006b). VC investors seek to identify and finance the rapid growth of high-potential young firms that embrace innovative products, processes or technologies, thereby generating substantial rewards from successfully overtaking existing business paradigms. In parallel, a separate but closely related management buy-out (MBO) industry seeks to identify established (but under-priced and/or inefficiently managed) target firms that may be purchased by professional investors prior to significant restructuring, refinancing and the eventual re-sale of the 'revitalised' businesses. Essentially, venture capital describes the provision of risk capital and managerial expertise to new enterprises while MBOs concern the commercial transformation of existing (and increasingly very large) businesses. Both sectors of the PE industry seek to make their investors' medium-term returns substantially above the quoted market in order to reflect the substantial risks in these investments.

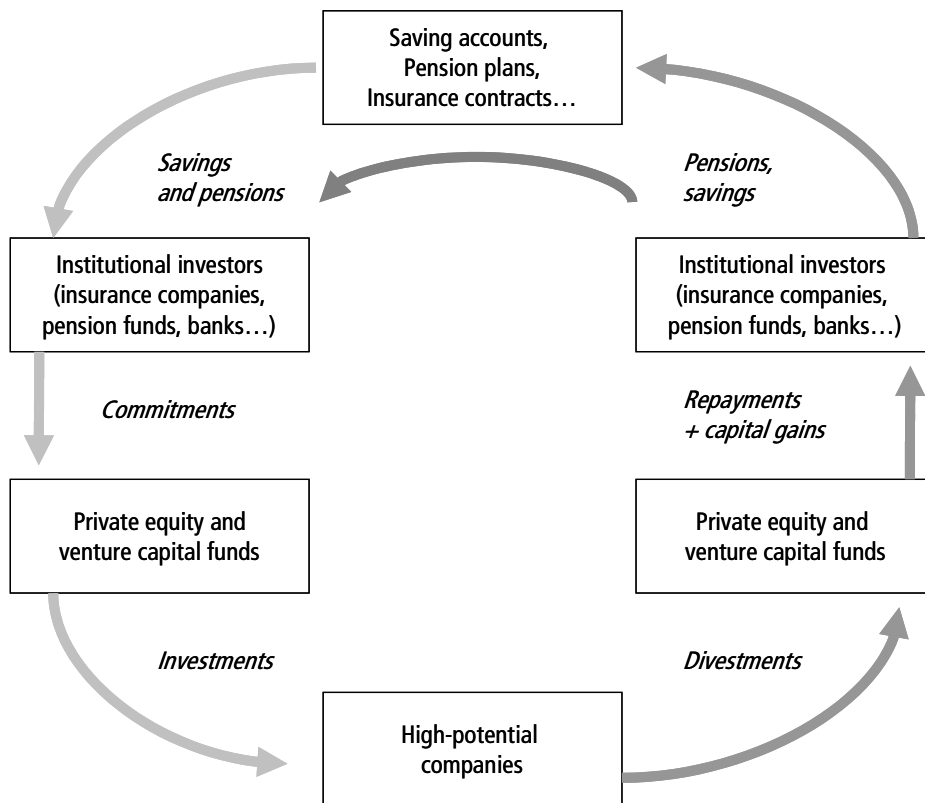
2 THE 'VIRTUOUS' VENTURE CAPITAL CYCLE

In order to understand the PE industry, it is necessary to recognise the dynamic cycle of risk capital investment and realisation. PE is an 'alternative asset' that institutional investors, including pension funds and insurance companies, may introduce to diversify their portfolios of established investments. Fixed term funds are created and run by professional management companies. These highly experienced executive teams, acting as the agents of the investors, invest in a portfolio of rigorously selected enterprises. The skill with which the

professional managers of VC or MBO funds can identify, add value to, and sell their chosen portfolio firms will determine their ability to raise future funds. Profitable exits are the single most important driver of the venture capital cycle.²

The stages of this investment cycle also suggest the wide range of variables that influence the growth of a successful PE industry. As well as requiring informed providers of capital matched with experienced and professional investors, there needs to be a ready supply of attractive target portfolio firms able and willing to accept the strict commercial obligations of new sources of equity. These entrepreneurial firms must also accept the rigorous managerial governance such speculative investment demands. Venture activity needs to be undertaken within a transparent legal structure that is conducive to high risk, new enterprise and corporate transformations in a dynamic entrepreneurial environment. The institutional pre-conditions for a successful PE industry are not trivial.

Figure 1 The virtuous financing cycle of private equity investment.



Source: EVCA 2005a.

² E.g. Black & Gilson (1999) Gompers & Lerner (1999), and EVCA (2005b).

3 NEW AND OLD WORLD DIFFERENCES

The differences between Europe and the USA are simply put. America has built an innovation financing system, i.e. the 'classic' VC industry, which has managed to link world class scientific effort to the continuous production of novel, technology and knowledge-enhanced products and services. VC firms have facilitated the commercialisation of novel ideas and thereby have directly assisted in the creation of new sectors and industries of huge economic wealth. At the same time, the US innovation system has acted as a magnet for entrepreneurial talent from all over the world in addition to its home-grown entrepreneurs. The American model remains unique and is an exemplar admired by the rest of the world. While Europe has a number of centres of technological excellence it has not been able to replicate the US experience in VC. With a few exceptions, the investment returns to early-stage European VC investors and their ability to identify, nurture and grow a stream of world class companies has been consistently disappointing over the long run.³ However, Europe can be rightly proud of a growing MBO industry which, at its best, is world class.

However, it would be a mistake to assume that future VC returns will inevitably mirror Europe's brief and disappointing history. PE is a highly sophisticated investment activity with a significant learning curve for its professional participants. Further, the industry standard structure of 10-year closed funds has a strong 'legacy effect'. A poor performance in the early years of an industry is likely to be similarly reflected in depressed performance figures for several subsequent years. Some recent evidence indicates better capital efficiency figures in 2004–2005 exits in Europe compared to the United States.⁴ Thus, the widespread pessimism in Europe as to its ability to conduct successful early-stage VC investments may be misplaced as a future prognosis.

4 BIG IS BEAUTIFUL

Small scale, country based PE operations are only stable so long as there are few benefits associated with the international or global scale. But the nature of professional financial services with its increasingly high levels of fixed costs – for example, the building of professional support networks or establishing a back office to ensure compliance with regulatory agencies – demonstrates very significant scale and scope economies. These imperatives operate both in the raising of new funds or in the realisation of attractive deals (this process is repeating the rapid global consolidation seen in industries as diverse as car production, banking and advertising).

³ See e.g. Dantas & Raade (2006).

⁴ See e.g. Fricke (2006).

There exists significant empirical evidence to support the performance benefits of size across the investment cycle including:

- New fund raising
- Key management recruitment
- Management remuneration
- Deal selection
- Investment structuring
- Investment syndication
- Portfolio company support
- Investment exits

Yet, the single largest pressure on fund size has been the investment success of the PE industry itself and, above all, the exceptional performance in Europe (and latterly the US) of large management buy-out funds. Both median and upper quartile statistics have continuously shown very considerable margins over public stock performance. Only rarely have European VC funds been able to provide a performance comparative to their MBO peers. The consequence has been a continued and very marked preference by institutional investors world-wide for later-stage funds.⁵ In Europe, this growth has been at the expense of VC investment.

Table 1 European private equity performance (combining all data since records began).

	EU total return pooled, IRR	Top Quarter*, IRR	Upper Quartile, IRR	Morgan Stanley Euro Index, IRR	HSBC Small Company index, IRR
Early-stage	0.1	13.6	2.3	4.2	10
Development	9.2	18.8	9	8.4	10.3
Balanced	8.3	23.7	8.5	6.3	9.9
All venture capital	6.3	17.1	6.2	6.4	9.8
Buy-outs	13.7	31.8	17.8	2.7	8.7
Generalist	8.6	10.3	8.8	7.4	9.7
All private equity	10.3	22.9	10.6	2.3	9.7

Source: European Commission 2006b.

⁵ See e.g. Coller Capital (2006).

5 GLOBALISATION OF THE PRIVATE EQUITY INDUSTRY

There is, as yet, no European PE industry but rather a set of more or less country-based venture capital and management buy-out partnerships operating within their national borders and entrenched in domestic law and regulation. The absence of pan-European risk capital markets reduces both the growth opportunities of entrepreneurial firms and the effectiveness of local investors in relation to their international competitors. Yet, institutional investors are highly informed and have a large and growing choice of countries, sectors and management partnerships in which to invest. They have a preference for established funds and known markets with continuing attractive deal flow. As a consequence, the dominance of Anglo-Saxon economies in private equity (notably the US and the UK) is likely to continue for the foreseeable future.

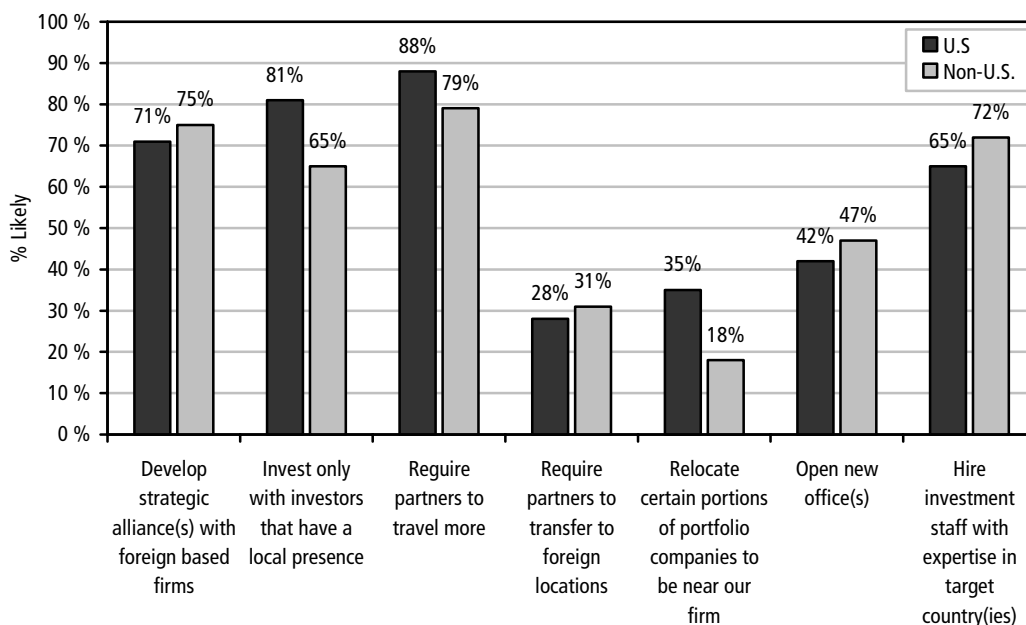
However, the integrity of this parochial, nationally defined structure is eroding. The single most significant driver of this change is the emerging globalisation of the PE industry driven by the implacable search for new and more investment opportunities.⁶ Internationalisation is important to both the VC and MBO industries but for quite separate reasons. We know that the best technology or knowledge-based young firms will rapidly seek to expand beyond national borders early in their growth trajectories. Increasingly, inputs or outputs in technologically demanding markets have little or no local characteristics or identity. The relatively short periods before new technologies are superseded further increase the urgency of internationalisation.

This imperative to access wider markets for growth is particularly important for small and/or peripheral economies, e.g. Finland. Such decisions for aggressively expansionist young firms may raise tough choices about future ownership and legal identity. Research evidence suggests it is far more advantageous both for the firm and its host economy if subsequent growth is not frustrated by artificial legal constraints that block increasing international share ownership.

In order to support the rapid growth and success of these expansionist firms, their VC investors must also be internationally located. This has seen the transformation of some investors into multi-national VC firms with offices in the key centres of enterprise activity. Other firms have encouraged international partnerships creating a network of co-investors and collaborators. Both demand and supply side factors are promoting a more global identity for VC firms and industries.

⁶ See e.g. Deloitte (2006).

Figure 2 Business practices forecast to be deployed for global expansion.



Source: Deloitte 2006.

The driving force behind the global expansion of PE lies in the huge increases in finance resulting from the recent investment successes of the management buy-out sector. The search for under-performing corporate assets does not stop at national borders despite institutional and legal complexities. PE houses have increased their global reach in a search for more and larger deals. However, frictions in the functioning of the European single market based on the imperfect integration of national legal systems (many of which take little cognisance of PE activities) still hinder cross-border acquisitions and mergers. These barriers exist despite the quantified benefits of management buy-outs as a vehicle for increasing the growth, productivity and international competitiveness of European firms.

As the PE industry has raised greater funds it has also had to be far more creative in the design of investment products in order to ensure the sufficient flow of productive investment opportunities. Investment managers combine portfolio companies from different local markets to achieve global scale benefits. 'Buy and build' strategies in which cross-border transactions play an important role have become commonplace. MBO funds have sourced new partners at the highest level of executive talent in order to gain deep insight and industry knowledge in targeted sectors. From the original and rather passive buy out product, professional investors are now capable of restructuring entire industries – on a trans-continental or global scale – given their purchasing power. With 19

new funds over US\$ 5 billion raised since 2000, the creation of \$25 billion or even \$100 billion funds is not inconceivable within the foreseeable future (Apax Partners 2006). Companies from the S&P large-cap market will no longer be immune because of size alone if performance is regarded by existing shareholders or entrepreneurial and knowledgeable investors as capable of improvement. There are fewer and fewer hiding places for poor managers under-utilising valuable corporate assets.

6 BUSINESS ANGELS – INVESTORS OF *FIRST* RESORT

Both in the US and Europe, there has been a long-run increase in the size of initial investments that VC firms are prepared to make. Accordingly, accessing small amounts of seed capital for new and speculative enterprises remains very difficult in the so-called 'equity gap' area of EUR 0.5 to 2 million. As one US venture capitalist put it: "We do not do pocket money". With more money to invest, the attractions of large, later-stage investments have grown. In 2005, according to industry statistics, the US and UK, the two largest PE industries in the world, undertook only a few hundred seed and start-up stage VC investments. Collectively, the two economies created over a million new firms in the same year.

