

# Aggregate Analysis

## **INTRODUCTION**

To understand overall UK economic performance and to identify key unresolved issues to explore further in our case studies, this chapter benchmarks UK macroeconomic performance against the US, France and West Germany. We use aggregate data and economic literature to explore what appear to be the principal causes of output and productivity gaps between the UK and these comparison countries.

It is worth noting that we tread very little new ground in this aggregate analysis. All of the data is publicly available, and much of it has been analysed numerous times by academics. However, the aggregate analysis is vital to scope the problems that need exploring at the sector case study level – where the McKinsey Global Institute can do original research and bring a unique perspective to the debate.

By combining the aggregate work with the sector case study findings, we can draw conclusions on the main causes of output and productivity performance in the UK, as well as assess the likely impact of removing barriers to productivity growth. The findings of the aggregate analysis and the sector case studies are presented in the synthesis chapter of the document.

## **UK ECONOMIC PERFORMANCE AT THE AGGREGATE LEVEL**

We chose to compare the UK's economic performance with that of the US because the US is the leading economy in current aggregate productivity and output. We also chose to compare the UK's performance with that achieved by West Germany and France because they follow somewhat different economic models and are the European leaders in output and productivity.

The UK has the lowest output per capita of the four comparison countries, trailing the US by 30 per cent at the level of the overall economy, with similar gaps in almost every large segment of the economy. Output per capita can be disaggregated into the amount of labour employed (or total hours worked per capita) and the productivity of that labour (or output per hour worked). The principal driver of poor UK economic performance is low labour productivity, which explains about two-thirds of the UK's relatively low output. Workers in

the US, France and West Germany add about 25 to 35 per cent more value per hour worked than those in the UK. UK labour inputs trail the US by more than 15 per cent, which explains the remaining portion of the output gap with the US, although the UK's labour inputs are similar to those in West Germany and well above those in France.

## Output comparisons

The best available aggregate measure of the material living standard of an economy is its gross domestic product (GDP) – or output - per capita measured in purchasing power parity (PPP) terms. To calculate comparative GDP figures across countries we start with OECD data and then make adjustments based on individual countries' national accounts and other sources (see Appendix for more details on the sources and methodology used for the aggregate analysis). Thus our results differ somewhat from other published results that have been based solely on OECD data. Using this methodology we find that the UK's overall output lags other leading industrialised countries, and the UK has not improved its relative position substantially in the past 50 years.

- ¶ **The UK has the lowest output per capita of the Group of Seven industrialised countries**, trailing the US by about 30 per cent, and West Germany by about 15 per cent (Exhibit 1).
- ¶ **This output gap is not a recent phenomenon.** In fact, the UK has barely closed the output gap with the US over the last 50 years, and during that time both France and West Germany's outputs have surpassed that of the UK (Exhibit 2).

This study focuses specifically on the “market sector,” which excludes government services, provision of health care or education. Output or value-added in these sectors is, in many cases, measured by adding up input costs, and therefore does not reflect output and productivity differences in any meaningful way.

Within the market sector we find that the UK output gap is even wider than the overall GDP gap, and we find some evidence of the UK marginally improving its relative position over the past 25 years.

- ¶ **The gap between the US and the UK is even wider in the market sector<sup>1</sup>.** Output per capita in the market sector trails the US by almost 40 per cent, and West Germany by about 20 per cent. However, there is no significant difference<sup>2</sup> between France and the UK in the market

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<sup>1</sup> Market sector output is compared by using a constructed PPP, based on OECD PPPs.

<sup>2</sup> Given the uncertainty surrounding National Accounts and PPPs, the perspective of the McKinsey Global Institute is that differences are only truly statistically significant if they are greater than 10.

sector (Exhibit 3). This is true in both the manufacturing and market services sub sectors of the market sector:

- *In manufacturing*, the UK's output per capita trails the US by about 40 per cent and West Germany by almost 45 per cent.
- *In market services*<sup>3</sup>, UK output per capita is 40 per cent lower than US output per capita, although in this sub sector the UK compares more favourably to the continent, trailing West Germany by less than 10 per cent and leading France by about 10 per cent.

¶ **The UK has closed the market sector output gap slightly over the past 25 years.** The growth rate of the UK's market sector over the last three business cycles has been marginally higher than the US' and West Germany's. The 1980s cycle was the period of most significant convergence, with the UK's market sector output per capita growing almost a percentage point faster than that of the US (Exhibit 4).

¶ **Despite recent convergence, the gap remains substantial.** The UK's output in the market sector in 1996 is still remains below the US' output in 1970. If the UK managed to grow one per cent faster annually than the US, it would still take more than 50 years for UK market sector output to reach parity with the US.

## Labour productivity comparisons

In the **market sector**, UK labour productivity trails all three countries by more than 20 per cent, and trails the US by almost 30 per cent. This low labour productivity is the primary cause for lower output per capita, and hence, a lower material standard of living (Exhibit 5). This is true in both the manufacturing and market services sub sectors of the market economy.

¶ The labour productivity gap in the **manufacturing sector** is similar to the overall market sector pattern. The UK trails the US by about 30 per cent, it trails France by about 25 per cent, and it trails West Germany by around 20 per cent (Exhibit 6).

¶ In the **market service sector**, the pattern is consistent – UK productivity trails the US, France and West Germany by more than 20 per cent (Exhibit 7).

Since 1970, the UK has been slowly narrowing the labour productivity gap with the US, although the gaps with France and West Germany have widened (Exhibit 8). The UK only recently reached the same level of labour productivity that the US reached in 1970. Common wisdom holds that labour productivity increases

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<sup>3</sup> Market services also includes agriculture, construction, utilities, and mining.

in France and West Germany are partly a function of these countries displacing their labour with capital, which we can only truly ascertain at the industry case study level. The UK has also seen an overall drop in hours worked per capita since 1970, but the decrease has been much more moderate than in France, and, unlike West Germany, which has also experienced decreasing hours worked per capita, there has been an upswing in the UK in recent years.

A possible reason for the UK's relatively low labour productivity is the low level of invested capital. Capital intensity, which measures how much capital each worker has to work with, is significantly lower in the UK.

