

EU Membership and the Drivers of Productivity and Growth

Summary:

Improvements in productivity are key to the long-term growth of the economy, and to maintaining competitiveness in the context of globalisation. The UK policy framework for productivity is focused on five drivers: competition, investment, entrepreneurship, innovation and skills.

UK membership of the EU, and particularly the Single Market Programme, can play a key role in strengthening four of these five drivers (the EU has little role to play in education and skills policies). Regional integration leads to more competitive markets, encouraging efficiency and reducing mark-ups and price dispersion. Integration also spurs greater investment, both by domestic firms faced with greater competition, and from both other Member States and outside the EU. There is evidence of greater turbulence in market leadership as integration has continued, and there is empirical evidence that this has contributed to productivity growth in the UK. Firms which invest abroad are often close to the technological frontier and can cause productivity 'spillovers' to the host country. Attracting investment to emerging clusters with agglomeration economies (made more important by the larger returns from a larger EU market) can be important for determining future industrial development. The larger market and greater competition also encourage enterprise and innovation, offering greater rewards, and in turn encouraging more competitive behaviour by incumbents. The UK is also a significant beneficiary of EU R&D funds, but more importantly, there are significant economies from coordinating research activity across Member States.

However, there are important barriers to realising the potential productivity gains from regional integration in the EU:

- Over-burdensome red tape and regulations can deter entrepreneurship and hold back the development of more competitive markets.
- Barriers to competition still remain across EU markets, in particular in services and the network industries, and benefits from increased competition here could be significant. The lack of competition could in turn limit investment in these sectors. The EU would also benefit from being more open to competition from outside the Union.

Traditional exogenous growth theory suggests growth benefits from regional integration:

- First, from greater openness and increased trade enabling specialisation, and

- Second, efficiency improvements based on comparative advantage and economies of scale.

Reduced trade barriers and transaction costs should result in realisation of these benefits.

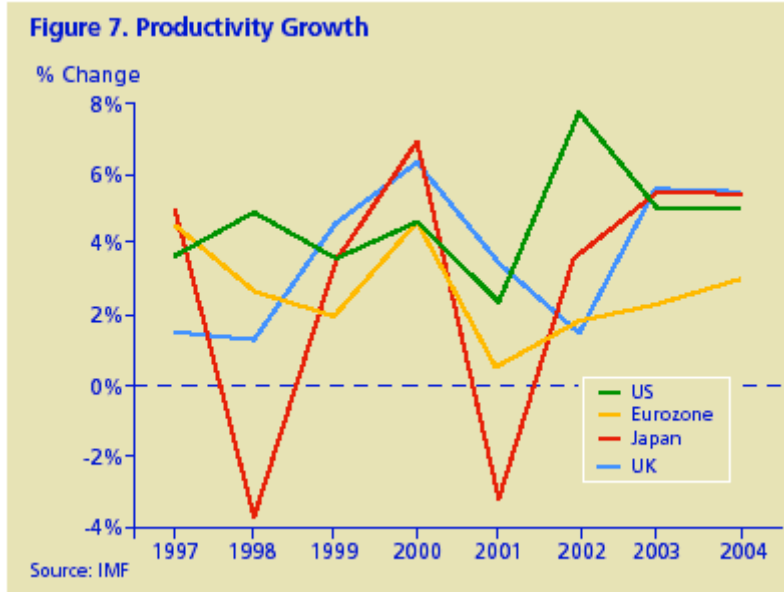
However, most trade between EU countries (and between most developed economies) is *intra-industry*, rather than the *inter-industry* exchange of goods and services implied by exogenous growth theories, which predict convergence between countries in the longer-term¹. Newer endogenous growth models focus on technical change and productivity improvements, which are essential to raise trend growth in the longer-term. Endogenous growth theories demonstrate how trade allows firms to reorganise production on a larger and more efficient scale, with firm level specialisation where firms focus on either goods at different stages of the production process, or items designed for niche markets. Economic integration, leading to growth in trade along with strengthened incentives for innovation, specialisation, and the potential for greater returns on investment, can drive the technological progress essential to increase trend growth.

These endogenous growth models show clearly that in the long run, the only way to maintain strong trend growth is through productivity improvements, developing new technologies and processes to make more effective use of the resources available. Maintaining a supportive economic environment for productivity growth should therefore be the focus of institutions, policies and reforms in the EU.

In globalised markets, maintaining low costs is not the only route to productivity growth. The existence of increasing returns to scale, and clusters of skill-intensive firms and industries can attract firms to even high cost areas and promote innovation and investment. These agglomeration economies, particularly prevalent in high technology, high performance industries, can drive productivity growth in certain localised regions, and develop new clusters contributing to long-term growth. This is consistent with the New Economic Geography theories. Agglomeration is important because evidence suggests that an economic mass boosts productivity, driven by external economies of scale derived from skilled labour, a network of specialised suppliers and markets, and information spillovers. This can play an important role in determining the path of future industrial development.

If membership of the EU can strengthen the drivers of productivity growth, this will be particularly beneficial for the UK, which suffers from a productivity gap with its major competitors, such as the US and France. This productivity gap has been present for many years, but the chart below shows that, in relation to eurozone economies, the UK has been improving its position over recent years.

¹ If economies have similar tastes and technologies, trade and factor price equalisation leads to convergence to a steady-state – poor economies tend to grow faster than richer ones.



The chart below shows the growth in value-added per worker in UK manufacturing. Following a slowdown and decline, there appears to be a return to rapid productivity growth between 1989 and 1995, over the period of implementation of many of the Single Market reforms.

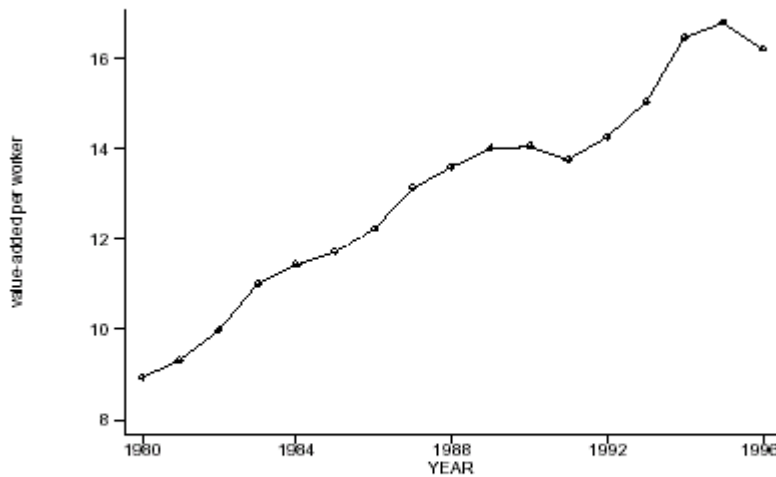


Figure 4: Value added per worker (in 1980 UKE,000) in manufacturing
Crossed up ARD sample

The five drivers of Productivity (and growth)

Productivity improvements can stem from increased labour productivity (through improved skills and labour utilisation) and from improvements in total factor productivity (whereby technology and innovation increase the capital intensity and efficiency of production and processes).

The Government's strategy for closing the UK's productivity gap has two broad strands: maintaining macroeconomic stability to help businesses and individuals plan for the future; and implementing microeconomic reforms to remove the barriers that prevent market from functioning efficientlyⁱ.

The five (interlinked) drivers identified as key areas for focusing productivity policy are:

- Competition – puts downward pressure on costs and prices, driving innovation and business efficiency, and delivering a better deal for consumers
- Investment – stronger, more efficient capital markets will increase the stock of physical capital, and the presence of foreign multinationals (generally located on the technology frontier) can have spillover benefits in terms of technology, productivity and processes, in turn creating a more competitive atmosphere.
- Enterprise – by removing barriers to entrepreneurship, promoting an enterprise culture, and delivering a new and radical approach for improving the way that regulations are made and enforced across the public sector to deliver genuine reductions in the burdens on business
- Innovation – promote the development of new technologies and more efficient ways of working. Increasing rewards to innovation mean that the UK (and the EU) will increasingly need to develop new areas of knowledge and translate it into innovative goods and services. Enhanced investment in human capital and R&D is necessary to stimulate technological progress and strengthen productivity and growth.
- Skills – create a more flexible and productive workforce, which can adopt innovative technologies and enable individuals to move into new areas of work

If membership of the EU works to reinforce these five drivers in the UK, it will have a positive effect on long-run UK growth and welfare. However, this in part depends on the success of the UK and other like-minded Member States in pushing the reform agenda to create an environment more conducive to productivity growth.