Table 2 US Comparison of business angel and venture capital investments.

	2002	2003	2004	2005
VC investment (BUSD)	21.8	19.6	22.0	22.7
Angel investment (BUSD)	15.7	18.1	22.5	23.1
VC investee companies (#)	2 608	2 409	2 559	2 626
Angel investee companies (#)	36 000	42 000	48 000	49 500

Source: (Sohl 2006) and VentureXpert/PwC Moneytree as of September 2006.

Thus, the reality is that professional VC investors are not going to resolve the equity gap. Yet, the US has continued to be an outstandingly entrepreneurial economy despite professional investors' widespread disinterest in start-up firms. This is because of the existence of large numbers of experienced business angels and their huge impact, especially in early-stage deals (See Table 2). In the same year that US venture capitalists invested in 192 seed and start-stage companies (PwC/NVCA Moneytree 2006), US business angels invested in nearly 50,000 companies, the vast majority being start-up and early-stage businesses (Sohl 2006). In the US, 227 000 active business angels were actively looking for investment opportunities and developing their portfolio companies in 2005 (Sohl 2006). Bygrave et al. (2003) argue that policy makers concerned with encouraging investments in new enterprises should redirect their energies from

promoting venture capital to removing the barriers to informal investing. This advice is equally true in Europe. The encouragement and incentivisation of business angel activity should be a priority policy goal.

7 THE ROLE OF GOVERNMENTS IN THE PRIVATE EQUITY INDUSTRY

There is substantial evidence that, in the earliest and most challengingly uncertain areas of risk capital investment (i.e. seed and start-up finance), the PE industry has increasingly abandoned the field. Faced with this reality, the state has felt unwilling to leave a highly strategic area of policy interest to the vagaries of individual fund managers' or private investors' preferences. Accordingly, encouraging early-stage finance has become a major programme interest at both national and European government levels.

Government has to be wary of intervening in a free market where its actions may 'crowd out' or frustrate commercial interests. The history of governments' direct involvement in modern economies suggests strongly that public agencies should rarely intervene in commercial activities where they have little experience or skills. However, at the earliest stage of new ideas in advanced technological environments there may be a somewhat clear role for government support through, for example, meritocratic grants schemes. Pre-commercialisation stages of investment in areas of new knowledge are often so uncertain and delayed in their outcomes that exclusively commercial investment models may be inappropriate.

Mindful of the disadvantages of displacing private activity, governments have become increasingly interested in the 'equity enhancement' or 'hybrid' model of public and private co-investment. The involvement of government as one of the limited partners in such an early-stage fund may, through public finance leverage, assist the fund in achieving a minimum viable scale. However, the state has no executive role or influence on the operational autonomy of the fund managers. It sees its role as temporary and only valuable during the initial stages of infrastructure building. There is presently considerable interest in these hybrid models based on programme experience in several countries including the US, the UK, Germany, Australia and New Zealand. However, evidence of programme success is still limited, with little public evaluation. Nevertheless, it is very clear that the first and foremost role for governments in developing the private equity markets is to ensure a conducive and predictable

tax and legal framework that encourages the commercial operations of private equity investors.⁷

8 CHALLENGES IN EUROPE

We know from a recent review of research literature on the determinants of VC performance that both macro (economy wide) and micro (firm level) variables are important (Söderblom 2006). Macro level factors including stock market liquidity, sympathetic taxation regimes, pension fund rules, flexible and high quality labour markets, IPR protection and a flourishing Informal Investor/Business Angel community each have a positive and complementary impact. Similarly, at the VC firm (partnership) level, empirical studies suggest that fund size, managerial experience, stage and geographic focus, industry specialisation and syndication each have an effect on investment performance. We also know that when compared to the best US funds, European VC funds are generally too small, too generalist and too local in market ambitions. They are also frequently managed by investors with less specialist industry-technical experience than their US peers who are also more aggressively growth oriented.

Despite the conspicuous success of the European MBO industry, its wider international penetration remains 'patchy'. Major structural impediments still exist for institutional investors wishing to invest in European opportunities in several countries. The European Commission's 2006 Expert Group on Alternative Investments noted that "national regimes do not interlink and are heavily fragmented". Similarly, the 2006 Apax Report termed European regulation "a patchwork" of poorly integrated national legislation that seriously restricts the cross-border investment opportunities of PE firms and their institutional investors by increasing both the complexity and cost of such activities (Apax Partners 2006). A direct consequence of this absence of an integrated single European market for private equity is that the US continues to receive the majority share of new institutional investment in the private equity market despite growing investment opportunities across Europe. The lack of a European agreement on the principle of the mutual recognition of each nation's fiscally transparent PE fund structures for capital gains (similar to that pertaining to public equity investments) is particularly singled out as a serious barrier to further investment. The spectre of institutional investors being vulnerable to multiple taxation liabilities in several national domains rather than solely in the home state of the investor was, in the opinion of the Expert Group, a major constraint on the growth of cross-border activity (European Commission 2006b).

⁷ See e.g. EVCA (2004, 2005a).

9 WHAT'S TO BE DONE? EVIDENCE-BASED POLICY RECOMMENDATIONS

In this concluding section, we attempt to make some sense and order out of the information, trends and analyses cited. We look at the major stumbling blocks in arriving at well-functioning markets for entrepreneurial finance and cross-border growth. Particular attention will be paid to policy prescriptions to improve the functioning of the European single market for risk capital and efficient corporate control. We conclude that coherent national policies in support of a vigorous and growing entrepreneurial economy in Europe should include the following elements.

9.1 Create tax incentives to stimulate informal risk capital

Promote business angel investments to fill gaps in the supply of early-stage finance and support. There is a clear and persuasive argument for the greater promotion of business angel activity in all member states⁸. These informal investors remain one of the biggest competitive advantages of the entrepreneurial US economy. Their role is particularly important in supporting the genesis and growth of high-potential young firms, and as a complement for early-stage professional VC activity.

Promote tax incentives to stimulate informal risk capital. Personal tax incentives have been shown to influence the investment behaviour of high net worth individuals.⁹ Revised legislation to enhance personal tax incentives is currently under discussion in several European countries and in the US Congress.¹⁰ Several European countries and US states currently have such programmes.¹¹ The Pan-European "Young Innovative Company" (YIC) status allowing tax incentives to both young companies and their investors in member states is a European initiative that should be aggressively supported.¹²

Complement tax incentives with other measures to stimulate informal venture capital. In addition to tax incentives, further support for infrastructure including the education and support of angels and the continued promotion of regional and national business angel networks (BANs) is needed. Existing network

⁸ See e.g. European Commission (2002).

⁹ See e.g. the evaluation of the Enterprise Investment Scheme in the UK (Boyns et al. 2003).

¹⁰ H.R. 5198, the Access to Capital for Entrepreneurs Act of 2006 submitted to Congress in April 2006 (See <http://www.govtrack.us/congress/bill.xpd?bill=h109-5198>). The proposed scheme would give a 25% tax credit for "accredited investors" up to USD 500k qualifying investment per year with a limit of max USD 250k qualifying per company per year. See also Manzullo (2006).

¹¹ See e.g. CDVCA (2004) and EBAN (2006).

¹² See e.g. European Commission (2006a) and EVCA (2005a).

programmes should be reviewed and examples of excellence replicated (Sohl 2006).

9.2 Dismantle the barriers to cross-border investment

Improve inter-country tax transparency. If a single pan-European fund structure is not presently feasible, then in the shorter term the mutual recognition of other European structures as tax transparent vehicles by member states is urgently required to facilitate further cross-border investment.¹³ Regulatory barriers for cross-border investments, mergers and acquisitions should be removed to reduce fragmentation of the European markets. The existence of such barriers represents a major hurdle to increased investment both within and into Europe, and reduces the growth potential of European businesses.

Develop pan-European exit markets. PE and M&A industries cannot exist without attractive and open exit routes. Efficient, informed and large volume markets are a key driver of investment.¹⁴ Therefore, the development of such mechanisms is of crucial importance. National stock markets frequently fail to provide sufficient liquidity or the sophisticated investor base needed by many specialised technology-based companies. Therefore, more pan-European exit routes are needed including both IPO and trade sales channels.¹⁵ Regardless of its political sensitivity, Europe must provide unequivocal support for (at least) one European 'small cap' market of international importance in terms of the volume and value of transactions.

9.3 Ensure that publicly supported funds are commercially viable

The default public investment policy should be indirect. In the near absence of professional VC fund interest, and with several countries having under-developed business angel activities, the state is often obliged to intervene in the earliest stages of the VC process. Evidence indicates that this can be accomplished most effectively if the state acts indirectly via the incentivisation of private and commercial early-stage fund managers to undertake more early-stage investments. The 'default' policy stance for the state should be to fund co-investment without direct operational involvement i.e. the financial support of professionally managed funds or fund of funds rather than the state assuming responsibility itself for direct investment activity.

¹³ See e.g. European Commission (2005b, 2006b).

¹⁴ See e.g. Black & Gilson (1999).

¹⁵ See e.g. European Commission (2005a) and EVCA (2005b).

Only support commercially viable funds. The state should also be mindful of the need for a sufficient scale of finance under management in publicly co-financed funds in order to ensure the best possible chance of a fully commercial operation.¹⁶ The setting up of state supported funds for other than strictly commercial objectives has been shown to result in few permanent benefits. Supported funds should be of a size capable of financing a portfolio of investments through successive rounds of growth finance to the exit stage. Any prospective fund seeking government support should be prepared to provide a testable business case supporting its commercial viability.¹⁷

Incentivise larger funds to invest at earlier stages. The US experience shows that some of the largest, very early-stage (seed) investors are large and established VC funds. Such support for nascent firms in interesting new technology areas is seen as a necessary market intelligence and knowledge building requirement by fund managers. Large funds can invest in seed enterprises more cheaply than small, specialist early-stage funds as they incur only marginal costs. Accordingly, it is suggested that governments look at how later-stage European VC investors may be incentivised to invest in some early-stage deals like their US counterparts. One further benefit of involving established VC funds is that it will also enable the industry's most competent and experienced investment professionals to participate more actively in order to support the rapid development of early-stage ventures.

9.4 Educate entrepreneurs, investors and policy makers

Develop 'investment readiness' training. Improvements in the supply of finance to entrepreneurs are conditional on the growth of genuinely attractive investment opportunities i.e. professional and growth-oriented entrepreneurs. Investors repeatedly argue that the money would be available if sufficiently interesting investments were identified. 'Investment readiness' programmes seek to improve the quality of entrepreneurial proposals by educating inexperienced entrepreneurs. These initiatives directly address the major information imbalances between professional investors and those companies seeking their finance.

Encourage inter-country programme learning. Advanced economies have continuously experimented in new policy initiatives to address age old problems in support for young firms. Yet, the means by which extant knowledge and experience is communicated between countries, both within and outside Europe, are limited. Inter-country learning often remains serendipitous and ineffective. We suggest that channels be set up between policy makers and specialist

¹⁶ See e.g. Murray & Marriott (1998).

¹⁷ The UK's Enterprise Capital Funds have to meet this requirement in a competitive appraisal.

academic researchers, whereby existing policies and their outcomes may be identified, appraised and the ensuing lessons communicated to other interested groups internationally. The Norface Entrepreneurship Policy Research Seminar series is one current (and rare) example of such an academic/policy initiative¹⁸.

Think internationally, act internationally. In the area of VC and PE activities where governments are expected to have a role or to offer support, responsibility should be placed on stake holders to address the implications of globalisation on present and future activities. Government departments involved in entrepreneurial finance, as well as VC and PE Industry Associations, and small business and entrepreneurial interest groups that seek government support should each be able to illustrate how they are responding proactively to the implications of globalisation on new enterprise formation and growth.

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¹⁸ See website
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THE ASSIGNMENT PRINCIPLE AND EU ECONOMIC POLICY

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Summary

The EU, suffering from economic weakness and political malaise, is in a period of reflection on institutional matters. This paper offers the following view on the economic governance of the EU: first, while the economic performance of the EU has been weak for quite some time, it is also characterised by considerable diversity. There are significant differences between the economic and social performances of member states, differences which seem to be associated with the varying roles of the public sector and labour market institutions (section 1). Second, the EU system of economic governance is based on principles of subsidiarity and assignment (as defined below) and can be regarded as largely successful (section 2). Problems are confounded rather than resolved when the two principles are disregarded or compromised, as is the case with the Lisbon process (section 3) and with endeavours in macroeconomic policy co-ordination (section 4). The roots of the economic weakness of the EU do not consist in lack of action at Community level or faults in the EU system of economic governance. Instead, the blame must be placed on governments unwilling or unable to reform their economies, and adapt their labour markets and public sectors to changing circumstances such as technological change, globalisation and aging populations. There is little that can be done about this at EU level, although more emphasis on multilateral surveillance and peer pressure could help to shape policy debate and enhance a fruitful process of mutual learning. Co-ordination at Community level, while a popular element in EU rhetoric, risks confusing responsibilities and shifting blame to the Community for matters in which it has no real power.

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1 INSTITUTIONAL DIVERSITY AND PERFORMANCE

Economic growth has been weak in the EU for quite some time, catching up relative to the US having come to an end at the time of the first oil crisis. Growth in GDP has been particularly slow, as compared to the US, throughout the 1990s and this decade. Europe's remarkably weak economic performance has undoubtedly contributed significantly to the present political malaise in the EU ("It's the economy – stupid"). Notably, the big member states on the continent have faced prolonged economic stagnation with low growth and high unemployment as well as large budget deficits, while a number of smaller economies have performed much better.

In fact, Europe is a continent of great diversity. It is a patchwork of independent nation states, some with a long history and others of more recent origin, a few large and many small, some rich and others less affluent, all with their particular economic structure. These differences need not pose any major problems for economic policy in the EU. The transmission mechanism of the monetary policy of the ECB may differ between countries, and the benefits of a well-functioning internal market may accrue to different agents and sectors depending on country-specific circumstances, but such national idiosyncrasies do not undermine the rationale of the common policies.