- ¶ **The UK has low capital intensity.** Capital intensity in the UK market sector is about 20 per cent below the US, and about 30 per cent below France and West Germany. This capital intensity gap is similar in the manufacturing and market service sectors (Exhibit 9).
- ¶ **Low capital intensity is not a function of a different “mix” in the UK.** Low capital intensity in the UK could simply be a function of the UK having more labour in sectors that have low capital intensity (such as retail) than the US. However, capital intensity is lower in each individual sector in the UK (Exhibit 10). In fact, if the UK were to have the US' labour mix, it would have even lower capital intensity.
- ¶ **The UK has low levels of both structures and equipment.** The average UK worker has roughly 25 per cent less equipment to work with than his or her counterpart in the US. While the gap between the UK and US is smaller in structures (about 10 per cent), the equipment intensity gap between the UK and West Germany is significantly larger (Exhibit 11).

### **Labour inputs comparison**

The UK employs 17 per cent fewer hours than the US in the market sector and 19 per cent fewer in the total economy. Part of this is attributable to differences in incentives to work as determined by labour market conditions and regulations. It may also be a function of differences in choices about how many hours to work – the so-called “labour-leisure trade-off”, although it could be argued that this trade-off is similar across the two countries, but that the US is providing more economically attractive employment opportunities than the UK.

The UK is widely regarded as having significantly more flexible labour markets than France or West Germany, and this flexibility is partly captured in cross-country comparisons of hours worked per capita.

- ¶ **Market sector** labour inputs in the UK are much higher than in France, and about the same level as West Germany. However, as shown later in Exhibit 13, West Germany has a demographic advantage over the other countries studied in that a higher proportion of its total population is of

working age, which inflates total labour inputs. Hours worked per capita in the market sector in the UK are about 30 per cent higher than in France (Exhibit 12).

- ¶ West Germany uses significantly more labour hours in **manufacturing** than any of the other comparison countries, with about 30 per cent more hours than the US. Employment per capita in manufacturing in the UK is about 10 per cent lower than in the US.
- ¶ The UK has been somewhat successful in creating jobs in the **market services** sector, which is particularly important as market services continue to be the source of most of the growth in the developed world. Employment in market services is about 35 per cent higher in the UK than in France and about 15 per cent higher than in West Germany.

Labour inputs do not appear to be the main reason for the UK's low output per capita, but the UK still works 19 per cent fewer hours per capita than the US in the total economy. Hours worked per capita can be broken down to four component parts:

- ¶ **Working-age population** as a percentage of total population, which is a function of demographics.
- ¶ **Total employed** as a percentage of working-age population, which is a function of both the participation rate (i.e., the percentage of working age people who actually seek employment) and the employment rate (i.e., the percentage of those people seeking employment who find it).
- ¶ **Full-time equivalents** as a percentage of total employed, which is a function of the part-time rate.
- ¶ **Hours worked** per full-time equivalent, which is a function of legislated holidays and choices about working hours.

The UK's labour input gap relative to the US is driven by three main factors – a lower ratio of total employed to working-age population, a lower ratio of full-time equivalents to total employed, and fewer hours worked per full-time equivalent worker (summarised in Exhibit 13).

- ¶ **Lower ratio of total employed to working age population.** The portion of the working-age population that is employed in the UK is about 10 per cent below the US, driven by higher overall unemployment and a lower participation rate among older workers.
  - Although the UK unemployment rate has been decreasing over the latest economic cycle, the standardised unemployment rate is still 2 per cent higher than the US (Exhibit 14). This may be due, at least in part, to a slightly higher level of unemployment benefits in the UK.

- The participation rate of 55 to 64 year-olds is about 10 per cent lower than in the US, although it is higher than in West Germany and France (Exhibit 15). One of the drivers of this lower participation rate may be that more older workers are claiming disability benefits rather than continuing to seek work (Exhibit 16). The number of people in receipt of disability benefit has increased threefold over the last 20 years to nearly 2 million. People in receipt of disability benefit are no longer required or helped with seeking re-employment. The UK also has higher social benefits for people who are long-term unemployed or over 60 years old, the point at which women currently become eligible for a state retirement pension. Another explanation may be a choice by UK workers in receipt of occupational pensions linked to final salary and in receipt of substantial severance payments to retire early.
- ¶ **Lower ratio of full-time equivalents to total employed, driven by higher part-time rate, especially among females.** The percentage of workers working part-time is higher in the UK than in the US, France or West Germany. The difference is particularly prevalent among female workers – more than 40 per cent of female UK workers work part-time (Exhibit 17). The UK national insurance payment system encourages the use of part time workers, in that it makes them cheaper to employ. When asked in a survey, more than 80 per cent of part-time female workers said they worked part time out of choice. However this choice may well be affected by factors such as the cost and availability of childcare in the UK.
- ¶ **Fewer hours worked per full-time equivalent.** The average worker in the UK works about 7 per cent fewer hours than the average worker in the US. However, workers in the UK work more hours than their counterparts in France and West Germany.

## POTENTIAL CAUSES FOR LOW UK LABOUR PRODUCTIVITY

The UK's low labour productivity and subsequent low output have puzzled experts. The UK has carried out many of the things conceived as being "right" by economists, including having flexible labour markets, deregulating capital markets and privatising state-run companies. However, despite these actions, there still is a significant, albeit slowly closing, gap between UK and US economic performance. In evaluating external causes for low labour productivity at the aggregate level, we have looked at four main areas: capital markets, labour markets, product markets, and other external macroeconomic factors.

## Capital markets

It is clear that UK workers have less capital than their counterparts in the US, France and West Germany. UK consumers save less, and business and government investment is also significantly lower than in other countries:

- ¶ **The UK saves less than other countries.** Gross domestic savings<sup>4</sup> are lower in the UK than in France, the US, West Germany or Japan (included here as an example of a high savings country). While the UK's "savings rate" – or percentage of GDP that is saved – is about the same as France and the US, the absolute level of savings is lower because the UK has a lower GDP (Exhibit 18).
- ¶ **The pattern and uses of savings are different in the UK.** Households and businesses save significantly less in the UK than in West Germany, the US and Japan. More of the UK's savings come from net international inflows, including foreign direct investment, portfolio investments, and loans. However, the borrowing from abroad still does not compensate for the UK's low household, business and government savings rate. The UK also invests the least of the comparison countries in gross fixed capital formation; in other words, a greater proportion of UK savings goes into household tangible assets (Exhibit 19).