EU Growth is good for the UK

The UK will also gain from stronger growth and productivity in the rest of the EU, and as such it is in the UK's own economic interests to remain a force for further reform within the Union. Given the strong trade relationship – the EU is the UK's largest export market - the UK will experience direct benefits from stronger EU growth stemming from the strong trade relationship and, in the longer-run, stronger competition from a more productive Europe will stimulate dynamic benefits in the UK by encouraging productivity growth and enabling innovation spillovers.

However, in recent years the EU's growth and productivity performance has been disappointing, and consequently this too can have knock-on effects for

the UK. For example, trend growth in the eurozone over the last two decades has averaged around 2% per annum, compared to 3% in the US. In 2004 the weakest growth in the euro area was in Germany, the Netherlands and Italy, which together account for over half of eurozone GDP, and over 40% of UK exports to the euro area. Low labour market participation in the EU, particularly in eurozone countries, and low labour productivity per hour imply that there is potential for significant economic growth, if structural reforms are successfully embraced. A recent OECD surveyⁱⁱ of the eurozone predicted that, given the ageing population and without significant reform, the eurozone's growth rate would fall to around 1% per annum by about 2020.

Euro area	Average annual growth rate				
	1995-2000	2000-2005	2005-2010	2010-2020	2020-2030
Trend employment	0.7	0.8	0.3	-0.3	-0.7
Trend labour productivity	1.2	1.2	1.6	1.6	1.6
Trend GDP	2	2	1.9	1.3	0.9
Population	0.3	0.3	0.2	0.1	0
Trend GDP per capita	1.8	1.6	1.7	1.2	0.9

How does EU Membership affect the five drivers

The reduction of trade barriers within Europe since World War II, and in particular since the formation of the EU, has provided UK and European producers with access to a larger market, which created greater potential for exploiting economies of scale and encouraged specialisation, and so had a positive effect on growth. In addition, the reduced barriers to trade can also have second-order dynamic effects to increase productivity and long-run growth.

The Single Market Programme (SMP) and the Lisbon Agenda are key areas of EU integration and economic reform that the UK has championed within the Union, which can work to reinforce the Government's policy focus on the five drivers of productivity.

The SMP has focused on removing the remaining informal and formal barriers between Member States, and so aimed to stimulate more competitive European markets. It aimed to remove barriers under three headings – physical, technical and fiscal – and was accompanied by a strengthened competition policy to prevent the development of pan-European oligopolies or monopolies that could abuse market power. The European Commission's ten-year review of the Single Market estimated that EU GDP would have been 1.8% lower in 2002 without the Single Market programme. The Lisbon Agenda launched in 2000 was also aimed at creating a more competitive and dynamic economy through further structural reforms.

We now consider the consequences of EU membership for each of the five drivers.

1. Competition

The elimination of barriers between Member States should create a more competitive market and in turn make industries become more productive. To survive in a larger and more competitive 'home' market place, firms are driven to reduce their rents and mark-ups, reduce slack and use their resources – labour and capital – more efficiently, putting downward pressure on costs. There will also be greater incentives for innovation – discussed later.

Greater integration of product markets (due to reduced cost of trading in other EU countries) reduces barriers to entry for new firms, and with more competition one would expect to see reorganisation / restructuring across the EU market, with resources moving to competitive new entrants and the most productive incumbents, and inefficient firms exiting the marketplace.

There is a large body of literature demonstrating how effective competition drives productivity (and therefore growth potential) through creating incentives for firms to reduce costs and increase quality and choice, and improving resource allocation across the market. In particular:

- Nickell (1996) and Blundell, Griffith and van Reenan (1995) find that competitive pressures (measured in various ways) have a positive impact on the efficiency of firms and on growth in their productivity. Lack of competitive pressure, measured by supranormal profits and size of market shares, has a negative impact on future productivity growth.
- Geroski (1990) concludes that concentration and other measures of market power tend to reduce the rate of innovation and hence productivity growth.
- Caves and Barton (1990) find that increases in market concentration are associated with reduced technical efficiency, consistent with the view that competition leads firms to adopt more efficient and effective decision-making structures.
- Barnes and Haskel (2000) attribute between 30 and 50 percent of UK and US productivity growth to entry and exit rates.
- Caves (1998) finds that new entrants bring with them higher levels of productivity.

A strengthened EU competition policy can help to ensure that market power is not abused across the Union and integrated markets have a positive effect on efficiency and growth. Firms with dominant market shares and supranormal profits will have a negative impact on future productivity growth. It is therefore important to maintain market contestability and the potential for entry by new firms – a critical component of effective competition, affecting firm behaviour even when actual trade flows do not increase.

The positive dynamic effects of competition from EU membership and the Single Market would be expected to vary across industries, depending on sector characteristics, such as e.g. relative openness prior to the SMP, market structure, firm size, ownership, etc. A greater impact from market integration will be expected when:

- there is a high potential degree of trade between EU countries
- SME's play an important role in maintaining competitiveness of the industry
- There is less scope for product differentiation
- High potential for M&As and restructuring
- Consumers can effectively exercise choice
- Sunk costs are similar for all new entrants.

The UK has always been a relatively open economy, and therefore could potentially have relatively less to gain from market integration with the EU. Nevertheless, a stronger, more competitive EU as the UK's major trading partner will in turn encourage productivity improvements in the UK, which currently faces a productivity gap with countries such as France. New economic geography theories also suggest that the first mover advantage the UK has gained from earlier liberalisation and early development of high technology industries could mean that productivity improvements in certain clustered industries are self-perpetuating through agglomeration effects. The existence of greater external economies of scale in these industries will attract more firms to co-locate in the area as markets become more competitive. Co-location can be important for developing new, emerging industries.

It could be considered that the productivity benefits of EU Membership and the Single Market will become less importance as we move towards an increasingly globalised world, with continuing market liberalisation. However, this does not take into account that liberalisation of global markets is highly unlikely to occur to the same degree as intra-EU liberalisation and market integration. The dynamic benefits from the completion of the Single Market will therefore drive UK (and EU) firms to be increasingly competitive, and consequently they will be better placed to compete in more open global markets. Moreover, if the UK continues to be a force from within encouraging a more outward-looking Europe, these effects will be further magnified by greater international competition in EU markets.

In addition, the importance of the EU as a market for UK firms will remain, particularly for some sectors where, for reasons of geography, the European market will remain more important. These could include, for example, fresh and perishable products, logistics and distribution.

Evidence

The available evidence shows that competitive pressures have increased over periods of EU integration, and that this has contributed to productivity improvements. However, some significant barriers to competition remain, particularly in services, and further market integration and reforms are essential to maintain pressure on productivity growth.

The elimination of barriers to trade in goods immediately increased the level of competition faced by firms in EU Member States, reinforcing incentives to become more efficient. The Commission's review of the Single Market in 1996 demonstrated that there is increased competition at both micro- and

macroeconomic levels, but does not take this further and try to quantify the effects on productivity. However, Notaroⁱⁱⁱ estimated that the Single Market led to a productivity boost in sensitive sectors – those with relatively high or moderate barriers prior to the reforms – of around 2% in 1992 and 1993 across the EU, with margins reducing by around 2% per annum since 1987 – although the effect will vary across individual Member States. This upward trend in productivity will have continued beyond 1992 as reforms were implemented, particularly in years of strong growth.