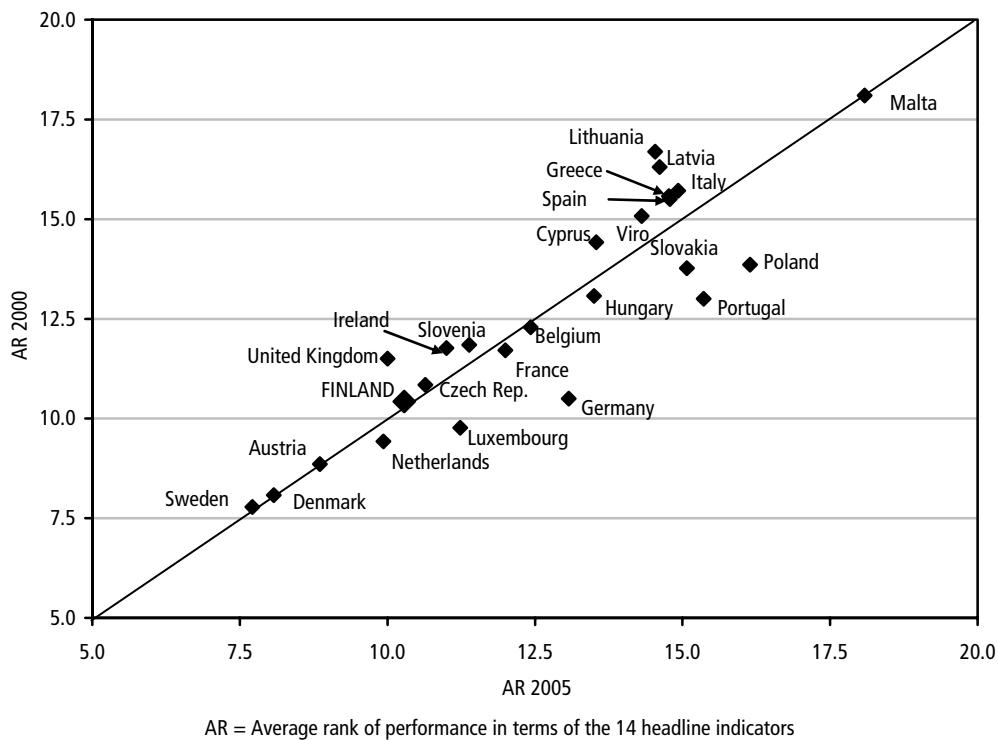
The diversity of EU member states is more policy-relevant when it relates to institutions, notably the public sector and labour market institutions. While all EU countries have large public sectors by international comparison, member states still differ significantly with regard to the scope of the tasks assigned to the state, the local authorities and the social security system. Labour market institutions also differ considerably: some member states rely on strict legislative regulation of labour markets, others leave more to trade unions and employer associations and/or workers and firms. These differences have important consequences for social and labour market policies and for the role that policy co-operation at EU level can play. In the Annex it is shown that the 15 "old" member states can be neatly classified according to these two institutional dimensions, resulting in the four familiar "clusters" of the continental (Germany, France, Austria, BeNeLux), the Anglo-Saxon (UK, Ireland), the Mediterranean (Italy, Spain, Portugal, Greece) and the Nordic (Denmark, Sweden, Finland) groups.

It is interesting to observe that these "social models" perform quite differently in a number of policy-relevant areas, including those covered by the Lisbon process. As part of that process, Eurostat regularly produces a number of structural indicators based on comparable figures. The Council and the Commission have agreed that 14 of these, the "headline indicators," should be

given particular prominence when assessing progress. While each of these indicators would merit separate attention, figure 1 below shows only the aggregate performance of member states across all 14 indicators in terms of their average ranking in 2000 and 2005. This constitutes a crude "beauty contest," but the cross-country comparison summarises a lot of information and enables some pertinent observations.

First, performance in terms of the Lisbon indicators seems to have a close relationship to institutional differences. The Nordic countries were top performers in 2000 as well as 2005, closely followed by the Anglo-Saxon countries, which have also improved their relative position. The continental group, with the exception of Austria, are mainly close to the Community average and their relative position has been deteriorating. Finally, the Mediterranean group performed weakly.

Figure 1 Lisbon performance.



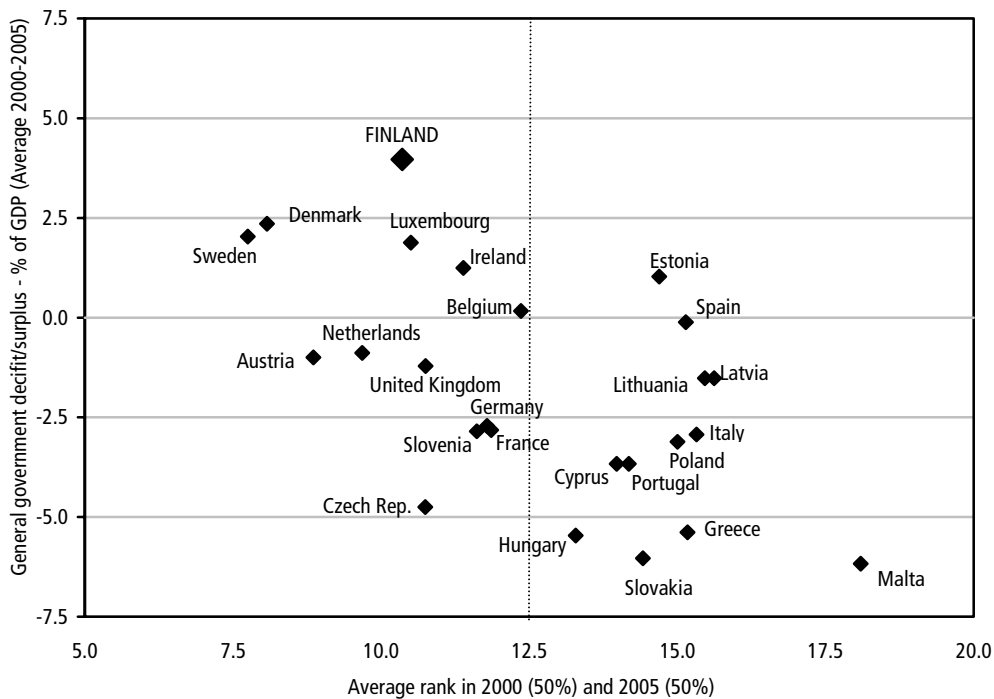
Source: Eurostat.

Second, structural performance changes only slowly; the average rank of member states changed little between 2000 and 2005, only Germany having a rank above average in 2000 but below average in 2005. Member states

improving their performance by 2005 as compared to 2000 notably include the UK and Ireland, but also Spain, Greece and Italy, from low levels, as well as all of the new member states except Poland, Hungary and Slovakia. Member states with a worsening performance include the Netherlands, Luxembourg, France and Portugal (and notably Germany).

A third observation, illustrated in figure 2, is that the clusters of countries differ not only with regard to their performance in terms of the Lisbon process but also in the domain of macroeconomic policy. In particular, the Nordic countries have relatively strong general government financial positions, as has Ireland, while budget deficits have been considerable in most continental and Mediterranean countries.

Figure 2 Lisbon and fiscal positions.



Source: Eurostat.

As noted above, this cross-comparison is crude; there is no obvious reason to focus on the (unweighted) average rank in terms of the headline indicators. However, the differences between member states are compatible with the view set forth in Sapir (2005), according to which the continental and Mediterranean countries could usefully reflect on the policies and performance of the other two groups. The data reproduced in figures 4 and 5 in the Annex provide further

illustration of the differences between the groups in terms of economic efficiency and social equity.

Given the deep roots and wide ramifications of the institutional differences, there is clearly little case for action at Community level, and certainly none for the harmonisation of social and labour market policies. Neither is there (fortunately) any real need for Community action, since the cross-border spillovers in labour market behaviour and most public sector activities are somewhat limited. In addition, the key principles of governance caution against Community involvement in matters of national competence.

2 PRINCIPLES OF GOVERNANCE

The EU is run by its member states and institutions within a multi-method system of governance. In the area of economic policy, the key actors are the Commission, the Council, the European Council, the European Parliament, the European Central bank (ECB) and the eurogroup, in addition to the member states. Methods employed include the "Community method" or legislative codecision by the Council and the Parliament, EU programmes included in the Community budget, delegation of power in specific areas to particular institutions, such as that of monetary policy to the ECB and competition policy to the Commission, and the multifaceted co-ordination method. Obviously, this framework is somewhat complex. Arguably, it is also sophisticated and to some extent successful in reconciling the conflicting requirements with which governance in a multilevel decision-making system is confronted. The principles of subsidiarity and (its close relative) assignment are of particular importance to the functioning of this framework.

There is wide agreement that the treaty-based principle of subsidiarity is, or should be, the very foundation of the system of governance in the EU, the guiding principle for institutional design as well as policy implementation². Policy functions should be allocated to the lowest level capable of dealing adequately with the problem at hand, because the quality of information and therefore of decisions is likely to be superior and errors more easily rectified when decisions are taken close to those affected by them. Needless to say, no policy action should be envisaged unless it has a clear rationale in the form of some "market failure." Also, and more pertinent in the present context, policy issues should be brought to EU level only if their rationale has some important cross-border dimension, otherwise they should be left to member states. Furthermore, policy action at EU level need not be supranational in character if effective co-

² For discussions of EU governance in general and the subsidiarity principle in particular see, e.g. EEAG (2003), Ederveen & Pelkmans (2006), Korkman (2005) or Sapir (2004).

operation between member states can be expected on a voluntary basis. In other words, the EU should act only where it is badly needed – because of significant cross-border spillovers – and then in as soft a manner as possible, an aspect referred to in the treaty as the “principle of proportionality.”

The (vertical) principle of subsidiarity is complemented by the (horizontal) principle of assignment, which recommends that there be a clear allocation of roles and responsibilities between different actors. Assignment of policy functions allows the virtue of simplicity and transparency, and should pave the way for accountability and thereby legitimacy. Specialisation may also enhance the professional competence of policy-making authorities. As emphasised originally by Mundell (1963), the overall coherence of policies should be ensured in spite of decentralisation as long as instruments are assigned to targets on the basis of their (relative) effectiveness.

The EMU indeed embodies a macroeconomic policy regime with a clear division of tasks between the central bank and governments. The ECB is in charge of monetary policy, is granted strong independence, and is instructed by the treaty to safeguard price stability (similarly to the central banks of member states outside the euro area). Governments are free to pursue fiscal policies according to their national interests, but subject to the Stability and Growth Pact (SGP) and certain treaty safeguards of the independence of the ECB.

The microeconomic policy regime consists of the internal market, the economic core of the EU, and its support policies in the areas of competition, state aid and trade. The internal market draws heavily on the Community method with well-defined roles for the Commission, the Council and the Parliament, and extensive powers are delegated to the Commission for handling the support policies. The allocation of competence between member states and the Community seems largely in conformity with the subsidiarity principle, and the Community and delegation methods endow the microeconomic policy regime with reasonable efficiency and accountability as far as action at EU level is concerned.

What about the need for co-ordination in order to ensure overall policy coherence in a context of multiple actors? Stronger policy co-ordination is often called for in EU policy documents and occasionally by academic economists. Such co-ordination may amount to an exchange of information and policy dialogue with a view to multilateral surveillance and peer pressure. Co-ordination in this sense is, or should be, unproblematic and potentially useful (though of limited significance).

However, co-ordination may also be more ambitious by setting common or national targets or by aiming at mutual agreement on concerted or discretionary action by different authorities. While such co-ordination could potentially

improve the policy outcome, it raises a lot of difficulties; it would be extremely complicated and time consuming, involving governments of member states, Community bodies as well as national parliaments. Also, it might blur (even if it did not violate) the assignment principle and thereby undermine the simplicity and transparency of the regime. It is therefore a great virtue of the EU policy regime that it largely does away with the need for discretionary co-ordination. As noted above, overall coherence of policies can still be achieved if the assignment is right and all actors play their part. Practical experience suggests that EU level co-ordination is difficult and risky, resulting in a process characterised by heavy bureaucracy, poor efficiency and weak accountability.

3 THE LISBON CONDUNDRUM

A conundrum is a puzzling question or a riddle, a complex and possibly unsolvable problem (Wikipedia). Making a success of the Lisbon process is indeed an intricate challenge; the Commission and successive EU presidencies have tried various formulas for its implementation, yet the overall impression remains one of failure. The process is marred by problems of governance, amplified by institutional diversity within the union.

The Lisbon process is based on the vision that technological change, globalisation and aging populations call for structural reform with a view to enhancing flexibility, competition and dynamism. The European Council defined the strategic goal of the process as that of making Europe by 2010 into "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth and greater social cohesion."

The Lisbon programme covers both the EU and member state levels, with decisions at EU level being implemented through the Community budget or Community legislation. Particular emphasis has been placed on action to foster R&D. As noted by Pisani-Ferry (2006), there are cross-border spillovers in such activities, although the heterogeneity of the union must be taken into account. It may be added that this heterogeneity also makes it extremely difficult to agree on any substantial expansion of investment in R&D through the Community budget. Other key areas for action by member states include the labour market and education, financial services, taxes and social security.

There has been a strong tendency towards proliferation of the Lisbon agenda, a tendency only partly checked by the emphasis on streamlining of the mid-term review in 2005. The tendency towards escalation in terms of objectives and proposed action is a consequence of sector rivalry, each Council formation wishing to get its perspective and interests endorsed by the European Council. Given the lack of an effective co-ordination mechanism (a supposed function of

the General Affairs Council, which the ministers concerned are unable or unwilling to fulfil), an abundance of recommendations is almost inevitably accepted, implying the risk of inconsistency and lack of focus.