The low levels of capital could be the result of low supply or low demand. Aggregate analysis indicates there may be a lack of supply of capital. However, the UK capital market is one of the most developed in the world, and we encountered no evidence to suggest that there is any kind of "market failure" in the capital market to cut off otherwise profitable investments by artificially raising the cost of capital. Additionally, we found no evidence at an aggregate level that there are higher "hurdle rates" in the UK than in other countries.

While low investment levels can explain some of the UK's labour productivity gap, we could find no compelling evidence to prove that it is the main causal factor for low labour productivity. If it were, then as the UK's capital intensity is significantly lower than the US', we would expect its capital productivity to be higher, thereby yielding a similar level of total factor productivity (TFP). However, the UK's capital productivity and TFP are both below those of the US (see Box 1: Total Factor Productivity), and if the UK, at current levels of TFP, were to exhibit US levels of capital intensity, then only around only one fifth of the labour productivity gap would be closed (Exhibit 21).

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<sup>4</sup> Definition of domestic savings includes consumer durables, such as automobiles.

## Labour markets

The UK has flexible labour markets – especially by European standards – and a commonly heard view is that low UK labour productivity is a function of a low skilled workforce.

It is very difficult to obtain any aggregate information on the “skill level,” or “trainability” of the workforce. However, the information we were able to gather does lend some degree of support to the contention that the UK labour force might be less skilled than its French and German counterparts.

¶ **The UK has the most low-educated people of the comparison countries.** Less than 35 per cent of the French and German workforce have “very low” levels of qualification. However, more than 50 per cent of UK workers fall into that “very low” category, having not reached an appropriate standard for the end of compulsory schooling (Exhibit 22).

¶ **UK workers performed relatively poorly in an international literacy benchmarking study.** The OECD studied the literacy of the US, the UK and Germany. The study placed respondents into one of five skill levels on three axes, “prose,” “document” and “quantitative.” In all three cases, the UK had significantly more people in the lowest level than did Germany (Exhibit 23).

While it does appear the UK workforce may have fewer basic “skills” than the German or the French, this does not mean they are inherently unproductive. In fact, on almost any axis of skills, the UK looks remarkably like the US, which is the world leader in both output and productivity. At the industry level, we need to see how different countries organise their workforce to handle what appear to be different levels of skills.

## Product markets

Although they are often overlooked in the debate over causes of low labour productivity, specific product market factors often have a significant effect on labour productivity. It is difficult to look at aggregate product market restrictions: apart from wide-sweeping trade barriers, which the UK, as one of the world’s most open markets, does not have, they are by their nature industry specific. However, in previous country studies undertaken by the McKinsey Global Institute<sup>5</sup>, product market regulations and restrictions have been found to

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<sup>5</sup> See, for example, “Removing Barriers to Growth and Employment in France and Germany” (March, 1997), “Productivity – The Key to an Accelerated Development Path for Brazil” (March, 1998) and “Productivity-led Growth for Korea” (March 1998).

be a primary driver of low output and/or low labour productivity (Exhibit 24). For example:

- ¶ In the **automotive** industry in France and Germany, trade protection has led to a lack of exposure to global best practice, which has stifled productivity growth by domestic producers.
- ¶ In the **airline** industry in Brazil, restriction on competition for routes has lowered competitive intensity and again prevented the adoption of best practices.
- ¶ In the **retail** industry in Korea, strict zoning laws have slowed, and in many cases stopped, the evolution of more efficient retail formats.

Given that we have found little evidence at the aggregate level of either capital or labour market restrictions causing low labour productivity in the UK, we would expect product market factors to play a key role in explaining the output and productivity gap.

### **External macroeconomic factors**

Much of the perceived wisdom about the UK's economic performance centre on external macroeconomic factors. For example, the historic impact of high and volatile inflation rates is said to make UK business people more cautious and less likely to innovate. It is true that since 1970 inflation in the UK has been consistently higher and more volatile than in the US, France, and West Germany, although volatility – measured as the standard deviation of changes in the consumer price index – has decreased sharply since 1983 (Exhibit 25). The high and volatile inflation rates could affect investment decisions, as decisions can be tempered by past experience.

## **CONCLUSIONS AND IMPLICATIONS FOR CASE STUDIES**

Our aggregate analysis suggests that the key factor explaining the UK's relatively low current output level is low labour productivity, which could in part be a function of low capital intensity.

UK companies do invest less, and appear to have a somewhat less “skilled” workforce than other countries, both of which we explore and test further at the industry level. However, there does not appear to be a simple “magic-bullet” reason for low UK labour productivity. This indicates that our detailed industry case studies have the potential to bring significant insight to the drivers of UK labour productivity, and hence, output. The aggregate analysis is, and will always be, inconclusive because it does not capture the microeconomic factors, such as corporate governance structures and industry specific product market

regulations, that can have a significant impact on how managers behave. The only way to determine the relative importance of all of the possible and relevant factors is to study specific industries and to look at how operations differ across countries and the reasons for the different choices managers have made.

## Appendix: Sources and Methodology for Productivity Calculations

We use OECD data as a primary source for most of our aggregate analysis. However, incompleteness and a lack of uniformity in some cases require us to supplement this with data directly from national sources. We have worked closely with Mary O'Mahony at The National Institute of Social and Economic Research and Bart van Ark at the University of Groningen to ensure that our raw data and calculations for the aggregate analysis yield results that are as comparable as possible across countries. The sources and methodology for our work are described below.

¶ **Output:** We define output as value-added at factor cost (i.e., adjusted for indirect taxes plus subsidies). We also remove rent from our output figure. While we start with OECD output data, we supplement this as follows:

**US:** Value added figures for certain sub sectors of the economy are obtained from the Bureau of Economic Analysis' National Income and Product Account to ensure that the output and hours worked data used corresponds to the same set of workers.

**UK:** The UK does not report all its data to the OECD in a fashion comparable to the other countries studied. Thus much of our UK output data comes directly from the Office of National Statistics.

**West Germany:** West German output data to 1993 is based on OECD figures which match German national accounts. Post 1993 we use data from the Statistische Bundesamt (Fachserie 18).

