

**THE GOVERNMENT'S NEW SET OF
PRODUCTIVITY & COMPETITIVENESS
INDICATORS**



HM TREASURY

dti

THE GOVERNMENT'S NEW SET OF PRODUCTIVITY & COMPETITIVENESS INDICATORS

This document sets out the Government's new set of productivity indicators. These indicators form part of the monitoring framework underpinning DTI's PSA 1 and HM Treasury's PSA 4 to:

'Demonstrate progress by 2008 on the Government's long-term objective of raising the rate of UK productivity growth over the economic cycle, improving competitiveness and narrowing the productivity gap with our major industrial competitors.'

The indicators are a key way of checking on progress and also form an important element of the evidence base on productivity and competitiveness. They are organized by the five drivers of productivity:

- Investment;
- Innovation;
- Skills;
- Enterprise; and
- Competition.

DTI developed the first set of indicators in 1999. Five years on, in March 2004, the Government reviewed the original set with the aim of identifying a more focussed suite of indicators that would more closely track the productivity PSA target, and present a clear picture of the UK's position relative to its major competitors. A consultation document was issued alongside the Budget in March 2004, and the Government published the response on 5th October 2004. This document provides the first short assessment of the new set of indicators.

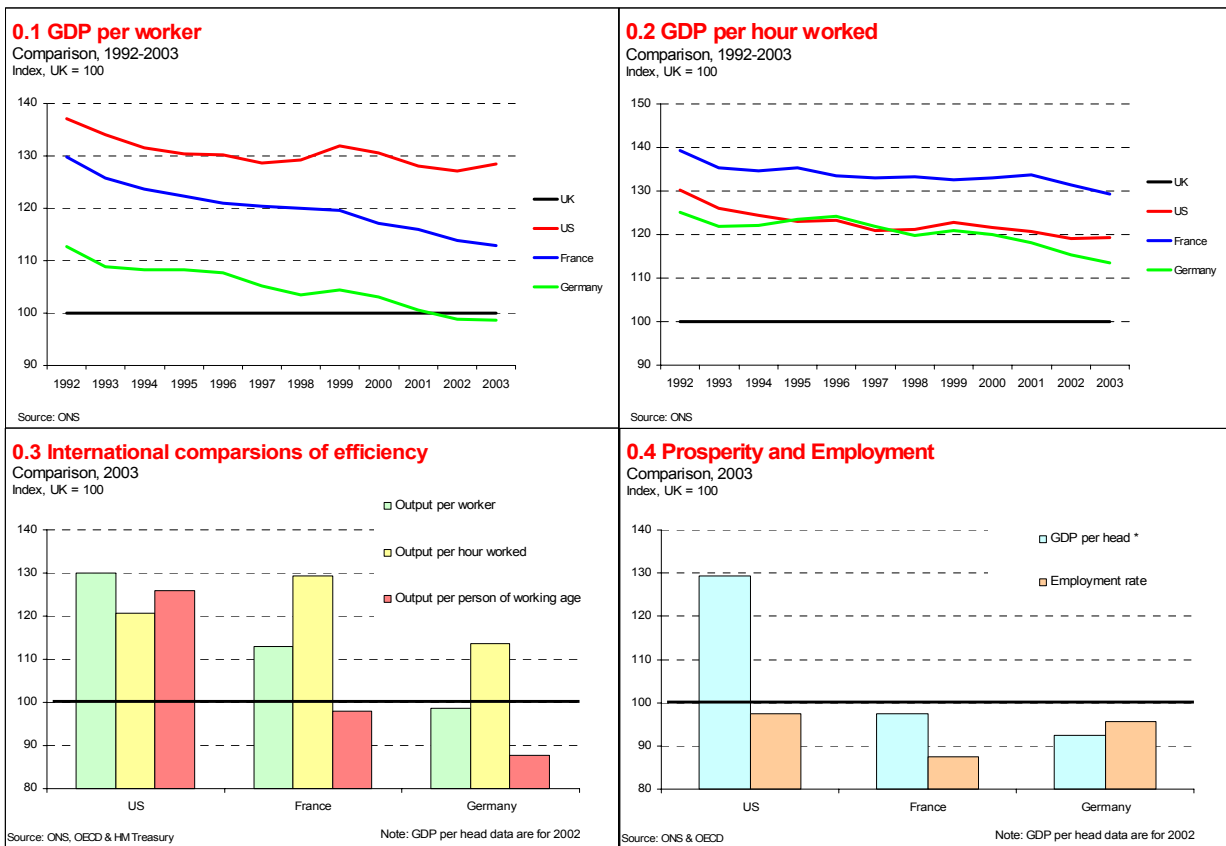
As with the previous set, the underlying data will be available from the DTI website (www.dti.gov.uk/economics). The data will be available from 1st November 2004.