The method of the Lisbon process, the "open method of co-ordination," involves reporting by member states and the Community with a view to monitoring developments in relation to benchmarks or (non-binding) national and/or Community level targets. Originally, the Lisbon process relied extensively on cross-country comparisons and peer pressure, and the Kok-report in 2004 recommended further strengthening of the use of "naming, shaming and faming." However, the big member states disliked the criticism that they were subject to through such comparisons. They asked for a shift in focus such that member states would be compared not to each other but to the objectives that they had themselves set in their "national reform programmes." This (regrettable) change in focus, claimed to be desirable as a way of strengthening "national ownership," was implemented through the mid-term review in 2005³.

Experience so far suggests that the Lisbon process has little effect on policy action in member states. It has led to an escalation of bureaucratic procedures, both in member states and at Community level, producing lots of reports with lofty rhetoric, the final result being a set of carefully drafted but unexciting conclusions by the European Council in its spring meeting. The Lisbon process seems almost totally dissociated from the political reality in member states and has generated little in terms of genuine commitment to concrete action.

The difficulties of the Lisbon process should come as no surprise. It deals with issues of national competence at Community level and thereby risks blurring the allocation of responsibilities. It disposes of no instrument for action of its own, its procedures are inefficient and complex, and there is no real accountability: citizens in member states do not know, nor do they care, about the Lisbon process. After all, governments of member states are accountable to their citizens, not to the Commission or to governments of other member states.

Given these difficulties, why was the Lisbon process adopted in the first place? Arguably this happened because of a number of (mainly bad) reasons. Governments wanted to demonstrate that they cared – including in their deliberations at EU level – about those issues, such as jobs and social security, which are close to the hearts of ordinary citizens. Some member states saw it as an opportunity to preach the virtues of economic reform with a liberal bent, others thought of it as an embryo for a more social Europe. The Commission hoped to extend its influence in domains of national competence, and national officials from various ministries were only too happy to compete in influencing the agenda of the European Council.

³ This point is stressed in Pisani-Ferry & Sapir (2006).

Should the Lisbon process be discarded? No, but it should be reshaped so as to place an emphasis on cross-country comparisons and peer pressure with a view to encouraging mutual learning between member states. Such multilateral surveillance has proven its usefulness in organisations such as the OECD and the IMF. Admittedly, cross-country comparisons of structural policies are fraught with difficulties. However, such comparisons may give useful impulses to national authorities and encourage them to examine their policies in the light of alternatives. There is considerable potential for mutual learning in member states since the fundamental values are the same while the institutional set-up is often different.

4 THE SGP DILEMMA AND FISCAL POLICY CO-ORDINATION

The Stability and Growth Pact (SGP) obliges member states to aim at a medium-term budgetary objective compatible with long-term sustainability of public finances and to avoid excessive budget deficits. The pact is not about (discretionary) co-ordination but amounts to an institutionalised and particularly strong form of multilateral surveillance, combined with pressure for a partial harmonisation of budget policies (the ceiling for acceptable deficits). The SGP was reformed in 2005 in the light of its failure to impose budget discipline on France and Germany in late 2003.

While it may be too early to evaluate the reformed SGP, there is arguably little reason to expect it to play any major role in fiscal policies in the euro area. In fact, efforts at imposing national budget discipline through a Community framework seem to face a dilemma:

- In its original version, (the "Waigel version"), the SGP was supposedly based on strict rules and a quasi-automatic sanction mechanism for breaching the deficit ceiling. This did not work because the rule was too simplistic; some discretion is needed for economic and political reasons. The reformed pact is more sophisticated and flexible but also quite complex. It leaves considerable room for discretion, and experience suggests that politicians tend to exploit discretion to the detriment of discipline.
- A third option would be to delegate powers in budgetary policy to expert committees, analogous to the operation of independent central banks. However, the national budget is a complex set of instruments and associated with distributional issues of great political significance.

There is no way to ensure national budget discipline through Community measures, such as strict rules, agreed decisions on discretionary action or the delegation of powers. As with the Lisbon process, the problem is that the

Community is unable to act effectively in areas that are essentially of national competence. There is a common interest in the maintenance of sufficient budgetary discipline, as unsustainable budget deficits ultimately have problematic cross-border consequences, yet the national budget is also of unique importance as a vehicle for asserting national sovereignty. Governments of member states run, and must be expected to run, fiscal policy largely as they deem appropriate from their own point of view and in the interest of the citizens to whom they are accountable. Also, experience so far does not suggest that budget deficits, even if they violate the stipulated ceiling, need lead to high interest rates or pronounced weakness of the euro.

Nevertheless, the SGP can and should play a useful role by supporting finance ministers in making the case for fiscal consolidation and sound public finances. Its practical implementation could benefit from stronger peer pressure if the Commission were to calculate and publicise indicators of the fiscal sustainability of member states.

The monthly meetings of the eurogroup are a highly useful forum for exchange of information and policy dialogue. It is occasionally claimed that the euro area should have much higher ambitions for macroeconomic policy co-operation so as to achieve a better policy mix⁴. For instance, joint commitments and efforts by all member states of the euro area to pursue fiscal consolidation could pave the way for an easing of monetary policy and/or influence the external value of the euro. Similarly, growth prospects could be enhanced by concerted action in the area of structural reform, which is often associated with short-term pain and long-term gain, in combination with a more accommodating macroeconomic policy stance. Thus, it is argued, there is a need for stronger economic policy co-ordination involving, for instance, meetings of the eurogroup with the participation of prime ministers, or even for a "gouvernement économique" at Community level.

There is no doubt that co-ordination could (in theory) improve the outcome of policy action. However, the case for macroeconomic policy co-ordination is not a strong one, since the cross-border effects of fiscal policy are rather limited. Fiscal expansion in one member state may have a positive effect on demand in neighbouring countries through trade, but a negative effect by exerting upwards pressure on the euro-area interest rate. In the area of structural policy it is similarly difficult to find obvious cases of significant cross-border spillovers calling for policy co-ordination at Community level. Reform efforts in one member state may benefit neighbours by lowering the area-wide inflation rate, but could also harm neighbour states through effects on competitiveness. The size and even sign of the cross-border effects might vary according to a number

⁴ See, e.g. Pisani-Ferry (2006).

of circumstances. In general, policy assignment may in principle be suboptimal but has the great attraction of simplicity and transparency. The ECB has grounds for suspecting that policy co-ordination would confuse responsibilities and give governments an excuse for fiscal inaction. The practical difficulties of policy co-ordination involving multiple actors (at several levels) are such that the case for (discretionary) policy co-ordination would need to be very strong indeed for such efforts to be justified.

5 CONCLUDING COMMENTS

The EU has a distinct policy regime with clear micro- and macroeconomic parts, based on the subsidiarity and assignment principles. This regime is basically sound, though there is much scope for improving the internal market and for using the Community budget more effectively in areas where market failures have a significant cross-border dimension, while reducing the amounts spent on regional aid and the CAP.

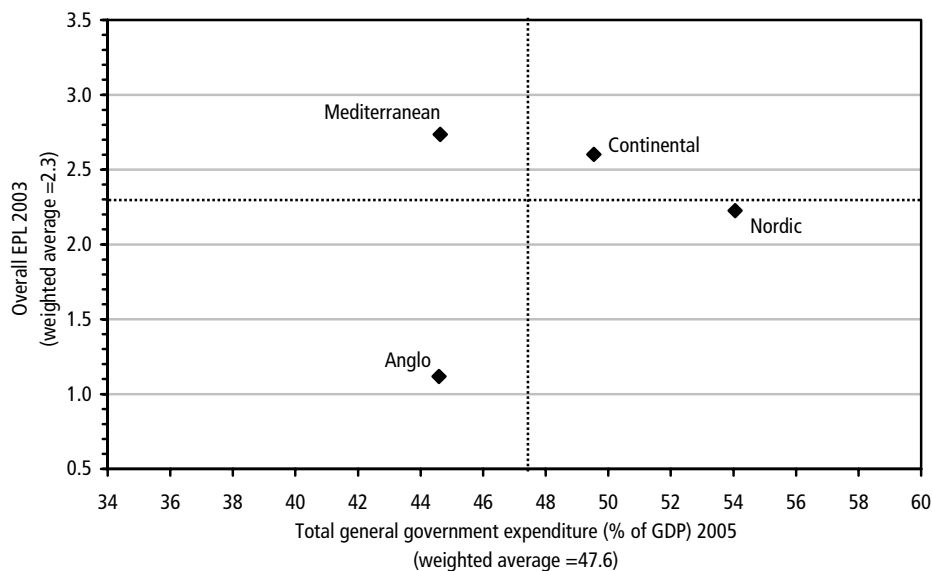
Much time is spent in the EU on policy co-ordination activities, but these are not at the heart of the regime and (it is argued above) their rationale and effectiveness is open to doubt. Clearly, the benefits of the EU policy regime can be reaped fully only if member states face up to their responsibilities through the appropriate national policies. And regrettably, lack of action in key areas of national competence is a main reason for the stagnation that much of Europe has been experiencing. Yet, there is not necessarily all that much that can be done about this at Community level through policy co-ordination.

At best, Community co-ordination may enhance mutual learning through a process of multilateral surveillance. Such co-operation should be descriptive rather than normative (except for the SGP), it should stress streamlining, and it should avoid creating excessive and unjustified expectations. At worst, Community co-ordination degenerates into an ever-escalating bureaucratic exercise, produces meaningless rhetoric with empty promises ("talk is cheap"), and diminishes the transparency of the policy regime. It can also contribute to bringing the EU into disrepute by making it a scapegoat, the perceived origin of "ultraliberalism" in some countries and of excessive interventionism in others. This is a pity and unfair because it is surely not the Community or its system of governance that is the source of the economic problems in the EU.

ANNEX: SOCIAL MODELS IN THE EU FAMILY

The relevance of institutional considerations in cross-country comparisons is widely recognised; they were the basis for the typology originally set out by Esping-Andersen (1990) and recently discussed by Huber & Stephens (2005) and Sapir (2005). A crude but useful way of illustrating the typology is the two-dimensional scheme set out in figure 3, with the degree of government regulation of labour markets (as proxied by the OECD "Employment Protection Legislation Index") on the horizontal axis and the size of the public sector (public sector outlays relative to GDP) on the vertical axis. As seen in figure 3, the 15 "old" member states may be split into 4 categories of social model or welfare state based on their group averages⁵, relative to the average for all 15.

Figure 3 Typology of social models.



EPL = Employment Legislation Protection Index

Source: OECD (2003).

The continental model (Germany, France, Austria and BeNeLux) is characterised by tight government regulation of labour markets with a view to job protection (of "insiders," arguably at the expense of "outsiders"). The public sector is relatively large, providing a number of services (in, e.g. the education and health areas) and social security (pension and other benefits). Benefits are often earnings-related and may differ depending on branch and/or employer. For

⁵ Figure 1 hides some individual differences. For instance, the Netherlands and Austria are in some respects close to the Nordics, and Sweden regulates labour markets more tightly than its neighbours. However, the correspondence between the analytical scheme and geography is sufficient to justify aggregation into groups as above.

historical reasons this model is referred to as the "Bismarckian" model. It is occasionally also referred to as the "conservative," the "corporatist" or the "Christian democratic" model. As underlined by Sapir (2005), the continental model scores fairly well in terms of social equity (risk of poverty) but less so in terms of economic efficiency (measured by Sapir as the employment rate).

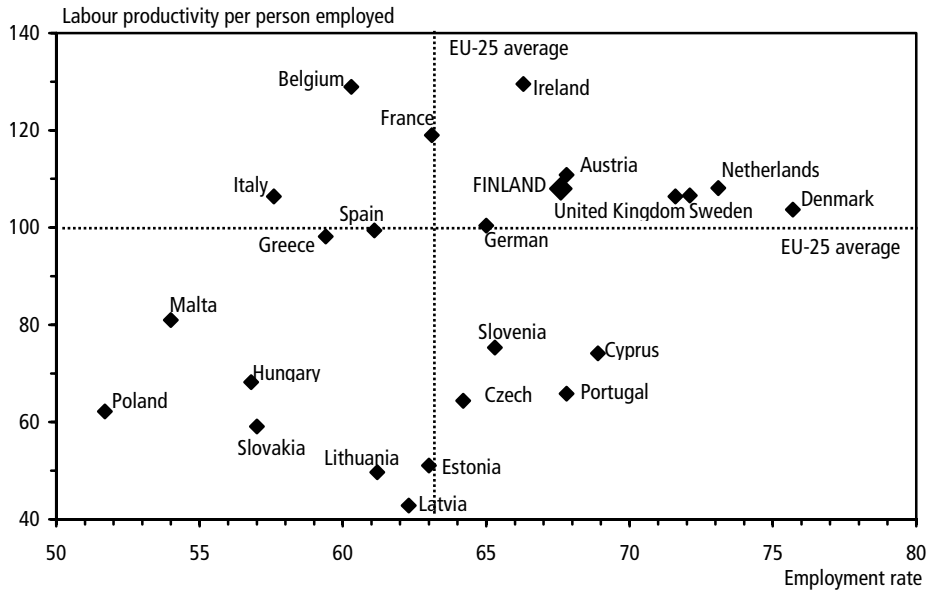
The Nordic model (Denmark, Sweden, Finland) has a big (even bigger) public sector but relatively light government regulation of labour markets. Public services and transfer schemes are generous and apply to all citizens on the basis of residence and/or employment. Labour markets are highly organised and negotiations between trade unions and employer associations are instrumental in determining wages and working conditions or the ways in which these are decided upon at firm level. This model is often referred to as the "universalist" or "social democratic" or "Scandinavian" model. Recently, the Nordic model has been the object of much praise as the Nordic countries seem to score well in terms of both economic efficiency and social equity (see figures 4 and 5).