**France:** French data is taken directly from the OECD to 1995. Post 1995 we use additional data from INSEE.

¶ **Labour inputs:** Labour inputs are total hours worked. Total hours worked are either measured directly, or obtained by multiplying the number of jobs by hours worked per job. The OECD does not publish an estimate of total hours worked in an economy. Furthermore, in their 'Employment Outlook' publication they state that the data they provide on annual average hours worked per person in employment is not suitable for comparisons between countries in any one year. Our employment and hours worked data is therefore taken directly from national accounts and other sources:

**US:** Hours worked data comes from the Bureau of Labour Statistics and the Bureau of Economic Analysis<sup>6</sup>.

**UK:** Employment figures come from the Office of National Statistics and the Workforce in Employment survey. Hours worked per employee estimates come from a data set created by Mary O'Mahony.

**West Germany:** Employment figures are obtained from the Statistische Bundesamt (Fachserie 18). Hours worked estimates are obtained from a separate national source.

**France:** Employment and hours worked data come from INSEE.

¶ **Capital inputs:** Capital inputs are gross capital services, calculated using the Perpetual Inventory Method. All of the raw capital data is taken from a data series created by Mary O'Mahony.

¶ **Purchasing Power Parities:** PPPs are constructed for the group of comparison countries by aggregating OECD and Eurostat product-level PPPs (i.e., cheese), and making the PPP multilateral among the group of countries. Given that our PPPs are created to be transitive for our group of four countries rather than for all OECD countries, they differ from those used by the OECD. The market sector PPP is built up of OECD and Eurostat product-level PPPs that match our definition of the market sector. Manufacturing PPPs are based on work by Bart van Ark and are unit value ratios for 1987 updated to 1993.

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<sup>6</sup> There is considerable controversy over estimates of annual hours worked per employee in the United States, with estimates ranging from 1650 to 1900. Wherever possible, we have started with total hours worked rather than attempting to calculate hours per worker.

## **Box 1**

### **TOTAL FACTOR PRODUCTIVITY**

The two factor inputs in an economy are labour and capital. Generally speaking, the addition of more capital into an economy results in a diminished absolute level of capital productivity because each additional increment of capital yields lower capital productivity than the previous one. At the same time, however, raising capital intensity levels also has the effect of raising labour productivity as each unit of labour input can then leverage the additional capital.

A high level of productivity in either (but not both) labour or capital is generally not in itself efficient because both inputs are scarce. In any economy it is important therefore to develop an optimal mix. Thus total factor productivity (TFP), which measures how effectively an economy uses these two inputs combined, is a key measure.

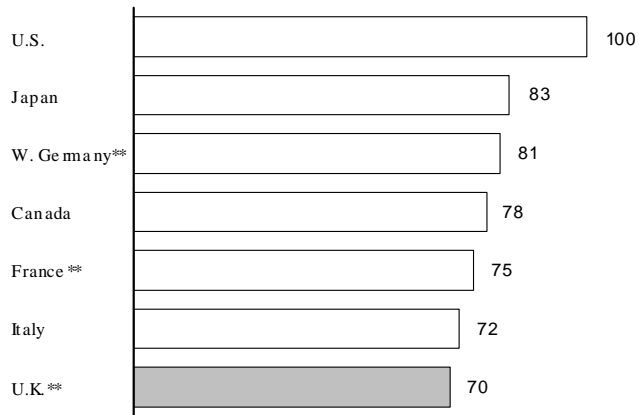
The UK's TFP trails all of the comparison countries. We have already seen that the UK has low labour productivity. In addition, the UK also has capital productivity that is below the US, and only slightly higher than France and West Germany. This is despite the UK having significantly lower capital intensity than any of the three comparison countries. As a result, the UK's TFP is around 20 per cent below US levels and around 10 per cent below France and West German levels (Exhibit 20).

Our focus on labour productivity, with little reference to capital productivity, in the main text of this report is justified by the fact that, at least relative to the US, the UK exhibits both lower labour productivity and lower capital productivity. Since the gap is greater in labour productivity, and labour makes up a greater share of total factor inputs than capital, then explaining the labour productivity gap should provide much of the explanation for the TFP and output gap.

Exhibit 1

**GDP PER CAPITA\* OF G7 COUNTRIES, 1994-96**

Indexed to U.S. = 100



\* Converted at GDP Purchasing Power Parities

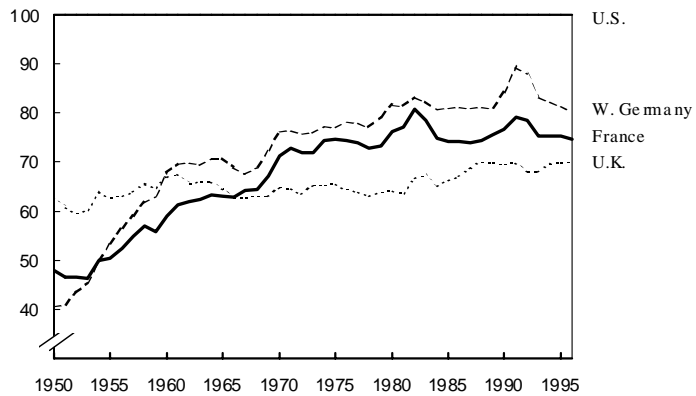
\*\* Numbers may differ from OECD because of modified output and PPP

Source: OECD; McKinsey analysis

Exhibit 2

**HISTORIC GDP PER CAPITA\*, 1950-96**

Indexed to U.S. = 100



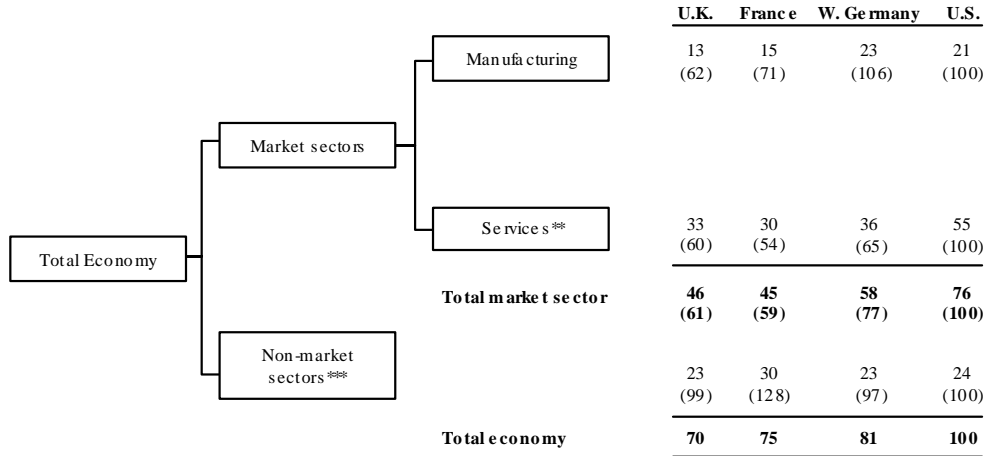
\* Converted at OECD GDP Purchasing Power Parities