EXECUTIVE SUMMARY

DRIVER	ASSESSMENT
OUTCOMES	The UK continues to make progress in closing the productivity gap with its competitors; nevertheless the gap still persists. Recent good performance on raising prosperity has largely been driven by a strong labour market.
INVESTMENT	Despite a substantial improvement in the economic environment, investment by both the private and public sectors remains relatively low as a share of GDP.
INNOVATION	The UK is a world-leader in science, but that does not translate into leadership in new products and process.
SKILLS	Workforce skill levels remain lower than our main competitors, with a higher proportion of low or unskilled workers, although there has been progress in recent years. There is also a perception of relative weakness in UK management skills.
ENTERPRISE	The UK has a positive enterprise culture, with a supportive regulatory environment. Start-up levels are similar to France and Germany but lag the US.
COMPETITION	Openness and relatively low levels of regulation characterize the UK economy. The competition regime has improved following recent reforms.

OUTCOMES

Prosperity – GDP per head - is driven by the proportion of workers in employment and by the productivity of those workers. In the long term, it is only increases in productivity that can raise wages, profits and ultimately overall prosperity. Productivity indicates how well an economy uses the resources it has available by relating the quantity of inputs to outputs. Labour productivity looks at how much value added is produced by each worker or for each hour they spend at work.



Assessment

The UK continues to make progress in closing the productivity gap with its competitors on both measures of **labour productivity**. Nevertheless, the gap still persists. On the output per worker measure, the UK suffers from a 30 per cent gap with the US in 2003. The performance against Europe is better: the UK is 12 per cent behind France and level pegging with Germany. However, once the hours worked are adjusted for, the performance of the continental economies improves. This is because French and German workers typically have a shorter working week and longer holidays. On this measure, France is the productivity leader and the UK consistently lags behind.

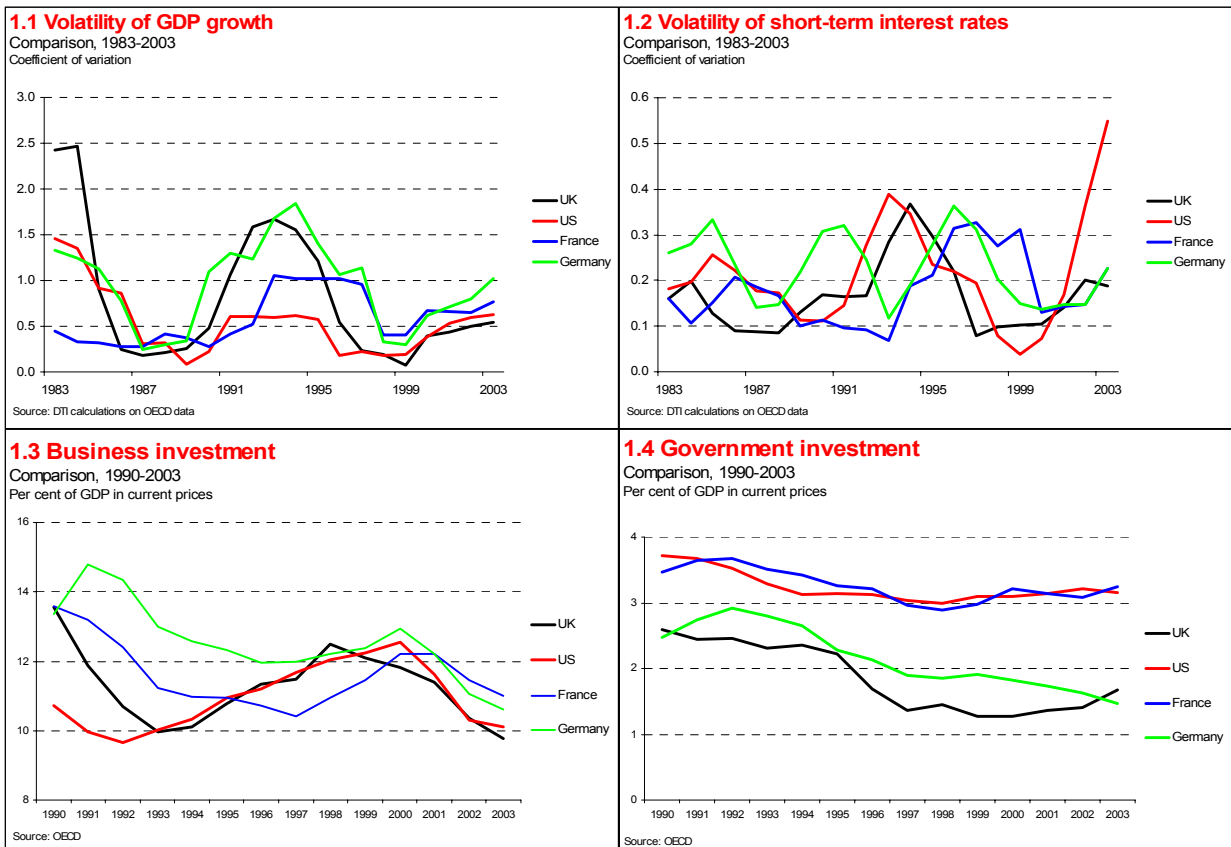
To some extent, the current headline performance reflects historic weaknesses in productivity performance: the long-standing under-investment in skills, infrastructure, and R&D. The most recent productivity data, however, shows that the UK is making progress in closing the gap. Although the position regarding the US is largely unchanged, the UK is making progress on Germany, and the French numbers are encouraging.