The Mediterranean or South-European model (Italy, Spain, Portugal, Greece) has a smaller public sector and a tightly regulated labour market. Public services are mostly less generous (and occasionally less efficient) than in the North, and traditionally the family plays a very important role in providing security to its members, rather than the state or the municipality. The participation rate of women is low and long-term unemployment high. It is for reasons such as these that this model is not considered particularly successful in social and economic terms.

The Anglo-Saxon or West-European model (UK, Ireland) has a relatively small public sector, though its size has recently been increasing in the UK, and largely unregulated labour markets. Public services are poor and benefits often means-tested. Labour market organisations play almost no role in the UK, and somewhat more of a role in Ireland. For historical reasons, the model is also referred to as the "Beveridge" model. The key actor in this "liberal" model is the individual, while the government is expected to abstain from large-scale interventions, while providing basic security and institutions backing up the market economy.

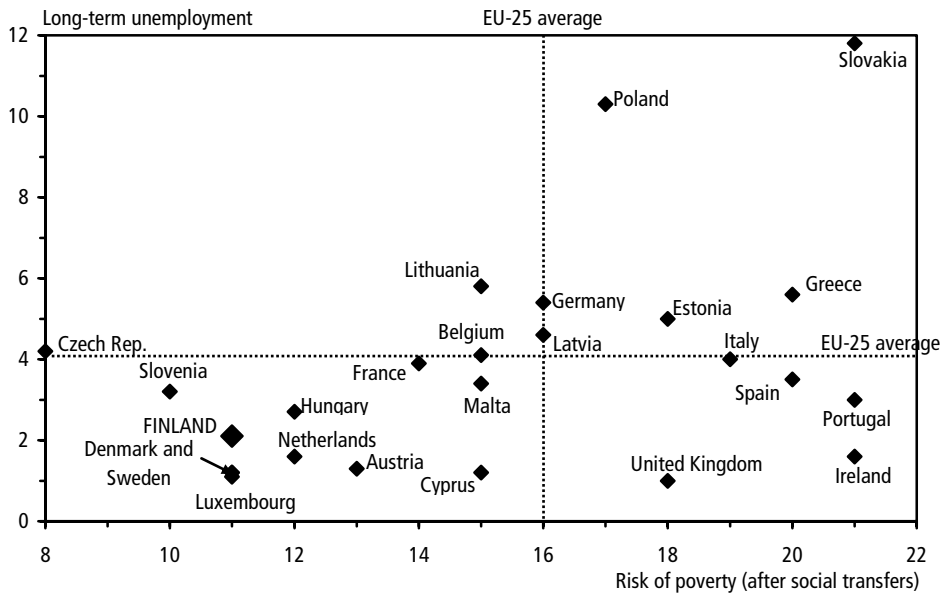
Finally, there are the 10 new member states. It is not clear whether it makes sense to speak of an East-European model, as these countries are somewhat diverse and rapidly evolving, economically and institutionally. In terms of averages, this group is closest to the Anglo-Saxon model.

Figure 4 Employment and productivity in 2004 (EU-25).



Source: Eurostat.

Figure 5 Social equality in 2004 (EU-25).



Source: Eurostat.

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THE EU AND THE GOVERNANCE OF GLOBALISATION

Alan Ahearne, Jean Pisani-Ferry, André Sapir and Nicolas Véron¹

Summary

The system of multilateral rules and institutions that constitutes the global economic governance regime is trailing the rapid transformation of the world economy and the emergence of pressing global issues. It faces significant challenges such as the resurgence of economic nationalism and must adapt to changes in the geopolitical background and to a growing number and diversity of participants in global economic integration. It must learn to coexist with regionalism and market-led governance.

It is possible for globalisation to proceed on the basis of weak global governance, but not without significant risks to its sustainability. The EU, which has a stake in the multilateral system and most probably a comparative advantage in institutional design, should be a key player in its reform agenda. The difficulty of the task is no excuse for avoiding it and hiding behind US leadership. To equip itself to take initiatives promoting reform, the EU requires changes in its own internal governance and external representation. Contrary to conventional wisdom, these changes need not imply the federalisation of external relations.

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1 INTRODUCTION

It is hard to escape the impression that global economic governance trails the rapid transformation of the world economy and the emergence of pressing new issues. The suspension of global trade negotiations in July 2006 highlights the difficulty of delivering on the multilateral front and is bound to give further impetus to the proliferation of regional trade agreements. The two global institutions long seen as the most effective, the International Monetary Fund (IMF) and the World Bank, have lost their relevance. The IMF's core business of conditional financial assistance is threatened by Asian disaffection and Latin American detachment, and its attempted resurrection as a venue for managing global current account imbalances is a high-risk gamble. The World Bank has already been largely crowded out of project lending by the development of financial markets.

At the same time, emerging issues remain unresolved. The labour market consequences of globalisation are a cause for concern in almost all countries, but the International Labour Organisation is as marginal as ever. Populations are on the rise in some of the poorer regions on Earth and a new wave of migration has begun, but the International Organisation on Migrations remains almost disregarded. Almost ten years after it was signed, the Kyoto protocol on global warming is still rejected by the US and major developing economies, and even those countries that support it often make insufficient efforts to enforce it at home. In addition, shifting supply and demand patterns for fossil fuels, water and other natural resources are creating scope for new tensions, but no meaningful international response has emerged to establish properly-functioning markets and to avert the risk of conflict.

To be sure, there are some brighter spots. The Bank for International Settlements (BIS), the oldest multilateral institution, is a valuable venue for joint initiatives and dialogue between central banks. More generally, co-operation between technical and sector-specific agencies is frequently effective. However, there is a clear contrast between the rapid pace of market-led integration and slow institutional developments at multilateral level.

This situation raises the prospect of major, perhaps unprecedented, policy challenges. Yet the balance of economic and political power makes addressing these challenges more difficult than at any time in recent decades. Global economic governance was a stable and relatively simple game in a Western hemisphere under US leadership. This is made much more unstable and complex by the rise in the number and diversity of players, the growing weight of new economic powers, increasing US scepticism towards 'foreign entanglements', and Europe's continued focus on its own internal integration.

How Europeans should respond to these challenges is a difficult question, and they tend to have mixed feelings. On the one hand, they see themselves as supporters of strong global rules and effective international institutions, and are more comfortable than others with the implied limitations to sovereignty. Having established a system of supranational governance at regional level, Europeans tend to see global governance as a natural extension, and regard the EU as a laboratory for what the world of tomorrow could look like. On the other hand, they remain reluctant to exercise leadership and initiate reform. Even though the EU has been enterprising on trade and global warming, its actual policy record in those fields is mixed at best. It has generally been a follower on financial matters, its actions on development assistance are inconsistent, and it is divided on many issues such as migration. Furthermore, the EU's own complex governance system raises issues of internal consensus-building and external representation that frequently prevent Europeans from taking the initiative.

This raises significant strategic questions for Europe. First, is the sorry state of global governance a cause for serious concern or can it persist without causing much damage? After all, whatever the travails of international negotiations, world growth is currently more buoyant than ever and concrete economic integration continues at a rapid pace. Second, assuming the global regime is in need of change, should the EU aim at taking initiatives in the reform process or should it remain a follower? Third, assuming the EU does intend to push for reforms, what changes in its internal arrangements and external representation does it need to implement to be an effective player?

Section 2 of this paper presents the state of global governance, and section 3 discusses whether its malaise should be taken seriously. Section 4 is devoted to the role played by the EU so far. Policy options for the future, recommendations and conclusions are proposed in section 5.

2 THE *MALAISE* IN GLOBAL GOVERNANCE

The past 25 years: big changes, little reform

In the last quarter century, the world economy has undergone profound changes. The global economy of the early 21st century has little in common with that of the early 1980s, when a collection of integrating but still highly segmented national economies coexisted with quasi-autarkic blocks (China, India, the Soviet Union and its satellites) representing about half the total world population. The world today has even less in common with the even more fragmented world of the early post-war period, when a few countries started rebuilding the world trade regime. Yet the global economic governance regime –

the set of global rules that govern international economic relations, the network of institutions that support and enforce those relations and the processes that steer change within this system – has not undergone a parallel transformation.

The changes that have taken place should certainly not be dismissed. The core institutions have adopted new roles – the IMF, for instance, has moved from financing current account deficits in the fixed exchange rate world of the early post-World War II decades to managing debt crises, marshalling the transition to a market economy and addressing financial account crises. Flexible responses to the transformation of the trade scene have been found through the creation of informal negotiation groupings within the WTO. Also, *ad hoc* structures such as the Financial Stability Forum have been created to steer co-operation between institutions.

But reforms have remained confined to adaptation and tinkering within the post-war system. On the face of it, the only significant institutional reform over the past 25 years was the creation of the World Trade Organisation (WTO) and its Dispute Settlement Mechanism in 1995. The other essential pillars of the post-war economic order – the UN system, the GATT, the Bretton Woods institutions – as well as less-than-essential institutions have remained unchanged. The International Energy Agency, created after the first oil shock, has not undergone meaningful reform. It remains a consumers' cartel confronting a producers' cartel. In the Group of Seven (G7), first convened in 1975–1976, the key players remain the same narrow group. Both the addition of Russia in 1998 at head-of-state level and the new habit of inviting other guests to G8 meetings have made only a minor difference. Even the more significant creation of a Group of Twenty (G20) in 1999 based on the same model as the G7 (but only at finance minister level) and the increasing role it has played have not challenged the overall steering role of the G7.

Attempts at more ambitious institutional reform have been rejected or have ended in failure. Grand schemes for creating new institutions outlined in the 1980s and the 1990s, such as an Economic Security Council overseeing specialised institutions, a Global Competition Authority, or a Global Bankruptcy Court, have never taken off. Even the more down-to-earth Multilateral Agreement on Investment negotiated in 1995–1998 within the OECD turned out to be still-born. The attempted revamping of the IMF through the creation of a Sovereign Debt Resolution Mechanism (SDRM), proposed in 2001 by Anne Krueger, then the Fund's first deputy managing director, met the same fate. The handling of environmental issues offers a mixed record. Some technical agreements have met their goals, most remarkably the 1987 Montreal protocol on substances that deplete the ozone layer. However, the biggest environmental challenge, global warming, remains essentially unaddressed in spite of climate

representing a prime example of a global public good which must be attended to through international co-operation.

On the whole, considerable changes in the global economy have not been mirrored in the structure and missions of global institutions. Although institutions have adapted, there is a clear disjunction between economic and institutional developments.

It is, in a way, a remarkable tribute to the architects who were “present at the creation” of the post-war order – mostly US policymakers and a few British ones – that the system they conceived sixty years ago has been able to serve a rapidly transforming world economy without major institutional reform. However, there are limits to the extent to which this flexibility allows the global governance system to adapt.

Against this background, two recent trends affecting the world economy are especially noteworthy. The first is the threat of resurgent nationalism. The second is the challenge presented by the rise of regional arrangements. We will now turn to these, before exploring more fundamental causes of the current malaise.

The nationalist threat

An obvious limit to global governance is the reluctance of individual governments to renounce sovereignty and accept collective decision-making. This is not new, but the landscape has been transformed as a consequence of several evolutions. To start with, there has been a change in US attitude. At the San Francisco conference in 1945, Harry Truman stated US policy to be the following, *“We have all to recognise, no matter how great our strength, that we must deny ourselves the licence to do always as we please”*. By contrast, a central theme of George W. Bush’s re-election campaign in 2004 was that the US would not ask for a “permission slip” before taking decisions. Looking ahead, the US also seems to be hesitant about the potential role of global institutions in ensuring that the emergence of new global powers like China and India does not threaten its vital economic interests.

It may be debatable whether this apparent US drift is a key driver of what increasingly looks like a widespread revival of economic nationalism, or just a consequence of the same underlying causes. At the very least, it serves as an excuse: claims of ‘economic patriotism’ in France and similar attitudes in other European countries often cite US opposition on national security grounds to takeovers by CNOOC and Dubai Ports World as a meaningful precedent and as a justification for their own defensive proposals.

However, the most profound shift may be the emergence of new powers which have a different attitude towards multilateralism. The key economic players in the first few decades after World War II were Europe and Japan, which had been recently traumatised by nationalist hubris. China, India or Brazil do not share the same historical experience and can easily perceive multilateral commitments as excessive constraints on policies inspired by national interest. Furthermore, in East Asia the traumatic experience of the financial crises of 1997–1998 has fuelled the sentiment that the multilateral system cannot be trusted – hence the reliance on self-insurance through building up foreign exchange reserves.

Energy is another illustration. Since the fear of resource scarcity has re-emerged, national governments in developed and developing countries have been busy securing access to oil fields through the strengthening of bilateral links with oil and gas producers. Despite emerging efforts to create an EU energy policy, the world has a long way to go before the need to ensure energy security can be taken up collectively rather than individually.

The regional challenge

There is a striking contrast between the relative immobility of the global governance system and the blossoming of regional initiatives. This evolution is well documented with respect to trade, a field where all regional agreements must be notified to the WTO. Since the WTO was created, about 130 such agreements have been reported, more than in the previous five decades together.

However, regionalism is by no means limited to trade. The EU is obviously much more than a trade block and its mere existence has profound consequences for all global institutions. Even in the absence of changes in European representation and participation in the governance of global institutions (we address this issue below), these institutions have started to take notice of the EU dimension. Interestingly, the IMF has recently decided to examine global imbalances “collectively with systemically important members and even with entities, such as regional groupings, that are not members” – clear recognition of the implications of the creation of a euro area within the EU.

Regionalism is alive on all continents, but most remarkably so in Asia. The advance of Asian regional integration is notable not only for its breadth but also for the fact that it is explicitly regarded by participants as an alternative to reliance on global institutions. At the time of the Asian crises in 1997–1998, the proposal for an Asian Monetary Fund was blocked by the G7 and countries in crisis were directed to the IMF instead. Since then, East Asian countries have been negotiating among themselves on a series of regional monetary and

financial co-operation agreements. To be sure, this co-operation has not been tested. Nevertheless, it is intended to provide a form of collective financial security at regional level.