Source: OECD; McKinsey analysis

Exhibit 3

**OUTPUT PER CAPITA\* BY ECONOMIC SECTOR, 1994-96**

Indexed to U.S. total economy = 100; ( ) indexed to U.S. sector = 100



\* GDP excluding indirect taxes, subsidies and rents; converted at 1993 Purchasing Power Parities

\*\* Services include market services (transportation, communication, wholesale and retail trade, finance, insurance, real estate and services), agriculture, construction, utilities, and mining

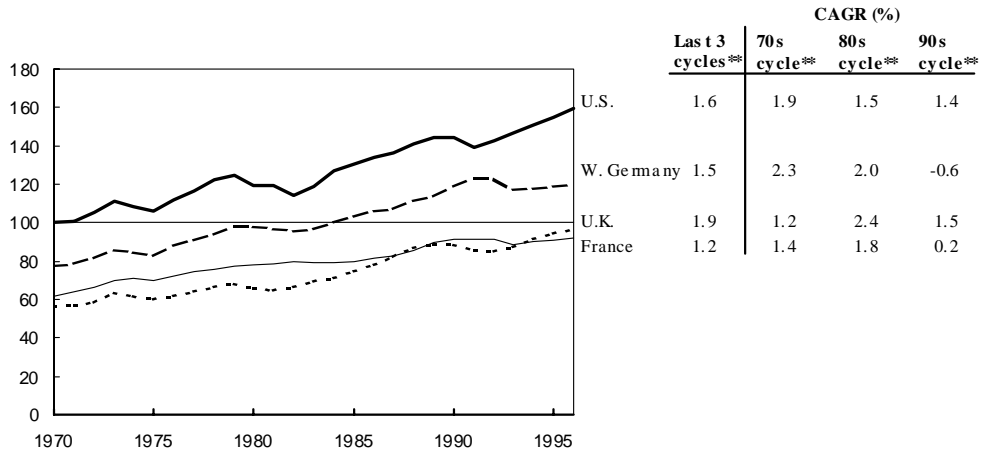
\*\*\* Non-market sectors include government services, health, and education

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 4

**MARKET SECTOR OUTPUT\* PER CAPITA, 1970-96**

Indexed to U.S. in 1970 = 100



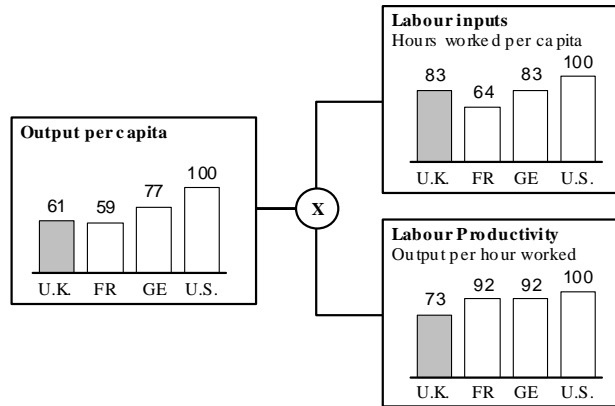
\* Converted at constructed 1993 market sector PPP

\*\* Growth rates refer to business cycles (measured as peak to peak); for the U.S., 70s cycle is 1973-79, 80s cycle is 79-89, 90s cycle is 89-96; for West Germany 70s cycle is 1973-79, 80s cycle is 79-91, 90s cycle is 91-96; for the U.K., 70s cycle is 1973-79, 80s cycle is 79-90, 90s cycle is 90-96; for France, 70s cycle is 74-82, 80s cycle is 82-90, 90s cycle is 90-96

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 5

**MARKET SECTOR OUTPUT\* PER CAPITA, 1994–96**  
Indexed to U.S. = 100

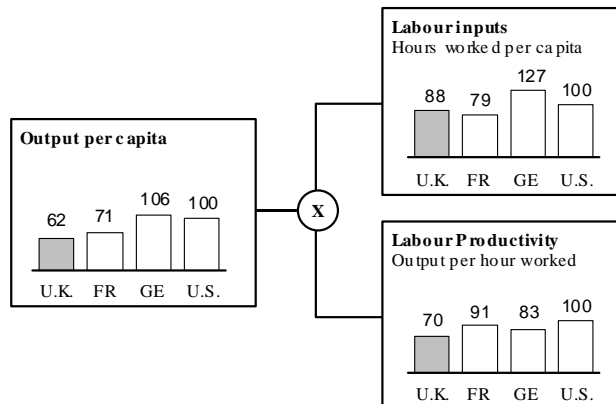


\* GDP excluding indirect taxes, subsidies and rents; converted at 1993 Purchasing Power Parities; market sector does not include government services, health and education

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 6

**MANUFACTURING SECTOR OUTPUT\* PER CAPITA, 1994–96**  
Indexed to U.S. = 100

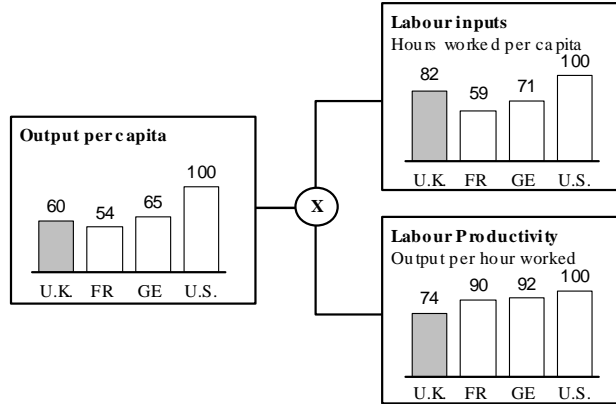


\* GDP excluding indirect taxes, subsidies and rents; converted at 1993 Purchasing Power Parities