The UK's performance on productivity is counterbalanced by a much better story on employment. The UK has the highest employment rate in the G7, and as a result the UK performs relatively well in terms of **GDP per head** and **output per person of working age** – measures which combine both employment and productivity performance. On these measures the UK is ahead of Germany and France. The US's superior position represents its strong labour productivity combined with high employment rates.

The PSA target also commits the government to making progress to raise the **trend rate of growth in productivity**. The 2003 Budget presented the latest full assessment and it showed that the UK is making progress in boosting its productivity performance. Actual productivity (trend output per hour worked) is estimated to have grown by 2.44 per cent over the recent past (1997H1-2001Q3) – considerably higher than growth of 2.05 per cent measured over the last full economic cycle (1986Q2–1997H1).

INVESTMENT

Investment in physical capital increases labour productivity and growth by increasing the amount of machinery and equipment available to each worker, and by bringing new technology to the production process. Investment will be influenced by the overall macroeconomic environment, and the availability of complementary factors such as skilled workers and new technologies. Relatively low levels of capital stock in the UK appear to explain the majority of the productivity gap with France and Germany, and around half of the gap with the US.



Assessment

Uncertainty about the future course of demand and inflation increases the risk of undertaking long-term investment decisions. This makes marginal projects unattractive and therefore inhibits investment. Historically, the UK has performed poorly in terms of **macroeconomic stability** compared with other G7 countries. Following government reforms in the 1990s to macro economic management, volatility in key macroeconomic variables, such as interest rates and GDP, is more subdued. This reduces uncertainty and, over time, will contribute to a more favourable investment climate.

Despite the increasingly positive investment environment, UK **business investment** continues to fall short of its major competitors. Although there was an improvement in the late 1990s, the global downturn between 2001 and 2003 adversely affected investment rates across the main industrial nations.

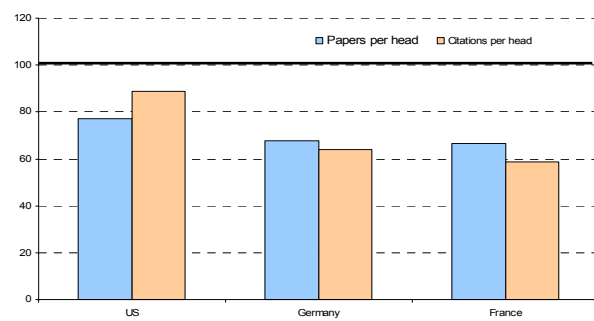
Public investment is an important complement to private sector investment. For example, expenditure on roads and other infrastructure helps goods move around more efficiently, raising the returns on private investment. Consequently, historic low public investment has hindered capital investment in the private sector. Although public investment figures need to be interpreted with care, because of different classifications and the use of public private partnerships, the UK public sector has tended to invest less than its competitors. After a long period of falling **government investment** rates, the UK is beginning to see an upturn. Nevertheless, the UK government investment rate is still substantially below either US or France, and is now broadly similar to Germany.