Regionalism, therefore, is a fact that cannot be simply ignored or opposed by the supporters of multilateralism.

3 A CAUSE FOR CONCERN?

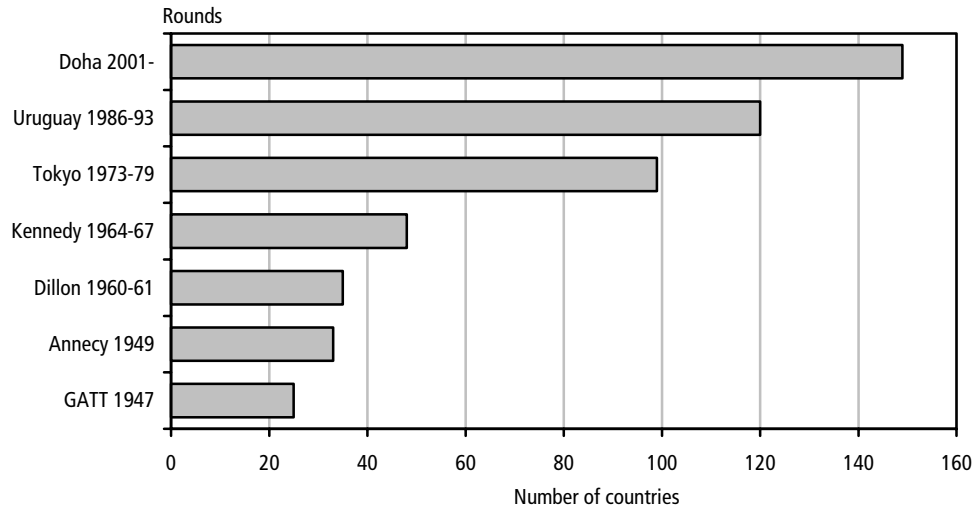
Having described threats and challenges to multilateral governance, we will now attempt to understand the underlying difficulties, whether apparent disaffection with global governance should be regarded as a serious concern, and whether there are substitutes for it.

Why disaffection?

Four underlying factors make the task of global governance increasingly demanding.

To start with, the diversity of preferences within the world economy has increased dramatically. Global governance traditionally involves a trade-off between economies of scale and differences in preferences. The more diverse countries are, the less they tend to agree on devolving policy responsibilities to a supranational entity. Yet beyond the increase in the number of players (Figure 1), differences in historical backgrounds and development levels are bound to result in differences in preferences. This simply increases the cost of agreeing on a common response and makes a compromise on any subject much more difficult to reach, even when increased interdependence simultaneously increases the benefits of co-operation. In sum, *"the multiplicity of countries, their divergent historical experiences and the differences in the quality of the regimes they live under [...] make it difficult to ensure the provision of global public goods"* (Wolf, 2004).

Figure 1 Number of countries taking part in multilateral trade negotiations.



Source: WTO.

Second, among countries of unequal development levels, many global issues involve an international distributional dimension that compounds the difficulty in reaching an agreement. This is obviously the case in debt relief, but it is also true of trade liberalisation, since countries benefiting from the preferential trade agreements in existence are bound to lose from an alignment of trade tariffs. This also applies to policies designed to tackle global environmental challenges, for which equity issues are compounded by the intertemporal dimension: the prime objection of emerging countries to curbing greenhouse gas emissions is that developed countries had a free ride on the global environment in the previous stages of their development. In principle, these obstacles can be addressed – at least for a transitional period – through international redistribution. In fact, some redistribution is already taking place through development assistance and the asymmetric allocation of greenhouse emission quotas. However, the distributional problem remains extremely difficult to tackle unless a benevolent hegemon stands ready to internalise the problem and buy off opposition.

Third, globalisation is divisive within developed and developing societies. The extent of its contribution to the rise of inequality and job insecurity within countries is disputed, but the most basic models of integration through trade, capital flows and migration point to distributional effects that create winners and losers. Furthermore, in many instances, global institutions are regarded as the source of globalisation itself and its deleterious consequences, thereby weakening their political legitimacy.

Fourth, and not least, the end of the Cold War has removed a powerful incentive to collective action. The change in the attitude of the United States, which is now more inclined to adopt a multi-track strategy that includes regional agreements and unilateral initiatives as alternatives to the multilateral route², has probably less to do with economic factors than with political ones. As the world's biggest debtor, the US does not occupy a neutral position on trade, exchange rates and global finance, but similar issues (though on a smaller scale) also arose at the time of the Bretton Woods system with the accumulation of dollar balances by European countries. It is also true that the US position in the world economy offers opportunities for regulatory leadership, but this again was even more the case in the past. On the political side, however, major shifts have taken place. US national security no longer calls for cementing an economic coalition of states in the same way that it did in the Cold War period. As scholars of international relations often state, the Cold War glue has gone. The so-called US "war on terror" justifies the targeted monitoring of financial flows and specific development assistance efforts. However, it does not require a system of economic alliances to bind countries together.

There are therefore structural factors behind the problems faced by global governance. The question therefore becomes one of whether we can dispense with global rules and institutions?

Where is global governance needed?

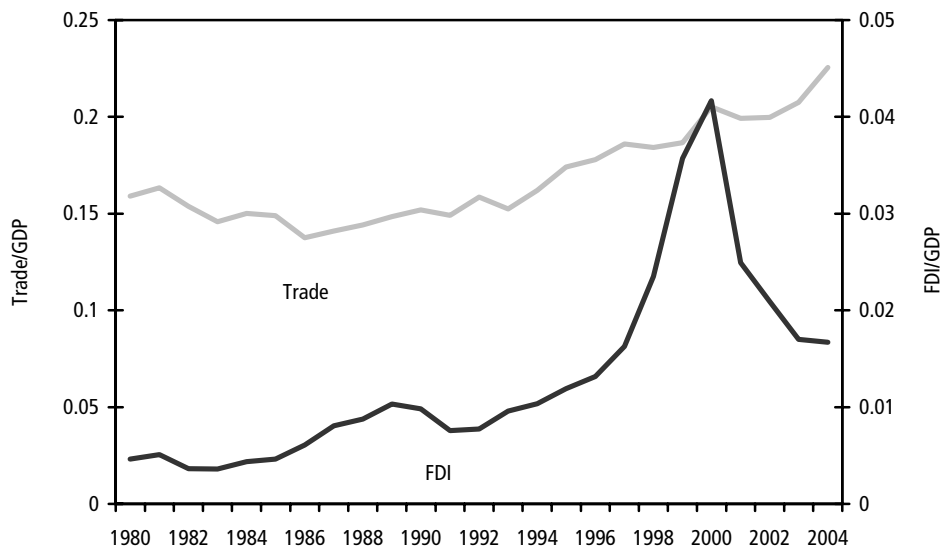
A deterioration of global governance may not in itself be a cause for alarm. Institutional arrangements, after all, are means not ends. The world has already experienced periods of high international interdependence with no multilateral international order. This was especially true during the first wave of globalisation in the decades before 1914, a period when the concept of global governance had not been invented. The framework of world economic interdependence was provided by a set of universally accepted core principles (such as adherence to the Gold Standard and free capital mobility), a network of bilateral agreements (especially on trade), and political ties (especially between the imperial powers and their dominions). Globalisation's main driver, however, was the dynamism of private capital (Eichengreen 1996, Frieden 2006). Today's world shares many of these features.

To many practitioners, especially in the private sector, the value of an institution lies in what it is able to deliver. In this respect, the travails of multilateral trade negotiations have not prevented trade flows from expanding over the last ten years. Moreover, the absence of a multilateral framework for foreign direct

² This is apparent in the document published by the White House on the national security strategy (US government, 2006)

investment has not prevented strong growth in capital flows (Figure 2). Global governance is thus confronted with the problem of demonstrating its necessity.

Figure 2 World trade and foreign direct investments, 1980–2004.



Source: Bruegel's calculations based on international sources.

Alternatives to global governance: national leadership

Furthermore, there are potentially efficient substitutes for global governance. The first is national leadership: countries holding a dominant position may *de facto* set rules for the global economy. This is typical of standards, which multinational companies need to apply to have access to corresponding markets. For example, US Generally Accepted Accounting Principles (GAAP) are used by all US-listed companies and have therefore become a reference in many emerging markets such as Brazil and Israel, whose companies are often listed on the New York Stock Exchange or Nasdaq. Similarly, product safety requirements in the EU are demanding and tend to be adopted by manufacturers worldwide, including products sold outside Europe, especially in matters over which the US has no corresponding regulation.

However, and notwithstanding issues of "hard" security which fall outside the scope of this paper, such rule-making patterns based on the "benevolent hegemonism" of one player are often not sustained over the long term. The hegemon may succumb to the temptation of using its position to serve short-term national interests and the followers may decide that their own interest is better served by alternative strategies. This is illustrated both by the recent tendency of many countries, including those of the EU, to endorse International

Financial Reporting Standards (IFRS) as an alternative to US GAAP accounting rules, and by the growing unease in the US about EU-originated product regulation.

Alternatives to global governance: market-based rulemaking

Another substitute for governance by global public institutions is a similar function, but exercised by private-sector organisations. Markets have the ability to self-organise without the direct involvement of international institutions and are generally faster in designing and reforming arrangements. This is especially true of financial markets, which have always been the spearhead of international integration and have developed spectacularly over the last 25 years.

It is worth recalling that the widespread financial liberalisation of the last two decades has taken place without countries entering multilateral negotiations and taking on formal commitments, at least at a global level. While public institutions participate in the monitoring of financial fragilities, private rating agencies such as Standard & Poor's and Moody's have established *de facto* global standards in the assessment of sovereign as well as private debts.

Private-sector global governance regimes are emerging as a significant component in global rule-making. The International Organisation for Standardisation (ISO, founded 1947), International Accounting Standards Board (IASB, founded 1973) or Internet Corporation for Assigned Names and Numbers (ICANN, founded 1998) are well-known examples. In addition, private initiatives in development assistance are making inroads into the traditional domain of public institutions.

As expressed by Francis Fukuyama (2006), "*The old realist model of international relations that sees the world exclusively organised around sovereign nation-states simply does not correspond to the world that is emerging, and it will not be sufficient to meet the needs of legitimacy and effectiveness in international action in the future. [...] Formal organisations acting on the basis of instructions that come up the accountability channels of sovereign states are too inefficient to suit the economic needs of the global economy. We have accepted a trade-off of legitimacy, transparency, and accountability for the sake of efficient decision making in the economic realm*".

This need not be regarded as a threat to the multilateral system. Governance through multilateral institutions and rules can coexist with market self-organisation and even identify positive synergies with it. Yet this does represent a challenge since governments and institutions need to adapt to the emergence of new forms of governance.

Alternatives to global governance: regionalism

The final alternative is regional governance. Regional institutions among countries sharing similar preferences could be a solution to the problem created by differences in preferences, even when externalities are truly global. To the extent that the rules adopted at regional level are mutually compatible and regional governing institutions are in dialogue with each other, the need for a global framework is reduced. International trade is an interesting case in which the expansion of regional arrangements now seems to be overtaking multilateral rules. Competition policy is another example. There is no global competition authority. However, the decisions of European and American authorities have extraterritorial impact, and there is informal co-operation among them. Both authorities are careful to avoid situations of blatant inconsistency between their mutual doctrines, even though they may differ in individual cases such as the high-profile cases on GE-Honeywell or Microsoft.

Furthermore, the contrast between global and regional approaches is probably not as sharp as it is generally portrayed. The reason is that rarely, if at all, are international externalities either purely global or purely regional. To the extent that externalities are instead both regional *and* global, they need to be addressed both regionally and globally, rather than at only one level. How this is done in practice varies greatly depending on the case.

Take the case of health. Today, all communicable diseases have a global dimension and require global solutions. At the same time, however, many communicable diseases have an important region-specific dimension. It makes sense, therefore, that the World Health Organisation (WHO) is in fact a network that comprises a global headquarters and six regional offices dispersed across the world, as well as national health institutions that are affiliated to both the global organisation and the respective regional body. What is remarkable is the balance between the regional and global components of the network, with roughly the same proportion of resources (personnel and budget) allocated to the six regional offices and the global headquarters in Geneva. Although the network aspect of the WHO is not entirely immune to problems, it certainly plays a crucial role in controlling the international spread of communicable diseases within and between regions.

There is no equivalent situation in the field of economic governance, though discussions on trade and IMF reform (Truman, 2006) have started taking the regional dimension into account. The IMF, the World Bank and the WTO have no regional office to which member countries are affiliated and which plays an executive role. Nonetheless, some form of regional arrangement exists in each of the domains pertaining to these three organisations, but the relationship between regional arrangements and global institutions is weak at best. Only in

the case of the WTO do the treaties foresee the possibility that member countries will form regional groupings and insist that they respect certain rules in doing so. However, the rules have been so weak that only one of the 130 or so regional trade agreements (RTAs) notified to the WTO has actually been formally endorsed by the organisation.³ Even worse, the Committee on Regional Trade Agreements (CRTA), which is supposed to verify the WTO compliance of RTAs, has generally been unable to reach a conclusion "due to various political and legal difficulties" (see Crawford and Fiorentino, 2005). Whether or not the new Transparency Mechanism for RTAs agreed by WTO members in June 2006 will actually "help break the current logjam in the WTO on regional trade agreements...[and constitute] an important step towards ensuring that regional trade agreements become building blocks, not stumbling blocks to world trade" (Lamy, 2006) remains to be tested. In the meantime, the relationship between regional trade agreements and the 'spirit' (if not the 'letter') of the WTO will remain tenuous.

The upshot is that there is probably less of a contradiction between multilateralism and regionalism than is usually thought, but that their coexistence needs to be organised. How rules and institutions to this end might be designed is probably one of the major challenges for the years ahead.

The cost of no governance

Global governance should therefore neither be dismissed nor considered the only possible way to manage economic globalisation.