However, barriers to competition remain in the EU. Looking at the Eurozone, the ECB estimated that a lack of effective competition was costing euro area countries around 12.5% GDP. Competition could be improved by product and labour market reforms. In particular, barriers to competition in services trade remain as significant barriers to entry to Member States' markets. In the 2005 Eurozone survey, the OECD stated that *'as long as these remain in place, there are unlikely to be any significant additional effects of regulatory policies on economic performance in the euro area going forward'*. The services sector now accounts for 70% of the economy, so reforms in this area will have important effects

Prices

Both the aggregate price level compared to other countries, and price convergence between Member States are indicators of competitive pressure and contestability. Another is the mark-up of prices over costs. In all of these the literature suggests evidence of a Single Market effect, although there are still additional benefits to be realised.

Allen et al estimated that price competition has led to an average reduction in prices of 3.9% in manufacturing in the big four Member States. An OECD study^{iv} in 2004 provides a brief literature review of price dispersion in Europe:

Authors	Period	Scope	Results
European Commission, 1996	1980-93	Price indices for detailed product/service categories collected by Eurostat through regular surveys of final price levels in the 15 EU member states	Convergence accelerated following the launch of the Internal Market programme
Dresdner Kleinwort Benson Research (DKBR), 1999	..	Price surveys for EU and US cities, 56 products	For all but four products, price dispersion is greater in the EU than in the US.
Engle & Rogers, 2001	..	Aggregate CPI for 55 cities across 11 euro area countries	Border effects have declined over time and can be largely explained by exchange rate fluctuations.
Haskel & Wolf (1999, 2001)	1998	IKEA products in 25 countries, including 11 EU countries.	Price differences are mostly due to the local level of competition.
DKBR, 2000	1999-2000	..	Price dispersion is about twice as high across EU member states

			than between them.
Financial Times, 2000	November 2000	Cost of living index in 155 cities	Dispersion of price levels across 15 EU capital cities is 9.8 percent, whilst it is 7.5 percent in the euro area and 5.8 percent in the US.
European Commission, 2001a	..	Price Survey on groceries. 68 product categories including branded and non-branded products.	Cross country dispersion is on average four times higher than dispersion inside countries. Large differences in dispersion across countries for different products.
European Commission, 2001b	..	Comparison of price dispersion in the European Union with that in the United States (1985-99).	Higher price dispersion in the EU mainly the result of higher price dispersion for tradable products.
European Commission, 2001c	..	Price surveys of fresh foods and consumer electronics.	Brands and consumer tastes explain up to 40 percent of the price dispersion for a given product.
OECD Economic Surveys: Euro area 2001, OECD 2001a	June 1998	Survey of European Consumers' organisation.	The dispersion of prices in the EU remains on average around 20 to 25 percent higher across borders than within countries, after taking into account the distance between cities.
Rogers, Hufbauer & Wada, 2001	1990s	Economist Intelligence Unit for 165 goods and services.	Dispersion of prices in the euro area has declined from 0.12 in 1990 to 0.10 in 1999, but for traded goods from 0.11 to 0.05. There is no evidence of such changes in the US, but the dispersion for traded goods is just slightly higher in the EU; for non-tradables it is higher in the US mainly due to housing prices.
Veugelers et al, 2001	1993-97	..	Price dispersion has declined, but speed depends on the concentration ratio.
European Commission, 2002a	..	Purchasing power parities of 58 categories of goods and services within private consumption, capital investment, and exports	Aggregated price levels converged until 1997/98 but dispersion has since stagnated.
Rogers, 2002	1990-2001	Economist Intelligence Unit cost of living index data for 25 European cities and 13 US cities.	The dispersion of traded goods prices in Europe has converged to a level very close to the US; much of the convergence has taken place in the first half of the nineties.

In addition, a study by London Economics^v for the European Commission's review of the Single Market in 1996 found that price-cost margins had reduced by 0.2 percentage points as of 1987². Sauner-Leroy^{vi} showed that up

² However, the study found that this was true both for industries considered to be 'sensitive' to the Single Market programme (i.e. those with moderate or high non-tariff barriers beforehand), but also in other, less sensitive sectors. While this could cast doubt on the importance of the SMP for price

to 1993, mark-ups in manufacturing sectors fell as firms had to reduce prices due to greater competition. However, after this mark-ups began to increase again, as the effect of falling unit costs dominated falling prices.

So price data does demonstrate the beneficial effects of competition. Integration within Europe and the Single Market programme appear to have had an important effect both on prices and price dispersion, particularly during the earlier stages of integration. However, price dispersion remains higher across borders than within countries, indicating that there are still barriers to realising the potential dynamic gains from cross-border competition, but that these can be important. Again, price dispersion in the services sector indicates the lack of effective intra-EU competition, and that there are significant efficiency gains yet to reap here.

Looking ahead, the dynamic gains to be realised from further market reforms to complete the Single Market are significant. While much progress has been made in removing barriers to trade in goods, there are still major barriers remaining to free trade in services – a sector which has come to dominate Member States' economies over recent decades. A model developed by Copenhagen Economics^{vii} provides estimates of the medium-term impact of opening services to competition, resulting in an increase of 0.6% of GDP and 0.3% of employment. However, as a static study focusing on the effects of price convergence, this can be assumed to be a conservative estimate. Looking further at the second-order effects, a CPB study estimated that intra-EU trade in commercial services could increase by 15% to 35%, and total trade within the EU could increase by 1% to 3%. Breaking this down to the Member State level, this was found to increase UK services exports by 18.3%, and imports by 14.7.

The UK has had higher growth in labour productivity in services than most euro area countries, and would be well-placed to benefit from liberalisation and greater competition in this sector. Cross-border trade in business and transport services are comparatively underdeveloped. In business services, the majority of EU Member States, in particular France, Germany and Italy, have service sectors that are sheltered from external competition, while the UK (and the Netherlands, and to a smaller extent Spain) have more traditionally been open to trade. Lack of exposure to competitive forces, combined with anticompetitive regulations within countries, have had a negative effect on productivity in many Member States' service sectors. Reform in these areas could create important opportunities for the UK.

Liberalisation of the Network Industries

Completing the liberalisation and integration of network industries is a specific measure identified by the Commission^{viii} to complete the Single Market that should deliver significant benefits. As well as improving efficiency and

convergence, certain studies have demonstrated that productivity spillovers are often inter-industry, which could help explain this observation.

productivity in the network industries themselves, this should also have important knock-on benefits for other industries and markets.

The Commission has noted that although competition and market integration are only very gradually having an impact on market structure, between 1996 and 2001 productivity in network industries has increased faster than in the rest of the economy, in particular in communications, air transport and energy. O'Mahoney and Van Ark have shown that EU labour productivity in gas, electricity and water has grown faster than in the US, and this is supported by OECD and Commission studies.

Evolution of labour productivity per hour worked in gas, electricity and water utilities (% change per year)

	1979-1990	1990-1995	1995-2001
EU-15	2.7	3.6	5.7
US	1.1	1.8	0.1

Better connected and more productive networks will also benefit other industries, as they further reduce the costs of market access, foster competition and provide further potential for scale and agglomeration economies. The Commission estimates that liberalisation of electricity and telecoms should boost GDP by 0.6% in the long-run.

European Integration and Market Structure

Market structure is a further indicator of the competitiveness of markets. The integration of European markets will not be successful if it results in the dominance of a small number of large pan-European firms (for this reason – as noted earlier – an effective pan-European competition policy is crucial to the success of the Single Market). A study by Veugelers et al^{ix} found that, while production *concentration* did not change very much on average (although there were large differences between sectors), there was much turbulence in market leadership between 1987 and 1997, with the top five companies losing half their market share to newcomers. The multinational character of firms strengthened over the period, suggesting that the Single Market has led to an effective increase in the level of competition. There is also evidence of increased specialisation towards core business, accompanied by a rise of R&D and advertising expenditure in the more competitive integrated market.

Efficiency benefits of integration appear greater in less concentrated sectors – as sectors with higher concentration showed less movement of leadership and greater economic rents to producers, alongside less evidence of labour productivity growth and price convergence. Interestingly, while price convergence effects appear to be stronger in the earlier years of integration, Veugelers et al found that specialisation and turbulence of market leadership was greater between 1993 and 1997 than from 1987-1993. Efficient firms have succeeded while inefficient firms have been forced out of the market, resulting in productive churn, the reduction of cost-price margins and a greater level of overall efficiency.