INNOVATION

Innovation – the successful exploitation of new ideas - drives economic growth in the long run. Innovation runs wider than just technology, and includes organisational change, design and the introduction of new and better products and services. The UK has tended to do well in developing new ideas, technologies and approaches, but has fared less well in commercialising and exploiting them.

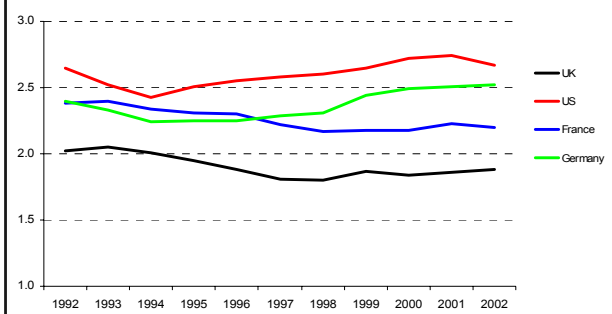
2.1 Papers and citations per head of population

G7 comparison, 1998-2003
Index, UK = 100



2.2 Gross domestic expenditure on R&D

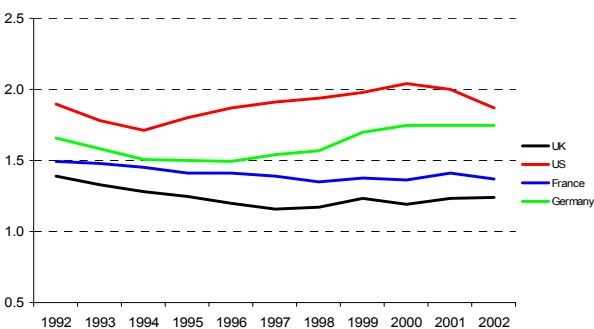
Comparison, 1990-2002
Per cent of GDP



Source: OECD

2.3 Business Enterprise R&D (BERD)

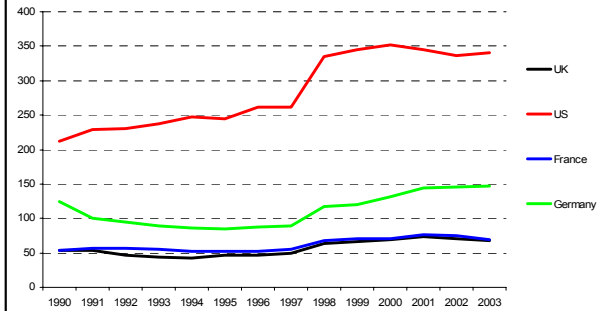
Comparison, 1992-2002
Per cent of GDP



Source: OECD except for the UK which is ONS

2.4 US patents granted

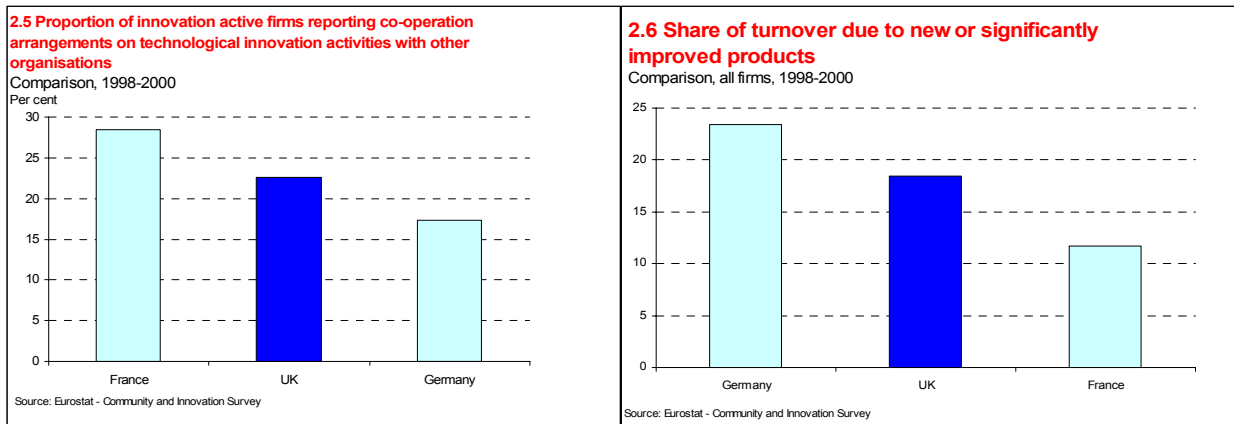
Comparison, 1990-2003
Per million of population