It should not be dismissed primarily because there are issues that call for global collective action. This is obviously the case where there are high global externalities, such as for the global environment, global epidemics and global financial crises. In this respect, the current regime of global economic governance is incomplete in several important areas.

In a more subtle way, multilateral rules and institutions, although they may be painful to negotiate among a large number of countries with diverse domestic conditions, offer three advantages even when global externalities are only moderate.

First, they provide more security than *ad hoc* arrangements. In times of stress or tension, rules provide core principles to which to refer and represent legally enforceable commitments. Moreover, institutions offer a venue for settling disputes. A comparison between trade and FDI may clarify the point: global

³ This unique case is the customs union between the Czech Republic and the Slovak Republic set up after the break up of Czechoslovakia.

trade is based on clear principles (such as national treatment and the most-favoured-nation clause); the WTO treaty explicitly includes safeguard clauses and has established a dispute settlement mechanism. All of these elements are lacking in FDI. As a consequence, in the event of a dispute over a takeover, there can be no reference to universally accepted principles, no recourse to exceptional conditions, and no neutral venue for arbitration. This leaves the prevention of unilateral action and retaliation to the wisdom of states.

In other words, strong rules and legitimate institutions may help to ensure the resilience of global economic integration. While they are certainly no panacea and their ability to resist pressure should not be overestimated, in times of crisis and threats to economic integration, rules and institutions provide a valuable response.

Second, global institutions give a voice to all countries big and small and are accountable to these countries. Critics may complain about the distribution of votes and seats or about the lack of effective accountability, but global institutions ensure a degree of fairness and ownership which other solutions necessarily lack. This, also, is a contribution to the stability of economic integration. This stability, however fragile, would be lacking in a multipolar world in which integration would be driven by private initiatives only, without the legitimacy provided by global rules and institutions.

Third, institutions are a form of capital and can themselves be viewed as global public goods (Kindelberger, 1986). This is because established institutions which can rely on founding principles and internal governance rules can help in tackling new issues as they emerge. They help in cutting negotiation costs and avoiding the long and painful process of defining a collective response. Well-designed and well-governed institutions are therefore an asset to all participants in the world economy.

Yet like all public goods, global public goods are subject to the free rider problem since their benefits are available to everyone. Hence, although everyone would be better off if countries agreed to provide global public goods, it is normally in the interests of individual countries to allow others to bear the cost. The result is that global institutions are difficult to set up and difficult to maintain. The aftermath of World War II provided an exceptional set of circumstances that served as a catalyst for building both the multilateral system and regional institutions in Europe. In Asia, the 1997–1998 financial crises seem to have played a similar, albeit more limited role.

The tasks ahead

In sum, the main challenge for the years ahead is to adapt the global governance system to the new global reality: a larger and more diverse set of countries; new priorities such as migration, climate change and energy security; geopolitical conditions that deeply differ from those of the previous decades; the rise of new powers with strong national sentiments; the irreversible development of regionalism; and shifting borders between the realms of public regulations and market self-organisation. This will require initiative and leadership. We now turn to the question of what role Europe can play in such a process.

4 THE EU AND GLOBAL GOVERNANCE

If anything characterises Europeans' attitude towards global governance, it is ambiguity.

A champion of global rules

On the one hand, there is a natural synergy between an effective EU and an effective global governance regime. In international economics as elsewhere, the EU is the champion of rules (Läidi, 2005). The reason for that is straightforward: unlike most states, which originated in unilateral conquest, the EU is itself a rules-based endeavour. The entire history of European integration since 1950 has been a patient but consistent attempt at rebuilding intra-European relations on the basis of a system of laws, rules and decision-making procedures. It is therefore quite natural for the EU to envisage international relations in the same way and to champion global governance. Hence, for example, the EU's active role in the creation of the International Criminal Court and the Kyoto protocol on global warming, both of which were rejected by the United States. Robert Kagan famously characterised Europe as being "from Venus" and as "moving beyond power into a self-contained world of laws and rules and transnational negotiation and cooperation" (Kagan, 2002). This may also be linked to the EU's possibilities to project power abroad. The EU has many means of exercising "soft power" internationally and is increasingly doing so. By contrast, the exercise of hard power by the EU's members and partners generally tends to weaken the Union, as has been most graphically illustrated by the conflict in Iraq. The EU is naturally more comfortable in a world of procedures and negotiations, and would have much to lose from a deterioration in multilateralism.

European public opinion is also very sensitive to the issue of globalisation and Europeans expect the EU to help “manage” it. In a 2003 survey⁴, 56% of EU15 respondents said that globalisation needed more regulation and 61% trusted the EU to ensure that globalisation moved in the right direction. Europeans also consistently assign to the EU, rather than to member states, responsibility for participating in global governance. For example, a recent survey indicates that 77% of respondents in the EU25 would like more decisions regarding the promotion of peace and democracy in the world to be taken at EU level. The corresponding proportion is 72% for the protection of the environment and 70% for the prevention of major health problems⁵. The notion that there are global issues which should be tackled by the EU rather than its member states seems to receive strong support among Europeans.

Finally, Europeans have a major stake in the global governance regime. With the exceptions of the United Nations and the WTO, which are based on the one-country-one-vote principle, most international institutions have an internal allocation of power that reflects the world of yesterday rather than today, and Europe is, nominally at least, the biggest beneficiary of this (Table 1). This is particularly true in the Bretton Woods institutions, where the EU controls about one-third of the seats and the voting rights, not an oversized share in reference to current GDP, but a clear overrepresentation by most other measures. As observed by Vijay Kelkar et al (2005), the combined votes of Brazil, China and India in the Bretton Woods institutions are about 20% below those of Italy, Belgium and the Netherlands, while their combined GDP at market exchange rates is 23% larger, their combined GDP at PPP exchange rates is four times larger, and their total population is 29 times larger. These are astonishing figures, which may explain why Asian countries feel that they have so little ownership over the Bretton Woods institutions. The quota revision proposed by the IMF for adoption at its 2006 Singapore annual meeting does not significantly change this overrepresentation: it would reduce the EU share from 31.9% to 31.3%.

⁴ Special Eurobarometer survey on globalisation, November 2003.

⁵ Eurobarometer survey on the future of Europe, May 2006. The survey did not include specific questions on the economic governance of globalisation.

Table 1 Weight of the EU in international economic and financial institutions.

Institution	Votes*	Current-dollar GDP 2005	PPP-based GDP 2005	Population
	EU Share	EU Share	EU Share	EU Share
G7**	57.1 (4 of 7)	32.8	31.0	36.4
G8**	50.0 (4 of 8)	31.9	29.2	30.3
G20**	25.0 (5 of 20)	25.1	16.9	6.5
OECD		38.1	36.9	38.5
<i>membership</i>	63.3			
<i>financing</i>	39.8 (19 of 30)			
IEA	65.4 (17 of 26)	38.3	36.9	39.8
IMF/WB***		30.3	21.0	7.2
<i>membership</i>	13.6			
<i>quotas****</i>	31.9			
<i>control</i>	33.6			
<i>seats</i>	29.5 (25 of 184)			
WTO**	17.4 (26 of 149)	31.7	22.6	8.1
<i>memorandum</i>				
UN		30.3	20.9	7.2
<i>membership</i>	13.0			
<i>financing</i>	36.5 (25 of 192)			

Missing Data: Myanmar

(*) Figures in brackets refer to the share of EU members of the total number of members.

(**) The EU is not included in calculations for the G7 and G8 since it is not a full member. The G20 has 19 members, plus the EU as an institutional member. In the WTO, the "European Communities" are counted as a separate member.

(***) For the IMF and WB, "membership" gives the proportion of EU countries out of total member countries, "votes" their share of the total quota-based votes, "control" the proportion of votes they control, assuming a country holding the chair controls the votes of members within its constituency.

(****) Before the quota revision tabled for the Singapore annual meeting.

Source for GDP and population: World Development Indicators database, World Bank and The World Factbook, CIA, 12 August 2006.

An accidental player

That said, Europe's behaviour more than occasionally contradicts its stated goals and apparent interest in global governance. Although claiming to be a champion of multilateralism, the EU has in fact contributed towards challenging it by taking the initiative in negotiating an array of regional trade agreements. While all major players have now developed a regional strategy alongside their participation in multilateral institutions, it is the EU which created this trend (Sapir, 1998).

Moreover, the EU does not really play a role in global governance commensurate with its representation. The EU is undoubtedly a major player in international trade negotiations, where it has clearly-stated priorities and the ability to push for them. Whatever the negotiation setting, it plays a part in the game. The EU has also played a key role in the negotiation of the Kyoto protocol; after the US withdrawal, Europe has taken the lead in pushing for ratification and implementation. However, the EU has kept a strikingly low profile in global macroeconomic issues. In stark contrast to the US, Europeans have not expressed any strong views so far on issues such as the unwinding of current account imbalances or the Chinese exchange rate. On the euro-dollar exchange rate, several mutually inconsistent opinions have been expressed by Europe's ministers of finance and central bank governors. On the nature and speed of the US current account adjustment, Europeans have more than once given the impression that their best hope is for exchange rate stability, while routinely exhorting the US to fiscal discipline and a correction of its external deficit. On the Chinese exchange rate, Europe has tended to follow the US lead, although Europe's interests may differ substantially from those of the US. Euro area policymakers thus seem to have refrained from drawing conclusions from the new *de facto* world status of their currency.

On international finance, Europeans have certainly been part of the conversation within the G7, the G20, the Bretton Woods institutions and other public forums. They may even claim some successes, such as the partial reform of IMF governance through the creation of the International Monetary and Financial Committee (IMFC), or the so-called involvement of the private sector in crisis resolution. However, careful analysis of the discussion shows that Europeans have rarely set the agenda. They have often responded to new developments in a reactive manner, slowly adapting to events and adjusting to new (frequently US) proposals, and have almost never pushed for radical new ideas. The US behaved throughout the financial crises of the 1990s as the (most frequently, but not always, benevolent) hegemon of international finance. The EU did not behave as a world monetary and financial power⁶. Here again, the EU's effective

⁶ Riccardo Faini, a former Executive Director with the IMF, and Enzo Grilli (2004) have attempted a quantitative measurement of the influence of the US, the EU and Japan in IMF and World Bank

role does not seem to be commensurate with its members' representation in the Bretton Woods organisations.

Rather than being a consistent pillar of world economic governance, the EU can thus be characterised as an accidental player (Pisani-Ferry, 2005) – one which, depending on the issue, is sometimes at the table and sometimes absent, sometimes vocal and sometimes silent.

The root causes: incompatible views, or plain bad decision-making?

Why is this so? The two main hypotheses explaining the EU's inconsistency in global economic governance are: (1) there are issues on which the EU is too divided to act, because preferences differ among its constituent member states, and (2) dysfunctional internal governance prevents the EU from being more assertive. If the first hypothesis is true, there is little the EU can do to become more effective. If the second is true, internal governance reforms are in order.

The preference heterogeneity argument has some weight. Within an increasingly diverse EU, there are many reasons why preferences should differ and this diversity should affect international economic relations. From cultural and policy traditions to degrees of openness and patterns of trade and financial integration, several factors can explain why the EU countries may have difficulty in finding common ground on global issues.

However, this is first and foremost true for international trade. From development levels and specialisation patterns to the functioning of labour markets and to domestic political institutions, there is every reason to consider that the economics and the political economy of trade liberalisation differ widely within the EU. Actually, surveys consistently indicate wide differences in public attitudes towards trade liberalisation within the EU. Despite these differences, the EU *does* have a common policy for trade.

This leads to the dysfunctional governance hypothesis. The EU has put complex and diverse arrangements in place for organising its international economic and financial relations with the rest of the world. In some fields, policy responsibility is fully delegated to an EU institution – in most cases, the Commission or the ECB – which has been given a clear mandate to act. In others, responsibility is divided between member states which may endeavour to co-ordinate their

decisions by assessing whether the geographical lending pattern of those institutions reflects their respective bilateral trade or financial relations patterns. Their results suggest that the US and the EU are both influential, but the former more so than the latter. They especially contrast the importance of both trade and financial links for the US with the absence of any discernable influence of the EU's financial links. This is an admittedly rather indirect measure subject to technical discussion, but it corresponds well with the casual observation that the US financial community is much more concerned by, and vocal on, IMF issues than its counterpart in Europe.

views. It could be the inefficiency of some of its governance mechanisms that prevents the EU from playing the role it might.

An illustration: the EU and the IMF

Apart from being important in itself, the IMF provides an interesting testing ground. It is an institution in which the EU is at once overrepresented in terms of numbers and underrepresented in terms of its voice. According to Lorenzo Bini Smaghi, who prior to his appointment to the board of the European Central Bank was involved in the co-ordination of European positions in international monetary and financial affairs, *"if EU countries wish to improve their collective influence in international issues and the IMF, some institutional changes in the way European interests are represented and promulgated may be necessary"* (Bini Smaghi, 2004).

Moreover, for reasons already given, a reform of global economic and financial institutions that would rebalance power within them is not simply a matter of fairness; it is also a necessary (though not self-evidently sufficient) means of ensure a sufficient degree of ownership of the multilateral system by emerging countries. The EU has every interest in encouraging all countries to rely on the multilateral system. The more unbalanced this system, the stronger the temptation will be for those who feel underrepresented to look for alternative solutions, especially (but not only) in East Asia.