At the UK level, Griffith^x examined panel data on UK establishments between 1980-96, using the Single Market as an instrument for changes in product market competition. The study found real and significant effects from the Single Market. She found that, through greater market information and reduced agency costs, there is a direct empirical relationship between the creation of the Single Market and productivity improvements driven by competition. The study calculated the Lerner index³ for groups of firms expected to be sensitive to Single Market reforms, and found that the Single Market led to a decrease in the index greater than in non-sensitive industries. On average, the mark-up above average cost fell by almost 1% more in sensitive industries; labour productivity rose after the SMP in establishments in sensitive industries by around 2% more than in other establishments, while the level of Total Factor Productivity rose by almost 1% more and the growth in TFP was nearly 1% higher. This demonstrates real benefits from the Single Market for the UK economy.

In summary, by enabling access to a larger market, combined with the reforms of the Single Market, membership of the EU should contribute to increased competitive pressures in UK industries. Evidence, such as price convergence and reduced mark-ups, show that firms' behaviour is changing, and this should in turn boost productivity, growth and welfare. However, barriers to effective competition within the EU remain, particularly in e.g. services and network industries. This suggests that if the UK remains a force for reform, greater potential benefits are possible.

The dynamic benefits from competition also feed into the drivers of innovation and enterprise.

2. Investment

Encouraging investment is key to strengthening productivity and growth in an economy. The paper on EU membership and FDI shows how FDI has grown as EU integration has continued, and how the UK has benefited from this growth in FDI. In addition to the direct benefits from increasing the capital stock of an economy, empirical studies generally show that FDI, both inward and outward, has additional, second-order, effects resulting in increased productivity. Dunning (1997) found that the main dynamic impact of FDI feeds through the effects of integration on other determinants of FDI, such as market size, income levels, market structure and agglomeration economies.

Inward Investment

Ferrett (2004)^{xi} surveys various theories explaining the effects of FDI on productivity. Many theories are based on the assumption that firms investing abroad will necessarily be more productive than those in the home country. Only the most productive firms will have the resources and incentives to invest abroad, and seek to locate where there will be cost advantages or other

³ The Lerner Index is measure of firm profitability: (price-marginal cost) / price

benefits, such as the existence of high technology clusters. Dunning (1997)^{xii} sets this out in the Ownership-Location-Internalisation (OLI) paradigm, whereby a necessary condition for undertaking FDI is that the potential international investor firm has a proprietary 'ownership advantage' relative to local rivals in the host country to offset the increased costs of coordinating business activities across international borders.

Multinational companies tend to invest in industries demonstrating imperfect competition, and their presence provides the potential for both vertical and horizontal 'productivity spillovers'. Strategic inter-firm rivalry makes it necessary to incur sunk R&D costs, and specialise. Griffith et al found that foreign multinationals undertake a substantial amount of R&D in many British sectors, providing a potentially important source of (horizontal) knowledge spillovers to domestic-owned establishments. There is much evidence to suppose that foreign-owned firms have higher labour productivity, and as more productive workers are poached by domestic firms, there is a direct 'pecuniary' spillover from increased wages, but also – and more importantly – technology and skills transfer between firms in the industry.

Firms choosing to locate abroad also have an incentive to encourage vertical spillovers, as they benefit from more productive forward and backward linkages in the host country. Such spillovers are assumed to occur following Greenfield investments and merger/acquisition-type investments (although there are also possible incentives for less productive foreign firms to undertake acquisitions of productive plants in the host country in order to gain a competitive advantage by cherry-picking).

Assuming that 'source' countries of FDI have productivity advantages to enable them to invest abroad, FDI should in theory encourage catch-up and convergence between countries. Firms choose to locate where they can benefit from low labour costs, and productivity spillovers follow, resulting in upward pressure on wages. However, this theory of convergence does not take into account path dependency and the potential for agglomeration economies leading to the development clusters, particularly of technologically intensive, high productivity industries that demonstrate increasing economies of scale. The early development of clusters seen in the UK should, to a certain extent, attract further investment and create a virtuous circle of productivity improvements, allowing the UK to generate further dynamic gains from FDI. This is supported by research (e.g. Galli 1997^{xiii}, looking at labour productivity in 20 industries in Europe between 1960 and 1993) that suggests that productivity convergence between countries is not inevitable, and early adoption of technologies by some countries can generate cyclical divergence, leading to further clustering.

In support of this theory, there is evidence of FDI productivity benefits in the UK. Oulton (2001)^{xiv} found that the labour productivity of foreign-owned firms has been continuously around 40% higher than in UK-owned firms, and that this productivity advantage is not solely due to a concentration of foreign-owned firms in industries with particularly high physical and human capital intensities. A study by Haskel et al that looked at FDI in UK manufacturing at

the plant level estimated that a 10% increase in the foreign presence in a UK industry raises the Total Factor Productivity (TFP) of domestic plants in the industry by about 0.5%.

Looking particularly at evidence for EU FDI on the UK, a useful study examining the impact of FDI on productivity in the UK was undertaken by Griffith and Simpson^{xv}, looking at manufacturing firms between 1980 and 1996 – a period of both increasing European integration and increasing FDI flows both within Europe and globally. The study showed a large increase in employment, value-added and investment attributed to foreign-owned firms. The share of value-added attributed to European-owned firms increased markedly from 1988 onwards, over the period of implementation of the Single Market programme. EU-owned firms accounted for 7.7% of value-added in 1996, up from 2.5% in 1980 and 3.5% in 1988 (the impact of North American-owned firms remains significantly greater, which possibly reflects the ‘first mover status’ of the US in FDI, as well as the increased attractiveness of the UK as a location for investment from third countries as European integration continues). While some of this will be due to factors other than European integration, it is likely that the Single Market reforms were also a factor. Moreover, continued integration within Europe, if combined with reforms to improve the functioning of markets and to increase labour market flexibility, should reinforce these benefits.

% of sample by nationality owner	1980	1984	1988	1992	1996
Employment (millions)	4.1	3.6	5.0	5.0	2.6
British-owned	83.7	83.9	90.3	78.8	73.1
North American	12.1	11.2	6.2	10.6	13.3
European Union	2.5	2.4	1.7	5.6	7.7
Value-added (1980 £m)	37,924	39,991	45,229	40,991	43,363
British-owned	80.5	79.1	79.8	73.5	65.6
North American	15.3	15.6	13.4	14.4	20.6
European Union	2.5	2.7	3.5	5.6	7.7
Investment (1980 £m)	4,573	4,760	6,125	5,779	6,973
British-owned	79.1	79.4	77.9	68.0	60.7
North American	15.2	15.3	12.0	15.0	20.3
European Union	3.0	2.5	3.5	3.1	11.1

Source: Griffith & Simpson (2001), using ARD data. EU countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal & Spain