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 7

**MARKET SERVICE SECTOR OUTPUT\* PER CAPITA, 1994-96**  
 Indexed to U.S. = 100

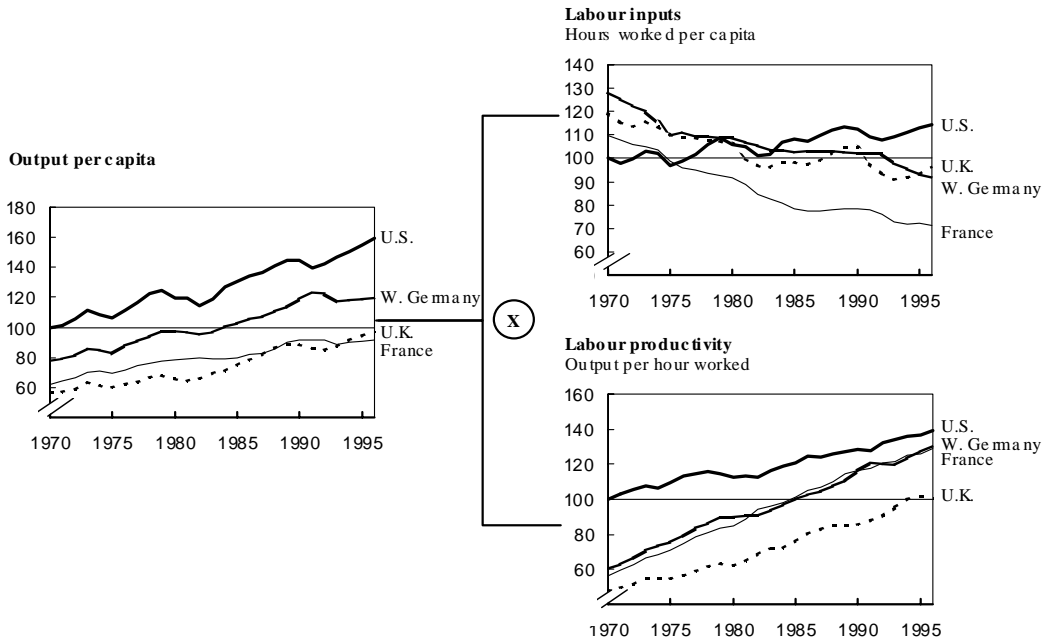


\* GDP excluding indirect taxes, subsidies and rents; converted at 1993 Purchasing Power Parities; Market services includes transportation, communication, wholesale and retail trade, finance, insurance, real estate and services, agriculture, construction, utilities, and mining

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 8

**MARKET SECTOR OUTPUT\* PER CAPITA, 1970-96**  
 All figures indexed to U.S. in 1970 = 100



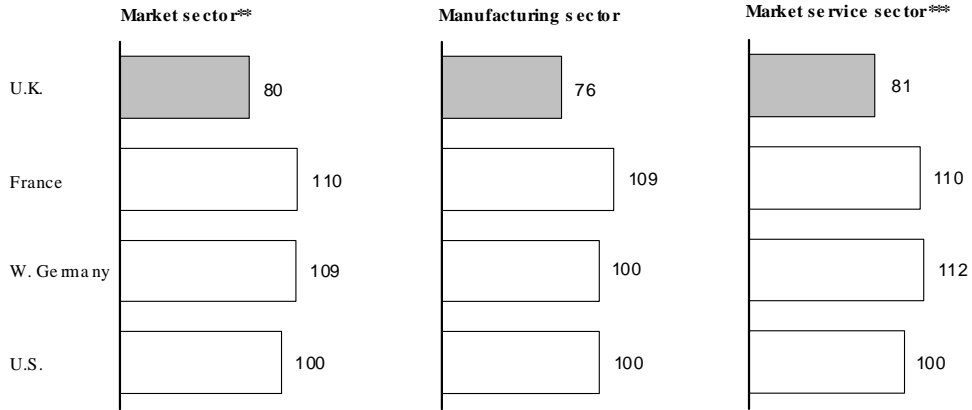
\* GDP excluding indirect taxes, subsidies and rents; converted at 1993 Purchasing Power Parities; market sector does not include government services, health and education

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 9

**CAPITAL INTENSITY BY SECTOR, 1994-96**

Capital services\* per hour worked; Indexed to U.S. = 100



\* Using O'Mahony PPPs on sector-specific capital estimates

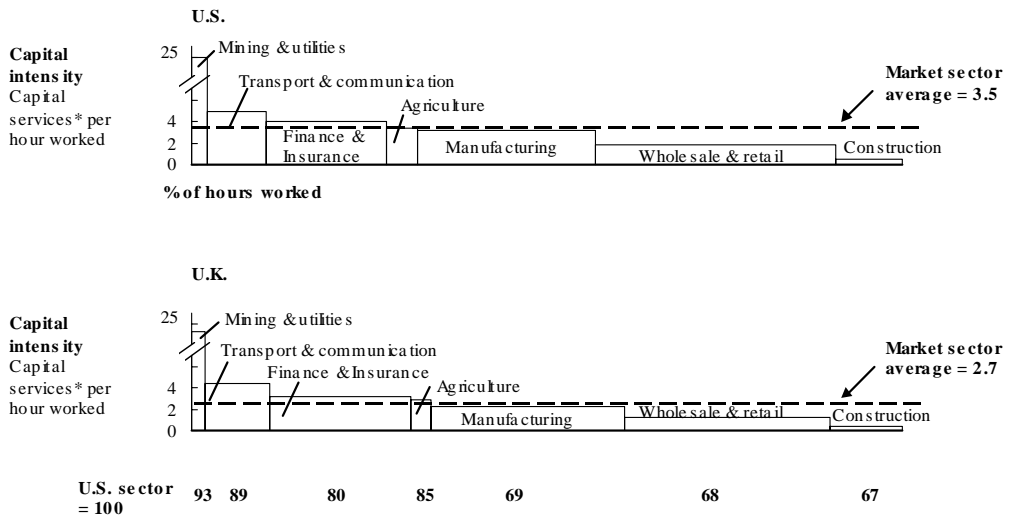
\*\* Does not include government services, health care, and education