Source: US patent and trademark office

Note: There is a break in the time series data between 1997 and 1998

The Government's New Set of Productivity & Competitiveness Indicators



Assessment

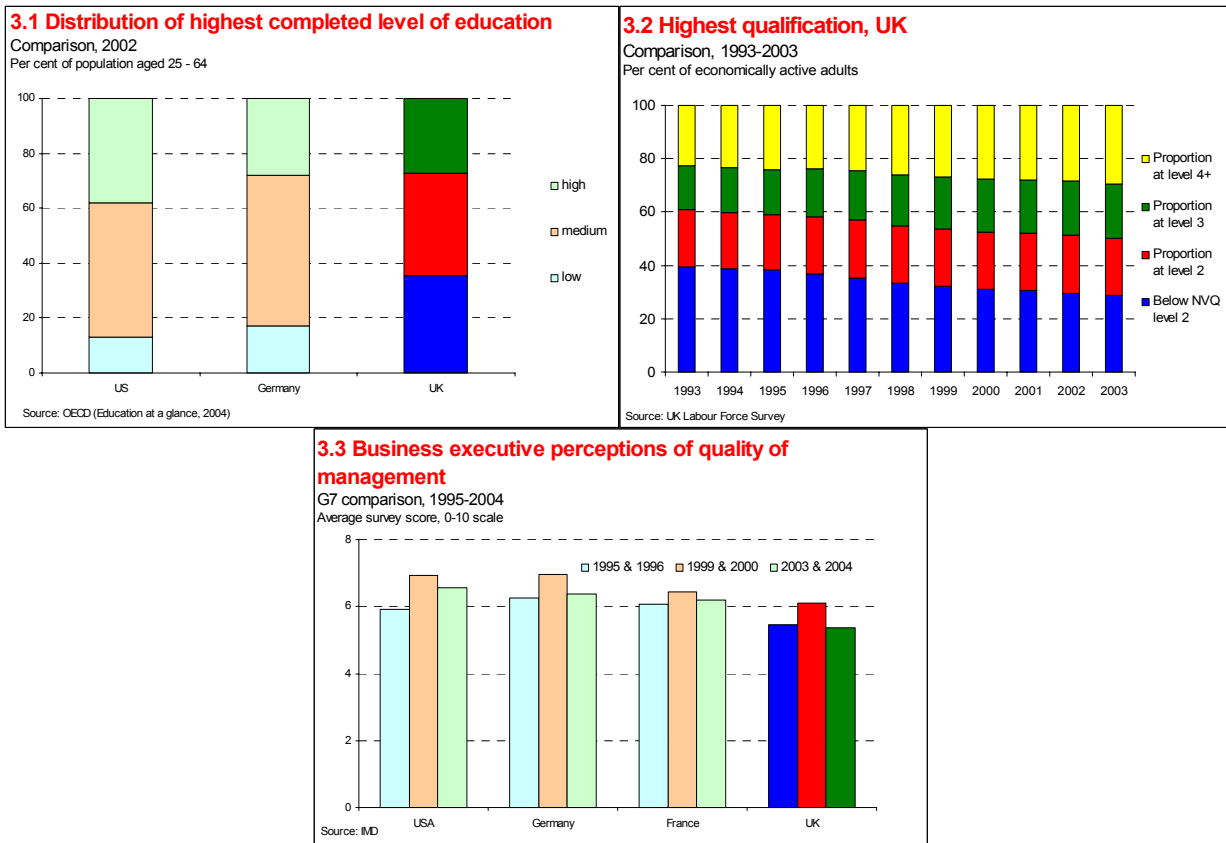
Although the UK continues to represent global scientific excellence, as reflected in the leading position in **papers and citations** per head of population. UK innovation performance is, at best, average compared to its peers. It is likely that UK firms are unable to make best use of the advantages presented by the strong science base because of low levels of innovation spend. Data from the community innovation survey (CIS) suggests that, on average, new products and services account for less than 20 per cent of turnover in UK firms. In this respect, the UK performs better than France but remains substantially behind Germany.