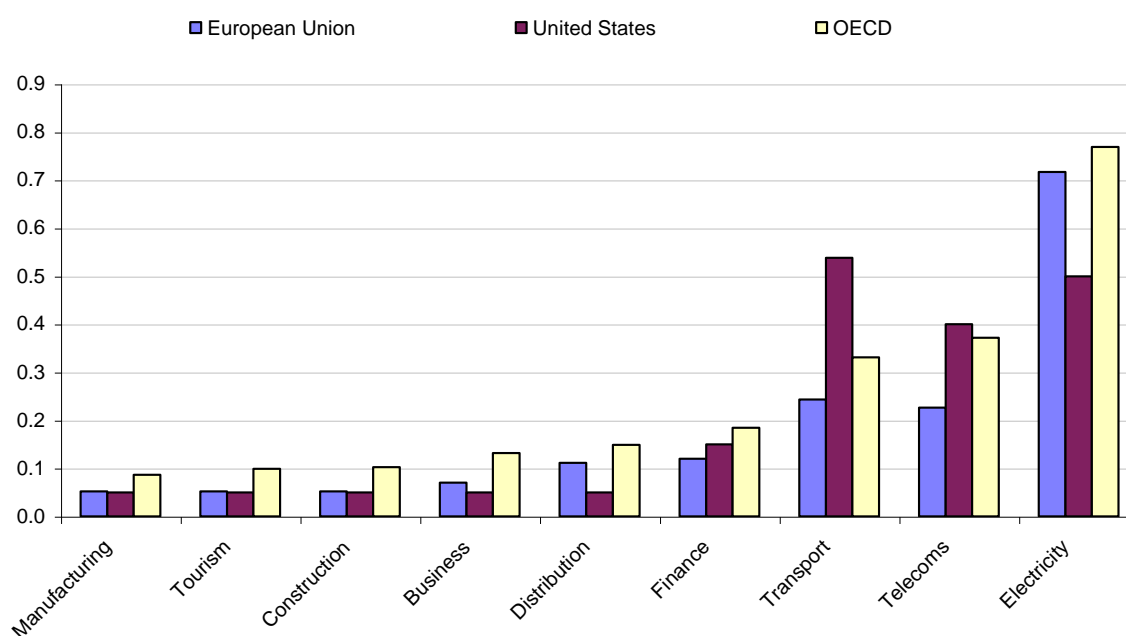
Outward Investment

European integration has also encouraged outward investment by UK companies in other Member States, and this also has significant potential benefits for the UK. Vertical outward FDI can also be a useful conduit for technological transfer, and studies^{xvi} have demonstrated that outsourcing of activities to locations with a different skills mix can lead to efficiency improvements, resulting in productivity growth in the long term. Studies have also shown that there is no negative impact on domestic employment and

output from outsourcing, and that in the long run there can even be employment growth, as firms grow and head office and R&D activity increase in the home country.

However, restrictions on FDI in many EU countries⁴ will restrict the potential spillover benefits. According to a recent OECD study^{xvii}, the UK has the lowest restrictions on FDI in the OECD, but other European countries are less open to foreign ownership (N.B. the OECD study took into account restrictions on both intra and extra EU FDI). Restrictions are relatively low in manufacturing sectors, but evidence of barriers in particular in services and network services, particularly electricity, suggest there are potentially significant gains from further liberalisation, which the UK is pursuing within the EU.

Restrictions on FDI – sectoral comparison



1. The indicators range from 0 (least restrictive) to 1 (most restrictive).

Source: OECD

Summing up, EU membership appears to have encouraged greater investment in the UK. Growth in FDI in particular is likely to have had both vertical and horizontal productivity spillovers, through technology transfer and competitive effects, and firms that have the capacity to undertake investment abroad tend to be more productive. The UK is also likely to have realised productivity improvements and acquired new technologies and processes from its openness to outward investment. However, barriers to investment still persist within the EU, particularly in services and the network industries,

⁴ These can be in the form of explicit barriers to foreign ownership (such as limits on equity stakes), obligatory screening and approval procedures which raise entry costs, restrictions on the ability of foreign nationals to work in affiliates, or regulations requiring that nationals or residents must form a majority of the board of directors.

suggesting that productivity in these areas could be further improved with reform.

3. Enterprise

Encouraging enterprise – whereby firms are more dynamic, innovative and less risk-averse – as a driver of productivity and growth is crucial to maintain competitiveness in global markets. The entry of dynamic new firms and the process of innovation should drive productivity, and increase competitive pressure on incumbents.

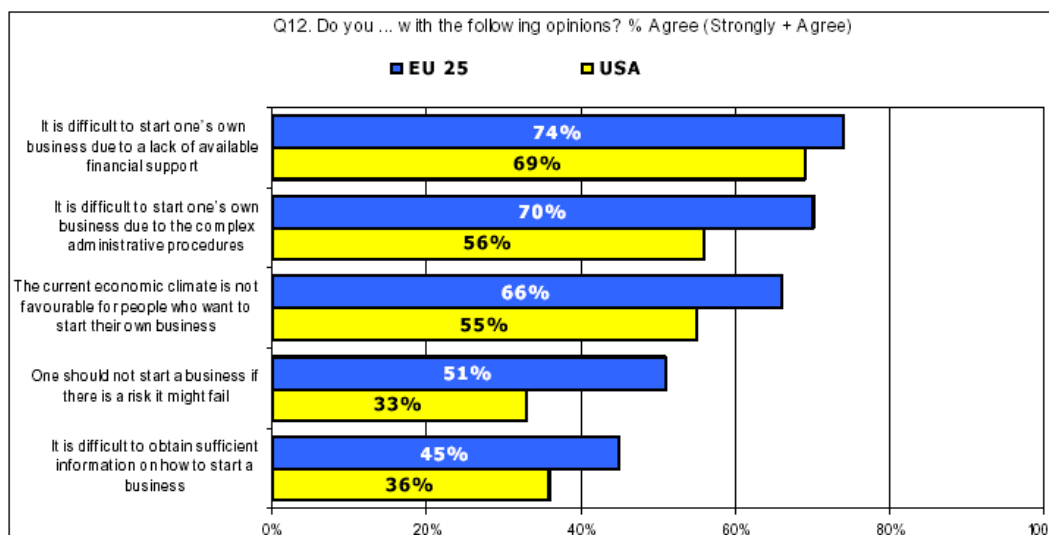
The more competitive environment and greater opportunities offered by the Single Market should provide incentives for greater entrepreneurship and increased SME activity. However, to achieve this, the EU and Member States need to create an environment that will encourage the growth of SMEs, both through a supportive environment for R&D and ensuring access to affordable finance, and by improving the regulatory framework so that SMEs are not unnecessarily overburdened with resource-consuming red tape.

Survey Evidence

Survey evidence tends to show the EU as less ‘entrepreneurial’ than it could be, suggesting that there are potential benefits from further Lisbon-style reforms.

The Eurobarometer poll has been surveying attitudes to and conditions for entrepreneurship since 2000, and the results reveal striking differences with the US, particularly as regards attitudes to entrepreneurship. While the poll reveals differences in the ‘entrepreneurial mindset’, this is not necessarily an inherent characteristic of Europeans. Rather, the survey also reveals obstacles to entrepreneurship and setting up a business that are also more important in the EU than in the US, and this is likely to contribute to the different attitudes shown.

The Eurobarometer poll in 2004 found that, if they had the choice, the majority of EU citizens would opt for employee status, while the majority of American citizens would opt to be self-employed. EU citizens are attracted mainly by the income stability of employment, while Americans consider self-employment as an opportunity to create their own working environment. The difference has become more marked over the years. However, according to the poll, one third of EU citizens would consider setting up a business in the next five years – and this rises to 40% in the New Member States, suggesting that the recent enlargement could have had a positive effect on entrepreneurship in the EU.



In terms of the main obstacles to entrepreneurship, survey respondents claimed that lack of available financial support was the principle difficulty, followed by complex administrative procedures. A majority of respondents in the US also found these to be obstacles, but markedly less so than in the EU. However, it is also worth noting that the importance of both of these as obstacles has declined over the last five years in the EU.

% agree	It is difficult to start one's own business due to a lack of available financial support	It is difficult to start one's own business due to the complex administrative procedures	The current economic climate is not favourable for people who want to start their own business	One should not start a business if there is a risk it might fail	It is difficult to obtain sufficient information on how to start a business
EU25	74	70	66	51	45
EU15	72	69	65	50	45
NMS	84	72	70	62	46
BE	74	71	64	52	50
DK	53	71	44	51	34
DE	72	72	74	61	43
EL	89	74	81	43	61
ES	73	67	55	44	47
FR	80	72	67	43	48
IE	60	64	36	29	33
IT	87	77	82	51	57
LU	78	64	62	55	45
NL	45	58	63	44	13
AT	66	56	57	61	30
PT	82	78	82	62	66
FI	43	60	43	41	21
SE	65	68	61	49	38
UK	57	61	42	43	34
CY	80	61	65	53	49
CZ	74	70	77	61	40
EE	59	55	49	58	28
HU	83	74	61	80	48
LV	93	74	65	62	34

LT	81	83	70	69	50
MT	78	57	65	70	27
PL	87	70	70	56	48
SK	93	77	76	60	51
SI	84	79	64	69	48
Iceland	46	37	33	47	34
Liecht	68	43	59	50	22
Norway	47	68	40	40	32
USA	69	56	55	33	36

It is also worth noting the disparities between the results of different countries – in particular, the entrepreneurial culture in the UK appears relatively strong, for instance, lack of available financial support appears to be less of an obstacle even than in the US. So, while other EU Member States, particularly the EU-15, appear to be less entrepreneurial, the UK's survey responses suggest that this is likely to be in large part a result of national policies rather than EU-wide policies.