\*\*\* Services include market services (transportation, communication, wholesale and retail trade, finance, insurance, real estate and services), agriculture, construction, utilities, and mining

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; O'Mahony; National sources; McKinsey

Exhibit 10

**SECTOR-SPECIFIC CAPITAL INTENSITY & LABOUR HOURS, 1995**

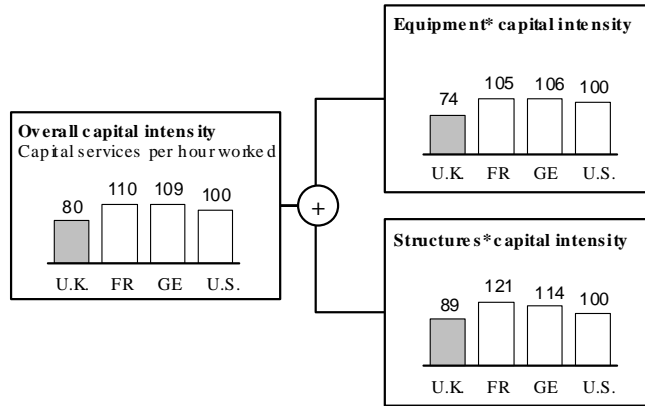


\* Converted at O'Mahony constructed PPPs

Source: O'Mahony; Labour Market Trends; OECD Labour Force Statistics; OECD Employment Outlook; BLS; BEA; McKinsey analysis

Exhibit 11

**MARKET SECTOR CAPITAL INTENSITY SPLIT, 1994-96**  
Indexed to U.S. = 100



\* Equipment makes up roughly 2/3 of capital services in all 4 countries

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; O'Mahony; National sources; McKinsey

Exhibit 12

**LABOUR INPUTS PER CAPITA\* BY ECONOMIC SECTOR, 1994-96**  
Indexed to U.S. total economy = 100; ( ) indexed to U.S. sector = 100

	U.K.	France	Germany	U.S.
Manufacturing	14 (88)	13 (79)	21 (127)	16 (100)
Services**	49 (82)	36 (59)	42 (71)	60 (100)
<b>Total market sector</b>	<b>63 (83)</b>	<b>48 (64)</b>	<b>63 (83)</b>	<b>76 (100)</b>
Non-market sectors***	18 (77)	19 (81)	15 (63)	24 (100)
<b>Total economy</b>	<b>81</b>	<b>68</b>	<b>78</b>	<b>100</b>

\* Total hours worked per capita

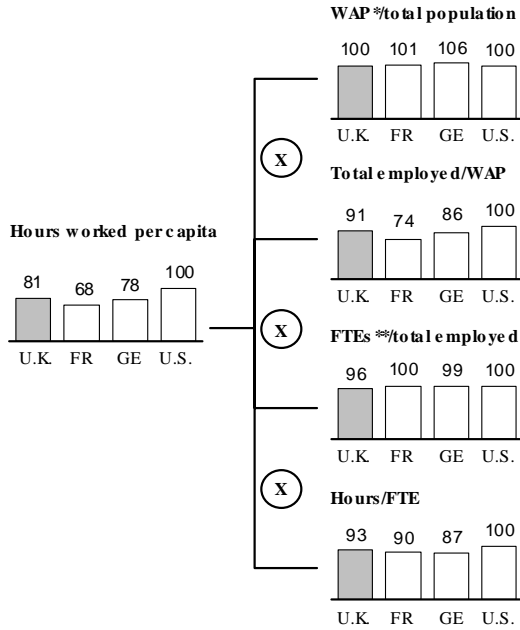
\*\* Services include market services (transportation, communication, wholesale and retail trade, finance, insurance, real estate and services), agriculture, construction, utilities, and mining

\*\*\* Non-market sectors include government services, health and education

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; McKinsey

Exhibit 13

**DRIVERS OF EMPLOYMENT, 1994-96**  
 Indexed to U.S. total economy = 100



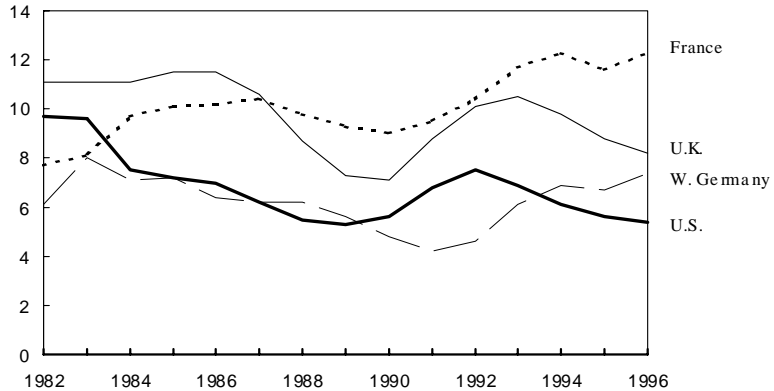
\* Working Age Population; between 15 and 64 years old

\*\* Full-time Equivalent Employees; adjusted for part-time workers, where 1 part-time worker equals 0.5 FTE

Source: OECD Employment Outlook; OECD National Accounts; National sources; McKinsey

Exhibit 14

**STANDARDISED UNEMPLOYMENT RATES BY COUNTRY**  
 % of active workforce (market and non-market sectors)

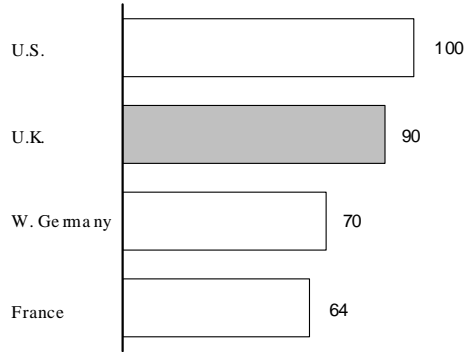


Source: OECD Labour Force Statistics; OECD Employment Outlook; Labour Market Trends; McKinsey analysis