This story is reflected across a range of indicators. UK firms commit less resource to investing in **research and development (R&D)** than their competitors, the gap between the UK and France, Germany and the US has remained broadly stable over the 1990s. As a result of low business expenditure on R&D, and relatively low levels of public R&D, total R&D expenditure as a percentage of GDP is also below that of competitors. Similarly, although the number of **patents** granted to UK firms has edged up in recent years, patenting performance remains behind that of Germany and the US.

The recent DTI Innovation Review highlighted the importance of networks and collaboration transferring knowledge of new ideas and processes between firms and other institutions. New data from the CIS suggests that innovating firms in the UK **collaborate on innovation projects** to a similar extent to firms in other large EU countries.

SKILLS

A skilled workforce is essential in enabling firms to implement new technology, reap the benefits from new investment, and effect organisational change. Skilled workers and managers are not only more productive, but they also facilitate innovation and complimentary investment. Historic under-investment in human capital accounts for a part of the UK's productivity gap with its competitors.



Assessment

Human capital in the UK is relatively low compared to our competitor countries. Although the UK performs relatively well in terms of higher level **skills**, there is a deficiency at the intermediate skills level and a relatively high proportion of workers who possess low or no skills. Successfully addressing this skills deficiency is crucial for raising productivity in the UK: a recent study found that around a fifth of the productivity gap with Germany and France is explained by lower skills levels in the UK.¹

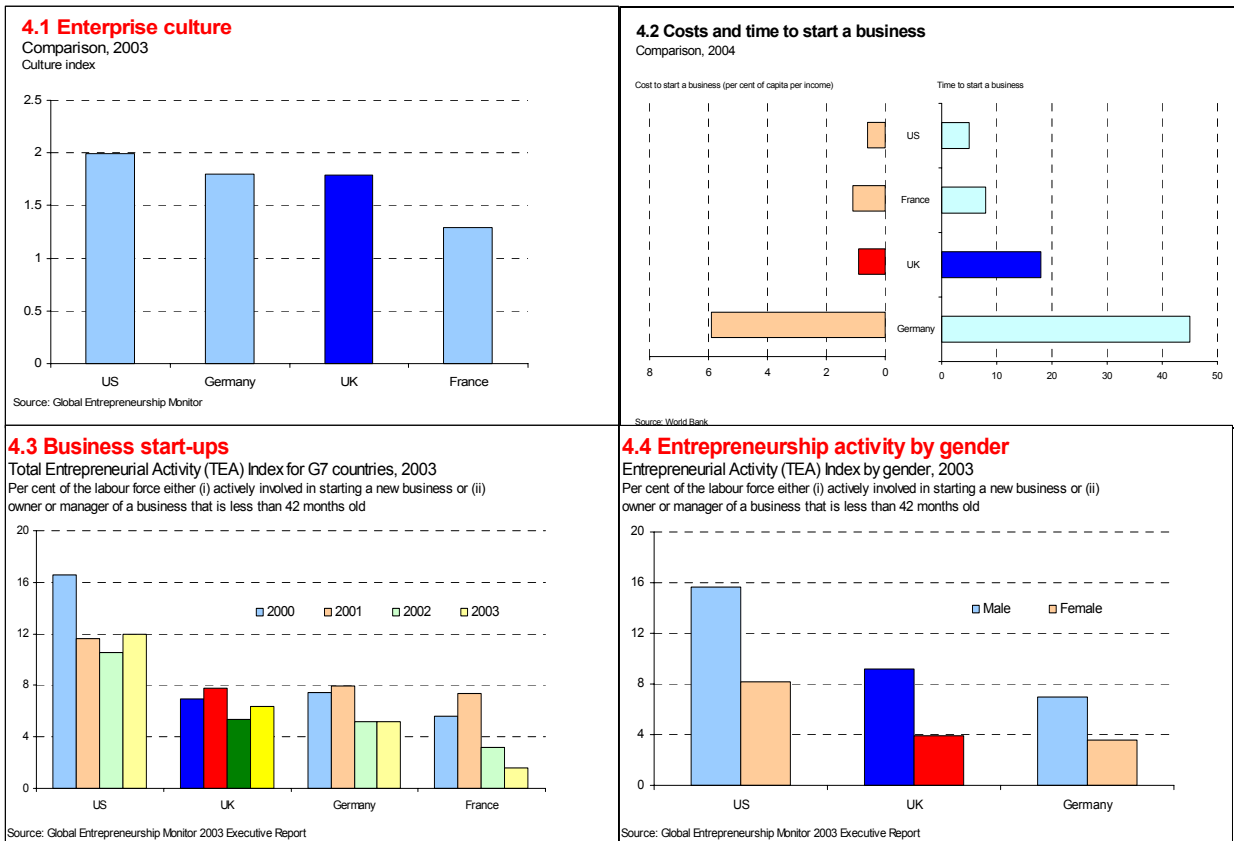
More detailed information on the changing skills levels of the British workforce shows that the performance of the UK has been improving over time. This is especially so for those leaving school, with an increasing proportion of people becoming qualified to the highest skill levels and a declining proportion possessing only basic skills.