Many of the factors that impact on 'entrepreneurship' are Member State competences, e.g. the tax burden, education and training, labour market regulations – the main EU-level activities are the Multiannual Programme for Enterprise and Entrepreneurship 2001-05 (MAP), the Entrepreneurship Action Plan and the European Charter for Small Enterprises. The MAP has a budget of €126.3 million in 2005, and most of this is used to stimulate access to finance for small firms, largely through loan guarantees, although there is also some equity based support for seed capital. The UK is a relatively small recipient from the MAP, receiving around 2% of the budget, perhaps reflecting a better attitude to risk in UK financial markets. Nevertheless, the UK would still stand to benefit indirectly if MAP resources going to other Member States, principally France and Germany, succeeded in creating an atmosphere more conducive to entrepreneurship across the EU. However, spending the MAP on loan guarantees may not be the most effective way to improve finance for small firms, given that it is hard to measure the additionality of lending – how much finance would happen anyway without intervention? The UK is encouraging more of the MAP to be spent on providing risk equity capital, rather than loan guarantees to encourage a more risk-taking entrepreneurial spirit.

The Entrepreneurship Action Plan and the European Charter for Small Enterprises work to help national authorities improve the domestic environment for entrepreneurship by encouraging the dissemination of good practice. The nature of the process – the Open Method of Coordination works through peer review and benchmarking – means that any benefits are hard to measure.

However, while these policies may have some positive effect on entrepreneurship, the impact is likely to be marginal. The main driver of entrepreneurship is the broader economic environment within which firms operate. Here, the greater economic returns offered by the larger EU market should encourage entrepreneurs to be more open to risk taking. However, one area where EU activity potentially has a significant impact on entrepreneurship is regulation, which at EU level can be burdensome and

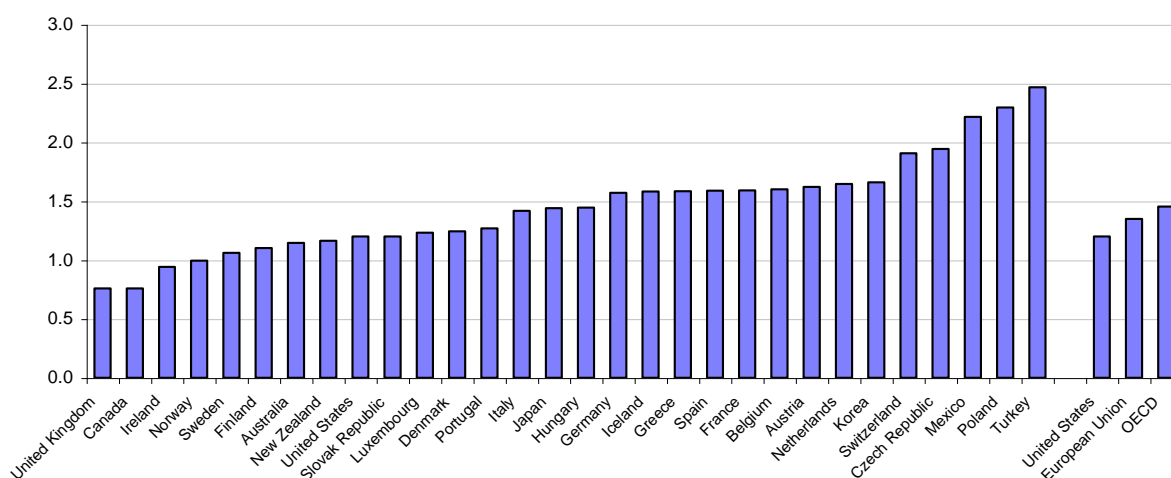
poorly targeted. The recent focus of the Commission on improving regulation, and looking again at the *acquis*, and the statement by Competitiveness Commissioner Verheugen that ‘*It is the challenge for Member States and the Commission to ensure that entrepreneurship is encouraged by providing a supportive environment for those choosing to take the risks*’ is welcome, and if effectively put into action could help boost productivity in the EU.

Regulation

Research^{xviii} suggests that a regulatory framework that promotes competition can have a significant positive impact on long-term output and productivity. In Europe the regulatory environment is shaped by a combination of EU regulations, EU directives implemented by Member States, and Member States’ own regulations.

‘Red tape’ from the EU is often cited as a major burden for UK and EU businesses, in particular SME’s. An OECD study that looked at the barriers to and the benefits from greater economic cooperation between the EU and the US demonstrated how competition-restraining regulations are on average more significant in the EU and the US. However, there is significant disparity between Member States, indicating that Member States’ implementation of EU measures and domestic regulations may take a significant portion of the blame. Although a member of the EU, the UK has more flexible product market regulation, lower barriers to entrepreneurship, and fewer restrictions on FDI than both the EU and the US. On average, compared to the US, the OECD study shows that European countries (on average – the UK is an outlier) demonstrate greater barriers to entrepreneurship, reflecting more opaque regulations and administrative burdens, more significant barriers to competition, and greater burdens on start-ups^{xix}. This can clearly be seen in the chart below.

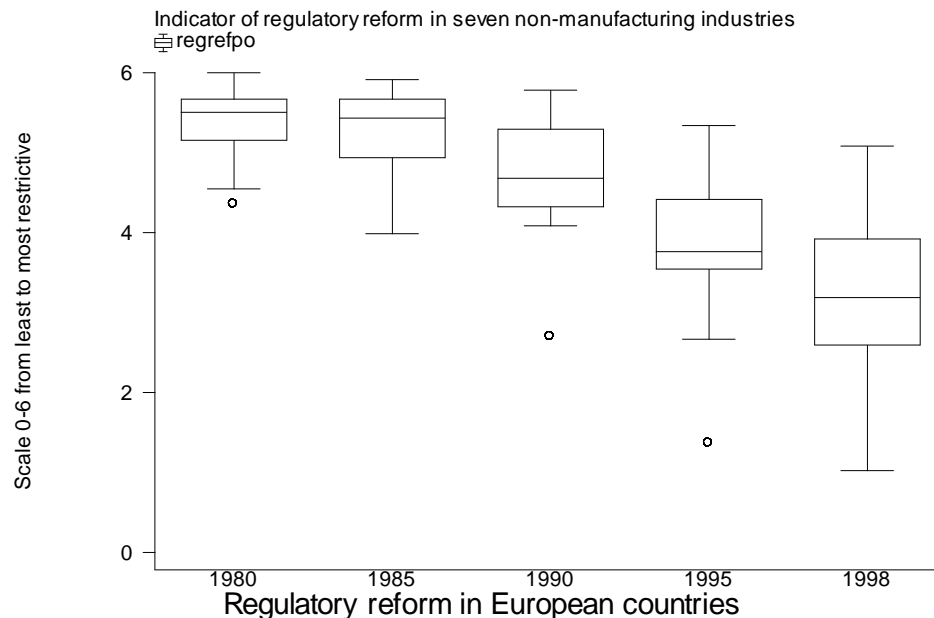
Barriers to Entrepreneurship in the OECD



1. The indicators range from 0 (least restrictive) to 6 (most restrictive).

Source: OECD

Regulatory reform over the past two decades in European countries has made markets more flexible. However, the indicators below, constructed by Nicoletti and Scarpetta^{xx} to demonstrate relative restrictions on competition and firm choices, show that while, on average, policies have become friendlier to market mechanisms, in relative terms there is increasing divergence between Member States across the EU.



Despite the Single Market Programme, which could have been expected to lead to some regulatory convergence, the study also found that this divergence is greater between EU countries than between OECD countries as a group. Nicoletti and Scarpetta also showed that this divergence reflects divergent growth performance between OECD countries, in particular the performance of large continental economies relative to the US. Compared to other Member States and other OECD countries the UK is relatively lightly regulated, but the regulatory burden across the EU needs to be addressed to encourage entrepreneurship across Europe.