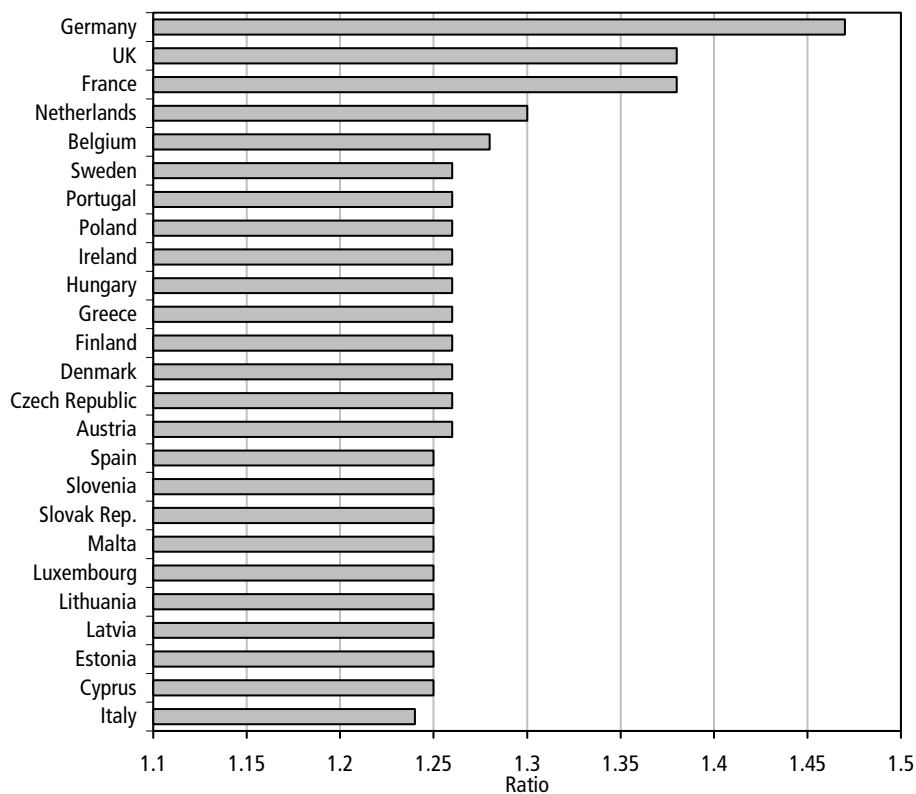
Pressure is mounting for a redistribution of power. The 2006 Singapore quota revision is explicitly regarded as a first step in a process that would lead, by 2008, to a more substantial rebalancing. The US administration has unambiguously expressed its support for this rebalancing. Europeans, however, are tempted to procrastinate. Among them, the question of common representation remains divisive.

The IMF voting structure allows us to compare various arrangements in terms of power, using the standard game theory indices that measure a player's power by how frequently he is likely to be the swing voter in a decision. To be sure, there are very few instances in which IMF executive directors actually vote. Nevertheless, the underlying power structure serves as a benchmark against which players measure their influence. The fierce controversies associated with each quota rebalancing are a clear indication that the issue matters a great deal.

In a recent paper, Bini Smaghi (2006) finds that, if they were to form a coalition, the EU-25 member countries would be by far the dominant power in the IMF with a voting power index of 48% – the next one being the US with 7%. An important issue, however, is whether individual member states would gain or lose from entering such a coalition.

On the face of it, they would all gain considerably. Suppose that EU countries decide to pool their votes in a single European seat and that this seat is granted the same voting power as the United States (not an unreasonable assumption in view of the quota formula and the balance of power within the Fund). Further assume that the internal EU decision is determined by simple majority voting using the current IMF weights. Under these conditions, a calculation by Leech and Leech (2005), based on power index methodology⁷, shows that all EU countries would gain voting power in the IMF (Figure 3).

Figure 3 Potential increase in EU countries voting power through forming an EU caucus within the IMF.



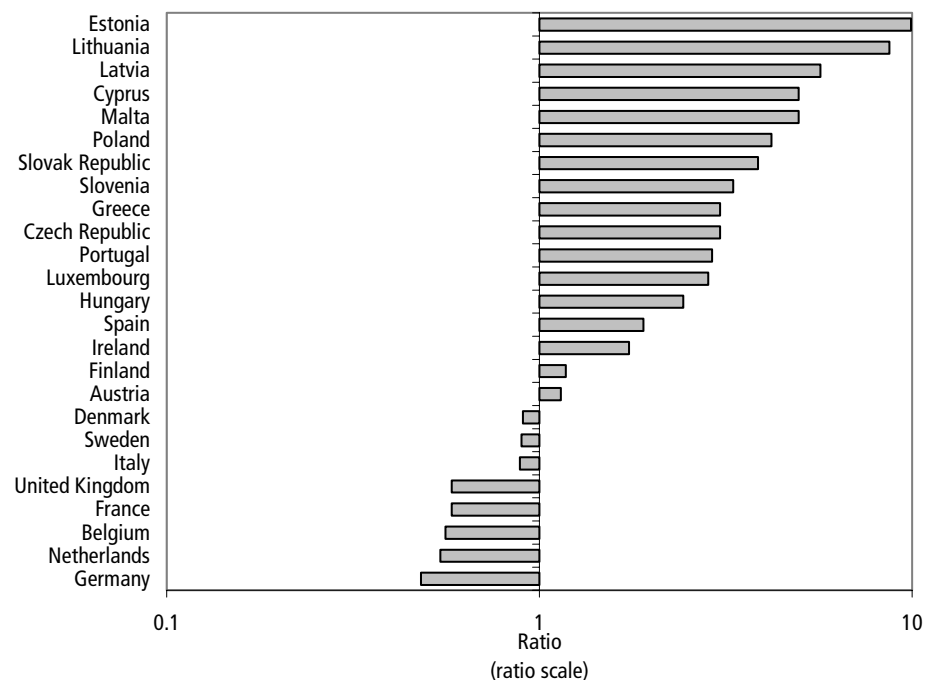
Source: Bruegel calculations on the basis of Leech and Leech (2005).

However, IMF quotas substantially differ from EU voting weights and a common representation of the EU would use EU weights and voting rules, rather than IMF quotas or votes. This raises the issue of power redistribution among EU countries. As shown in Figure 4, merging EU members' representation in the

⁷ Formally, the power index for any EU member is calculated as a product of two Penrose indices, one measuring the power of the single EU seat and the other measuring the power of the member in internal, EU decision making.

IMF based on EU voting rules would create both winners (Poland, Spain and the smaller countries whose votes count more within the EU) and losers (Germany, the UK and France, as well as some medium-sized countries such as Belgium and the Netherlands). The extent of this redistribution is significant because the current (Nice) EU voting system⁸ is much more biased in favour of small countries than the IMF system.

Figure 4 Net relative gains involved in a move from IMF voting weights to EU weights.



Source: Bruegel calculations on the basis of Leech and Leech (2005).

However, this picture overlooks the fact that a member’s voting weight is not the same as its voting power. This distinction is crucial. An individual EU member’s power in the IMF under a unified representation would depend on both a member’s power to determine the EU vote in the IMF and on the aggregate voting power of the single EU seat – which could in theory make all countries winners, even though the size of the gain would not be uniform.

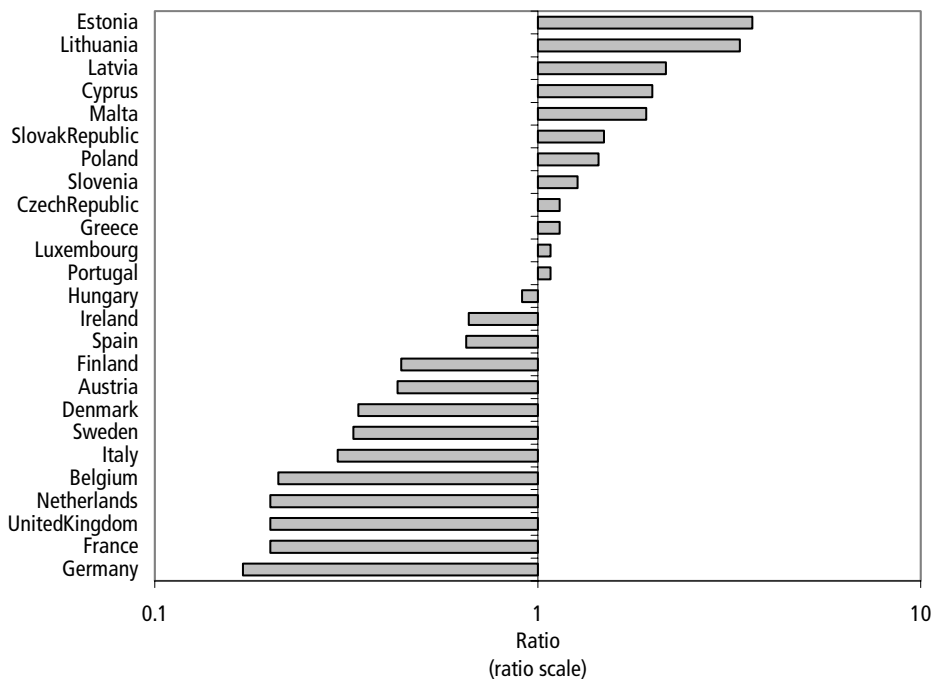
However, there would actually be more losers in this move since internal EU decisions would need to be determined by the notoriously inefficient system of qualified majority voting established by the Nice Treaty (Figure 5). This is because the large supermajorities required to make a decision under the Nice

⁸ The draft constitution retained a similar system.

system would in fact prevent the EU from benefiting from its power within the Fund. The largest countries would logically be the biggest losers.

The calculations presented here should not be taken at face value. What they indicate is that the large countries would lose power in the IMF on issues on which the EU is internally divided. They would still gain, however, on issues where there is a clear majority opinion within Europe. Two conclusions can nevertheless be drawn from this analysis. The first is that internal governance matters considerably and that the EU's role in global governance cannot be discussed without reference to it. This lends support to the hypothesis that Europe's sometimes haphazard behaviour in international fora is due to its internal rules.

Figure 5 Potential change in EU countries' voting power through creating an EU chair within the IMF (Nice voting system).



Source: Bruegel calculations on the basis of Leech and Leech (2005).

The second conclusion regards the Bretton Woods institutions. The prospect of losing influence through both a reduction of voting weights in the IMF and, possibly, the merger of European representations, might serve as a justification for defending the status quo. Procrastination, however, would be a costly mistake. Europe's share in world GDP is rapidly declining as a consequence of its demography and the accelerated development of major, emerging countries. It

is bound to decline further – and fast. In institutions, however, compromises on power-sharing tend to be lasting and to perpetuate a certain distribution of power long after it has disappeared in the real world. The more the adjustment is delayed, the less economic and political weight Europe will have when it takes place, and the less likely it is to be able to negotiate a satisfactory arrangement.

5 IMPLICATIONS FOR EUROPEANS

This paper has argued that because the state of global economic governance is anything but stable, the European Union needs more clarity of vision for the debates ahead. The policy implications of our analysis can be summarised into three main points.

1. **Global economic governance matters.** There could be a sense that the apparent loss of purpose of many global institutions – the UN deemed ‘irrelevant’ by the US, the World Bank squeezed out by the private sector, the drying up of IMF lending activity, the WTO negotiations stalled without a clear prospect of revival – is not a matter of significant concern. After all, security issues are dealt with outside the UN, the expansion of financial markets is welcome, emerging markets are becoming more stable, and international trade is booming, to name a few examples.

However, downplaying the importance of global institutions would be a costly mistake. While some missions of global institutions have indeed been rendered obsolete, others are more crucial than ever in the current age of unprecedented economic interdependence. The long-term sustainability of current trade patterns is heavily dependent on a functioning multilateral framework. Financial stability problems will again arise, and the IMF remains the best available tool for monitoring and preventing the corresponding risks. Furthermore, global institutions can be extremely helpful in times of crisis since they provide ready-made channels for communication and co-ordination.

The absence of global economic institutions in certain areas is also a source of concern. Problems which call for new forms of global economic governance are becoming more serious, and disaster may loom if they remain unaddressed. Most prominently, this represents the case for the economic mechanisms designed to prevent and address global warming. The problem of global natural resources (including fossil fuel and water) is also increasingly likely to require attention.

2. **Reform is needed.** A first obvious area for action is on trade, where regionalism is both a fact and a natural response to the diversity of preferences in the world economy. But for regionalism to support rather than undermine multilateralism, principles need to be agreed and

safeguards need to be defined. Being itself the archetype of a strong and successful regional grouping, the EU ought to contribute constructively to this conversation.

The Bretton Woods institutions are another area for immediate reform. EU member states should be proactive in specifying a mandate for the EU as a catalyst for reform of the IMF's and World Bank's governance. This is a necessary (if not sufficient) condition for ensuring the legitimacy of these institutions, which have played a helpful and important role in the past and will do so again in the future.

Third, Europeans should see it as their responsibility to ensure the emergence of a globally shared approach to address the causes and consequences of global warming. It is becoming increasingly obvious that the EU's adherence to the Kyoto Protocol is not sufficient in facing the challenges posed by climate change.

Beyond these steps, it could be argued that there is a need for a more political institution that defines priorities and steers institutional changes when needed. The G7, which accounts for about 40% of world GDP and 10% of the world population, no longer has the legitimacy to fulfil this function⁹. Various proposals have been made, including the creation of a G20 at head-of-state level (accounting for about 80% of world GDP and 60% of the world population)¹⁰. However, it remains to be seen how far such a device could go in creating the genuine prospect of collective action given the diversity of the participants.

3. **External influence requires efficient internal governance.** In particular, the ability of the EU to act as a global player is often hampered by inefficient internal arrangements. This should not be read as a plea for the federalisation of external representation. Member states can retain control rights through the definition of a mandate and the supervision of its implementation. But the reform of the EU's external representation requires a definition of the ways in which various national views are mediated and external representatives are monitored. There would be no point in aiming at more external influence while also preventing its establishment due to an internal inability to reach a decision.
4. **The European Union can no longer hide behind the US.** For the economic and political reasons that have been developed in this paper, the US is less ready than at any time since World War II to exercise constructive leadership in global economic governance, and this trend is unlikely to be reversed any time soon. European policymakers should be ready to assume the responsibilities that shifting patterns of leadership may imply for them.

⁹ Measured at purchasing-power parity exchange rates.

¹⁰ See Linn and Bradford (2006). Kenen, Shafer, Wicks and Wyplosz (2004) propose the creation of a Council for International Financial and Economic Cooperation of at most 15 members.

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