Management practice is vital to the performance of firms, to deliver productivity improvements and the delivery of high quality services. **Perceptions of management quality** in the UK also lags the US, Germany and France.

¹ O'Mahony and de Boer (2002), 'Britain's relative productivity performance: Updates to 1999'.

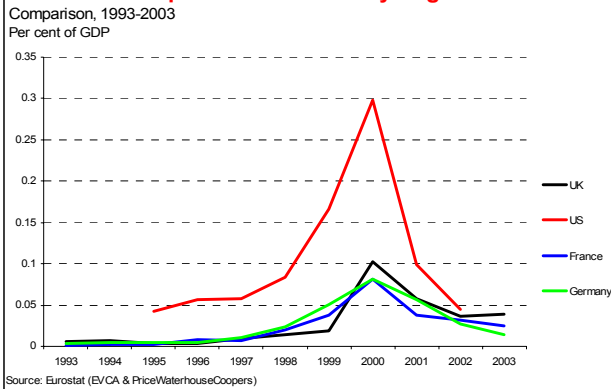
ENTERPRISE

Entrepreneurship drives productivity growth by increasing competitive pressure in the market place, introducing new products and services, and raising the incentive for incumbent firms to invest, innovate and seek efficiency and quality improvements. New firm-level evidence suggests that new firms play an important role in driving productivity growth through the displacement of less efficient businesses and processes, and the reallocation of labour and capital to more productive activities.

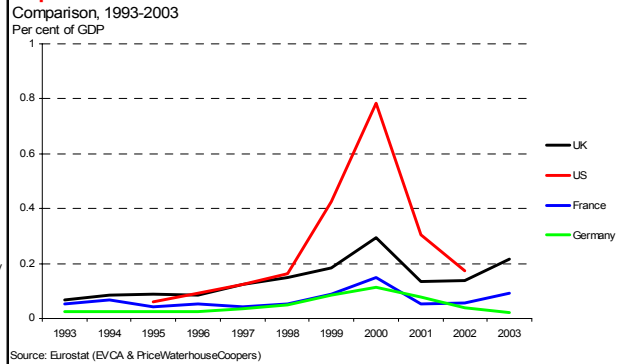


The Government's New Set of Productivity & Competitiveness Indicators

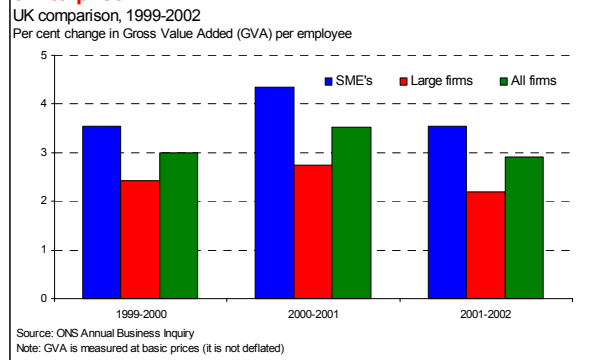
4.5.1 Venture capital investment - early stages