The Single Market programme was comprised of 282 directives, and the Regulatory Impact Unit (RIU) says that 50% of all significant new regulations originate from Europe. While the OECD^{xxi} and the IMF^{xxii}, among others, have both identified the European regulatory framework as inhibiting the performance of EU economies, it is worth noting that there is a key role for some European regulation to facilitate the Single Market (e.g. Regulation 1408/72 that coordinates Member States' social security systems and so facilitates labour mobility), and that what is needed is *better* regulation, which achieves objectives of facilitating competition, and consumer and environmental protection, without imposing an unnecessary burden on business.

Although the exact effect of regulation on productivity is hard to define, various econometric studies of the benefits of a reduced regulatory burden

have been made – these are summarised below. It is clear that, while better product market regulation is necessary to boost productivity and growth, labour market reforms alongside these will enhance the benefits.

Author	Benefits from better regulation	Scope
European Commission, 2002 ^{xxiii}	3-4% increase in GDP levels over a 7-8 year period	Labour and product market reforms, resulting in increased participation, wage moderation, and TFP growth
Dierx, Pichelmann & Röger, 2004 ^{xxiv}	Medium-term increase in GDP of 2%; output growth accelerates by almost 0.25 pp annually over 7-8 years	Product market reforms only
European Commission, 2003 ^{xxv}	EU potential growth rates boosted by on average between ½-¾ pp over a 5-10 year horizon; and a 0.15% increase in the long-run productivity growth rate of the EU economy, largely through increased investment since regulation is a key determinant of capital deepening	EU regulation reformed to meet US level by 2010, combined with TFP growth through investment in the knowledge-based economy, focus on creating conditions to increase endogenous R&D investment
IMF 2004 ^{xxvi}	10% increase in GDP over long-term (4.3% if competition-friendly product market reforms only)	EU price mark-up gap with US closed
OECD 2002 ^{xxvii}	Improvements in the regulatory regime could increase productivity levels by up to 6% in many EU economies	
Bayoumi, Laxton & Pesenti, 2004 ^{xxviii}	Product and labour market reforms combined boost GDP by 12.4%; product markets only, GDP boosted by 8.6%	

In addition to the regulatory burden, compliance with tax regimes can also impose costs on companies operating in the EU, particularly cross border. The European Commission's European Tax Survey^{xxix} found that tax compliance costs were higher for SMEs than for large companies (30.9% of taxes paid as compared to 1.9% for large companies), and higher for companies with at least one subsidiary in another EU Member States compared to companies without subsidiaries.

A Dutch study by Tang and Verweij^{xxx} tried to estimate the potential growth and welfare benefits of regulatory reform within the EU⁵. They estimated that a reduction in the administrative burden by 25% would increase GDP by 1% in the first year, and by 1.4% in the long-term from higher savings, investment and capital following cost savings leading to greater production. If the effects of increased investment in R&D and consequent productivity effects and spillovers are taken into account, EU GDP is expected to increase in the long-term by 1.7%, calculated as 1.8% for the UK. Interestingly, they found that the benefits were greater if regulatory reform action was coordinated between EU countries, rather than pursued solely by an individual Member State. This seems plausible given that 50% of all new regulations come from the EU, and that cross-border productivity spillovers will have a greater effect if regulatory costs are lower across the EU. Moreover, a unilateral reduction in

⁵ The Netherlands is the only country to have calculated the costs of regulation, and is seeking to reduce the administrative burden by 25% by 2007.

administrative costs could be modelled to result in a terms of trade loss, as imported intermediate goods from unreformed Member States would be relatively more expensive.

In summary, it is clear that the administrative burden in the EU, a large proportion of which comes from EU regulation, does hold back entrepreneurship in Member States. However, if the declared objective of *better regulation* is realised, the extra stimulus to competition and greater potential returns from a larger market should drive growing enterprise in Europe. The benefits of this for the UK – a key proponent of the better regulation initiative – would be significant.

So, the overall impact of EU membership on ‘entrepreneurship’ in the UK is mixed, but probably negative. While access to the Single Market provides a more competitive environment for incumbents and SME’s, EU markets tend to be less ‘entrepreneurially-minded’ than the UK or the US, according to survey evidence (although this appears to be improving with accession). Many of the factors impacting on entrepreneurship are Member States’ own competence, but the EU is considered to have a negative impact when it comes to the regulatory burden on firms. Significant growth benefits have been estimated from serious regulatory reform in the EU.

SMEs and the Liberalisation of Network Industries

Areas of EU policy, such as the creation of the Single Market, should have stimulated entrepreneurship and the growth of enterprise. The deregulation of network industries, such as telecommunications and electricity, is a key area where the EU has provided real benefit to SMEs.

Some economic sectors are particularly sensitive to telecommunications or electricity costs. For instance, in business services and transport/communication, about 50% of all SMEs spend more than 1% of their turnover on telecoms services. In manufacturing and personal services, about 40% of all SMEs spend more than 1% on electricity.

A combination of EU directives and the rapid evolution of technology have radically increased competition in telecommunications in recent years. The telecoms sector has been fully liberalised in most European countries since 1998, providing consumers and businesses with real choice over their operators, and putting significant downward pressure on prices and upward pressure on quality. This has enabled European SMEs to choose the most competitive provider, and so minimise costs. According to the ENSR Enterprise Survey 2003, 46% of European SMEs have changed their provider during the last three years, 29% have done it once, and the remaining 17% more often. One third of SMEs that have remained with the same provider did consider changing.

49% of SMEs responded in a survey that this had resulted in a real positive impact, largely due to price considerations.

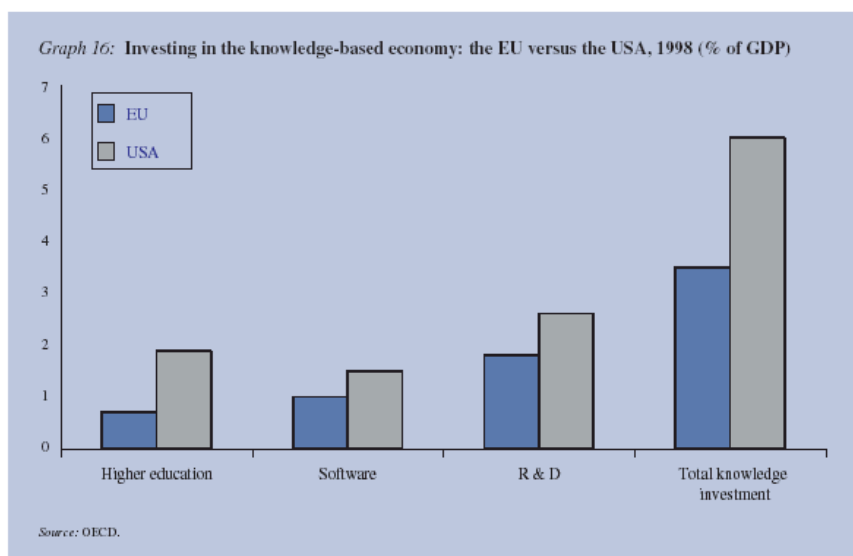
Less effective liberalisation has taken place to date in other network industries, such as the electricity sector. However, if this is achieved successfully, similar benefits could be realised.

Source: *SMEs and the liberalisation of Network Industries: telecommunications and electricity markets*, Observatory of European SMEs, 2003

4. Innovation and R&D

Endogenous growth models are clear that innovation and technical progress are key to productivity and long-term growth in the economy. Empirical work by the OECD^{xxxii} has found a clear positive effect of innovation on output, and a more competitive business environment, with greater potential for SME activity, should stimulate innovation of new technologies and processes.

The EU has recognised the importance of increased innovation for improving Europe's growth prospects and measures to promote a more innovative economy are included in the Lisbon Agenda. The Barcelona European Council in 2002 set a target for 3% of EU GDP to be spent on R&D, two thirds of this company financed. However, Gjersem (2004) considers that '*this ambitious aim is held back by forces such as less than excellent universities, an unfriendly business climate, etc*'.