4.5.2 Venture capital investment - Expansion and Replacement



4.6 Productivity growth (basic prices) by size of enterprise



Assessment

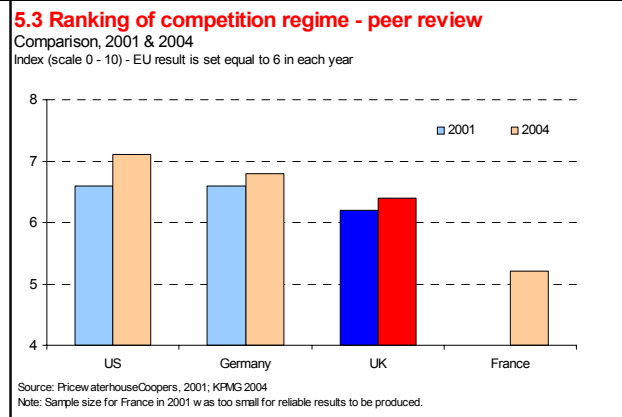
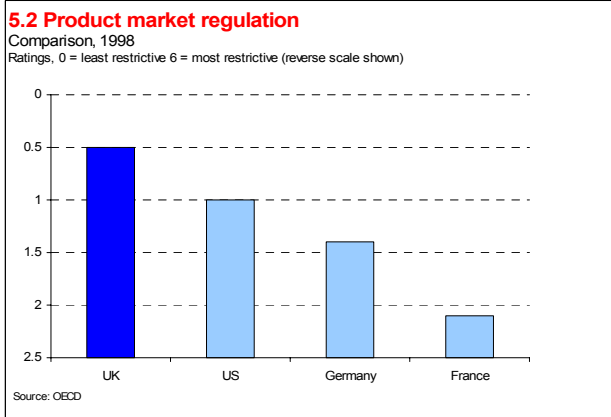
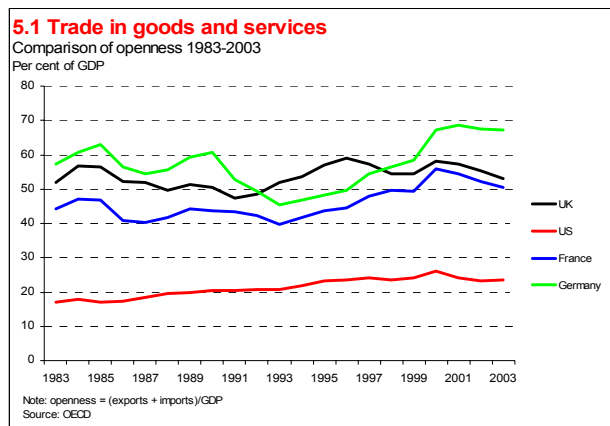
The **entrepreneurial context** index – based on the degree to which people know entrepreneurs, see opportunities, and are confident that they have the skill to implement a new business – summarises the factors which appear to drive entrepreneurship. This measure suggests that UK entrepreneurs face a similar environment to the entrepreneurs of our major competitors. This view is consistent with the UK's positive result on the cost and time it takes to **register a firm**.

The availability of finance is a key indicator of the ability to create enterprises. **Venture capital at the seed and early stages** is similar across all of the countries considered here. Once a new enterprise has been established it is important that these enterprises are able to grow. UK businesses have greater access to **expansionary and replacement venture capital** than either France or Germany, but access to finance for growth still lags behind the US.

The UK's positive performance on these factors helps explain our good showing on entrepreneurial activity. The UK performs as well as France and Germany. The US, as is often the case, leads. However, it also appears that the environment is more favourable to male than female entrepreneurs, with male entrepreneurial activity rates being double those for females. Overall, UK small and medium size enterprises are showing healthy **productivity growth** rates.

COMPETITION

A growing body of research confirms the importance of competition in driving productivity. Historic weaknesses in the competitive intensity of many parts of the UK economy have retarded productivity growth. It is likely that this driver plays an important role in explaining the productivity gap with the US, where firms and managers are subject to higher levels of competition, spurring innovation and efficiency improvements.



Assessment

A number of factors suggest that the competitive environment in the UK is improving. In particular, the UK economy is relatively **open to trade**. Openness creates increased competition in domestic markets, facilitates technology transfer and helps to spread best practise. The UK trades a similar proportion of its GDP to France, though lags Germany. This suggests that the UK is in a good position to take advantage of increasing global trade and to benefit from the accompanying new developments, ideas and technologies. Although the US trades a much lower share than the European countries, it is not directly comparable due to differences in the size and nature of the economy.

The UK also performs well on a comparison of the extent of **product market regulation** which suggests that the UK provides a low-regulation environment for business. Poorly designed regulations, which create artificial barriers to competition between firms, can reduce entry and competition in markets. Professor Michael Porter also noted the UK's low regulatory environment in his recent report on the UK economy.

The overall level of competition in the economy is of course influenced by the nature of the **competition regime**. The Government has undertaken wide-reaching reform of the UK competition regime, increasing both the independence, and the powers, of its regulatory bodies. Although the UK's performance – as measured by expert peer review - has edged up since 2001, the UK remains above France, but below Germany and the US.

The Government's New Set of Productivity & Competitiveness Indicators