The chart above shows that, as yet, total R&D spending in the euro area is only 1.9% of GDP, lagging behind both the US and Japan. Were the EU to increase its expenditure on R&D from 1.9% to 3%, the Commission calculates that this would result in an increase of 1.7% of GDP by 2010^{xxxiii}. The EU as a whole invests only 4.0% of GDP in R&D, software and higher education, compared to 6.8% in the US.

If reforms are successful in achieving continued liberalisation of markets and the growth of SMEs within the EU, competitive pressures should stimulate more innovation and private spending on R&D. Innovation as a driver of productivity is strongly linked to the competition driver: Nicoletti and Scarpetta

(2003) wrote that '*where stringent regulations deter entry by firms from other Member States, this will also deter the adoption of cutting-edge technologies, possibly by reducing competitive pressures, technology spillovers, or the entry of new high-tech firms*'. Empirical evidence cited in the European Economy 2003 suggests that an endogenous increase in R&D spending can best be achieved through further product market integration, education, and more efficient financial markets. Aghion et al^{xxxiii} have shown that a greater threat of entry, or greater contestability of markets encourages innovation in high technology sectors, particularly when they are close to the technological frontier and firms can avoid the threat of entry through innovation. Existing clusters of high technology firms in the UK should therefore benefit significantly from continuing market integration within the EU that encourages greater R&D and innovation⁶.

As well as encouraging greater investment in R&D across the EU, improving the relatively poor (compared to the US) performance in terms of diffusion of new innovations and new processes is essential to achieving a more dynamic economy. In particular, the EU has lagged the US in harnessing the productivity potential of new developments in ICT, which can also have significant spillover effects for other industries. Removing remaining barriers to competition in the economy, particularly in services, will encourage diffusion, but specific EU measures that would provide an extra impetus would be adoption of a Community Patent, and enabling applications from across the EU for national research grants.

Looking ahead, action by the EU to boost R&D spending, and in particular to create the conditions to boost private R&D spending (such as improving the risk-taking capacity of financial markets) and improve implementation and diffusions of new innovations, has great potential to increase the productivity and long-term growth rates of the EU economy. However, the visible impact on measured productivity may be dampened if the growth generated also succeeds in creating employment opportunities for the low-skilled unemployed – essential if the EU is to meet its 2010 employment targets. As noted below, there are potential benefits to coordinating R&D at a European level, and continued integration (reducing the costs of market access for successful products resulting from R&D) should continue to increase incentives.

Potential advantages of EU level R&D Activity

The positive externalities generated by research and development mean that the Framework Programmes are one of the more successful areas of the Community Budget. The UK has a comparative advantage in science and innovation, and is a key beneficiary of the Framework Programmes.

EU level spending on research and innovation should take place where there is tangible added value from supranational coordination. A report^{xxxiv} for the

⁶ The effect could be the opposite for firms far away from the technological frontier, who have little hope of competing successfully against a successful entrant, and therefore can expect little pay-off from increased R&D expenditure, reinforcing the cluster effect.

Office of Science and Technology by Technopolis suggested that this is most likely to occur where:

- An international consensus among a broad spectrum of producers and users that a given scientific or technical question is needed to secure progress, and for mutual benefit, e.g. the determination of the scientific foundations of international telecommunications standards, which in turn facilitate the more efficient operation of global markets;
- A 'critical mass' of research performers – and users – is unlikely to be achieved nationally, or where a national focus would exclude 'key players' from the joint venture. This seems particularly likely where progress is contingent upon developments in multiple spheres (theory, models, instruments, surveys) such as earth systems science or massive data processing or sheer volume of research capacity.
- UK companies are 'nearly but not quite' at the leading edge of technological development internationally – they have the 'absorptive capacity' to reach the frontier and can therefore contribute to and benefit from partnerships with world class business and research institutes, and thereby seek to close that gap with respect to their technological capabilities.
- UK companies wish to extend their international supply-chains and enter new foreign markets. The close trading links between EU countries and many supply chains involving companies from more than one country means that international technology projects can facilitate closer interaction.
- Projects involve massive capital expenditure, where no one member state could be expected to underwrite the entire cost, or where the duplication of effort or facilities would make no sense economically or technologically.
- A trans-national interest exists, such as in the area of environmental pollution or social cohesion.

UK Benefits from EU R&D Programmes

The UK has been a key beneficiary of EU R&D funding: UK organisations took part in 47.1% of projects funded in FP4 and 40.7% of projects in FP5, the highest of any Member State. In FP 5 the average amount of funding obtained by UK organisations per participation was €187.7k, well above the overall average. So far in FP6, 20.1% of funding applications from the UK have met with success. This relative success of the UK in attracting resources to research projects should, if well spent, help to strengthen productivity performance and catch-up, in particular in high-technology clusters, where agglomeration economies around networks will help to maintain the advantage in research and high value-added activities. However, it should also be recognised that the enlarged market and potential for economies of scale mean that the UK will benefit from R&D programmes undertaken in other Member States through dissemination of ideas, spillovers, and added competitive pressure.

Support for R&D and innovation can be particularly important in improving the growth of SMEs and the enterprise environment. A survey^{xxxv} of the impacts

of the Framework Programmes in the UK found that the SME-specific measures are highly regarded by the research institute sector and are believed to have led to technological innovations that have been exploited by SMEs in the form of new businesses, new products and new processes. The survey also revealed that most participants believed that the most important impact of EU funding was on improving European scientific and technological capabilities, followed by improving social cohesion across Member States and improving European industrial competitiveness.

However, the framework for EU R&D funding could be further improved to increase the net benefits. The bureaucracy involved in acquiring funding reduces effectiveness and value – particularly for SMEs, and that the next funding round should seek to streamline / minimise these costs. Moreover, taking forward research projects and disseminating them more widely is another area where the EU could do more.

In summary, the EU has recognised the importance of increasing R&D for Europe's long-term growth prospects, and there are clear benefits of coordinating research projects across Member States, such as economies of scale and scope. The UK has in the past been successful in receiving EU R&D funding. However, more could be done to stimulate greater private investment in research, and reducing the regulatory burden on firms might help encourage this.

5. Skills

The level of human capital and skills profile of the workforce is a major driver of productivity in the economy. However, education and skills policy in the EU is a Member State competence, with Community cooperation limited to sharing best practice between Member States, and enabling the mobility of students and teachers between Member States.

To the extent that mobility of skilled labour across Europe is facilitated by EU membership, and that high skilled workers can move to high technology clusters, this should contribute to productivity growth.

Conclusion

Membership of the EU affects the UK's long-term growth prospects through its impact on four of the five drivers of productivity – competition, investment, entrepreneurship and innovation. The impact on skills is likely to be marginal.

The Single Market programme aimed to create a more competitive market place, enabling effective competition between Member States' firms, promoting FDI, and encouraging entrepreneurship – all of which should work to encourage more productive industries in Member States. The Lisbon Agenda has also had as its objective creating a more productive and dynamic economic environment.

The dynamic benefits of EU membership have probably had most effect through the investment driver – there is evidence of both vertical and horizontal productivity spillovers from investments by foreign firms in the UK. There has also been some success in encouraging more effective competition, as evidence of price convergence, and turbulence in market structure demonstrate. However, further progress in improving the competitive environment is needed, most notably in the service sector and network industries. The UK has also been a key beneficiary in terms of attracting R&D funding from the EU, although progress still needs to be made in reaching the 3% R&D target set out in the Lisbon Agenda.

However, over-burdensome regulation, much of which originates in the EU, restricts the dynamic benefits of EU membership, particularly through the enterprise driver. EU policies to encourage enterprise and SME growth are unlikely to succeed without addressing this problem. If the Better Regulation initiative being pursued by the UK is successful, the benefits have potential to be significant – Dutch economists have estimated that a reduction of 25% in the administrative burden would increase UK GDP by 1.8%.

So in summary, EU membership has positively influenced UK productivity through the five drivers. With continued reform, these benefits will increase further, enabling the UK and the EU to effectively respond to the challenges of globalisation. Economic reform in the EU that results in more growth in other Member States is also in the UK's interests.

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