Exhibit 15

**PARTICIPATION RATE FOR AGES 55-64, 1996**

Indexed to U.S.=100

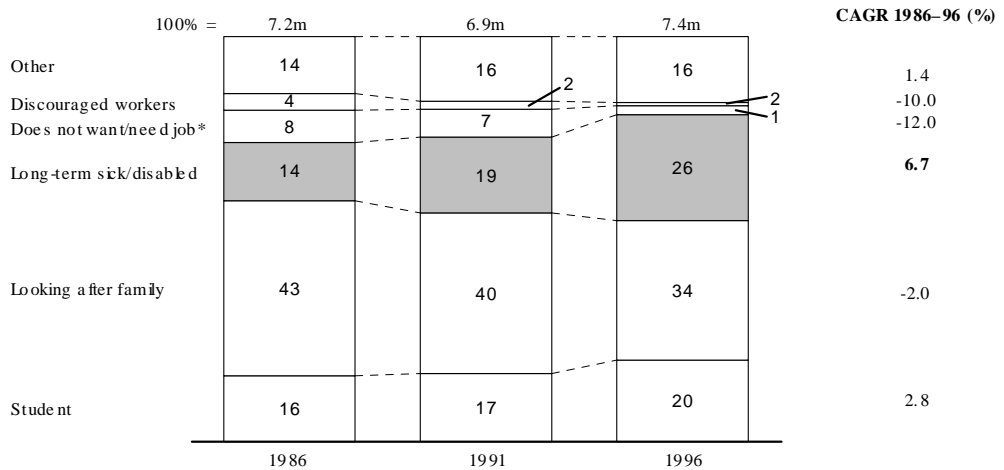


Source: OECD Employment Outlook; OECD National Accounts; McKinsey

Exhibit 16

**REASONS FOR INACTIVITY IN U.K. WORKING AGE POPULATION**

% of total



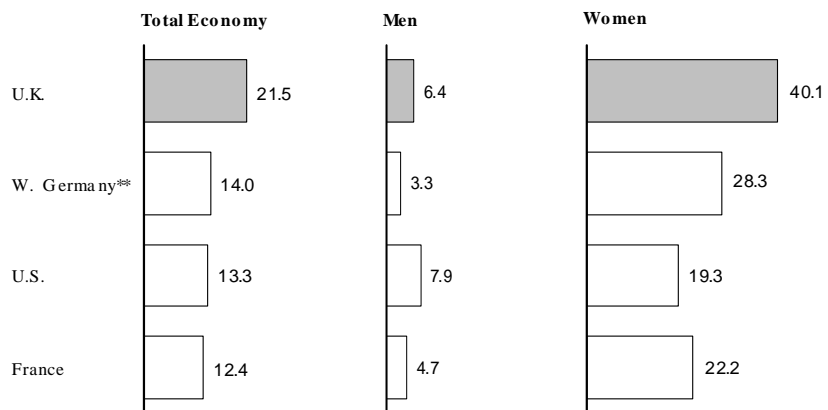
\* May not provide consistent time series

Source: Labour Market Trends; McKinsey analysis

Exhibit 17

**PART-TIME EMPLOYMENT\* AS A PROPORTION OF EMPLOYMENT, 1994-96**

%



\* Defined as usually working fewer than 30 hours per week; includes both market and non-market sectors

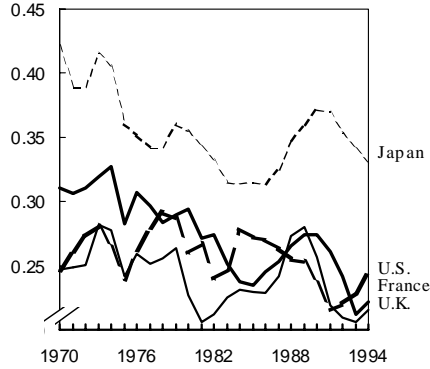
\*\* Data series ends in 1995; 1996 assumed to be the same

Source: OECD Employment Outlook; McKinsey analysis

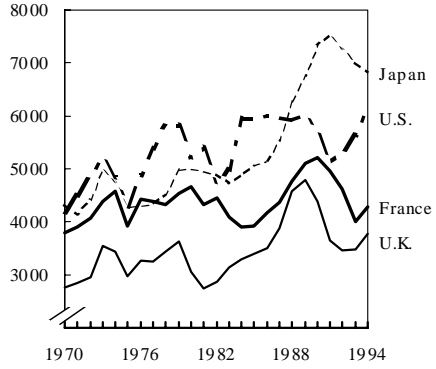
Exhibit 18

**GROSS DOMESTIC SAVINGS\***

% of GDP



1993 U.S. \$ per capita



\* Converted at 1993 GDP OECD PPPs; includes consumer durables  
 Source: OECD National Accounts; McKinsey analysis

Exhibit 19

**SOURCES AND USES OF GROSS SAVINGS, 1986-94**

% of GDP

Sources\*

U.S.	Jap	Fra	Ger**	U.K.	
11.8	15.2	7.3	19.4	9.6	Households
12.7	15.0	17.2	10.6	11.2	Businesses
1.7	-2.8	0.0	-2.7	3.1	Net international inflows***
-2.4	7.3	0.3	1.5	-0.5	Government
23.8	34.7	24.9	28.8	23.5	<b>Total</b>

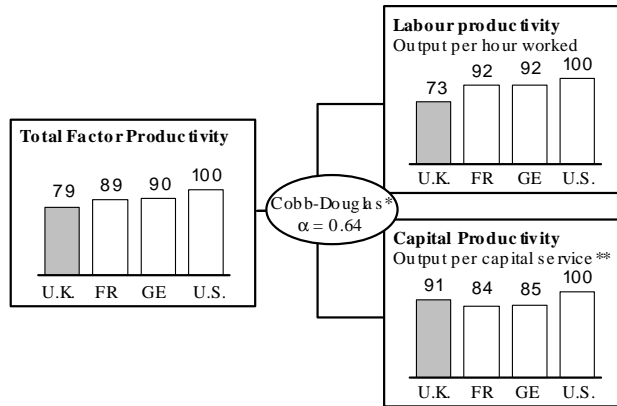
Uses\*

U.S.	Jap	Fra	Ger**	U.K.	
9.1	11.7	11.2	11.3	10.9	Household tangible assets
1.7	5.4	3.3	2.2	1.9	Government GFCF****
12.9	16.9	10.1	15.1	10.5	Business GFCF****
14.6	22.3	13.4	17.3	12.4	<b>Business &amp; government</b>
23.7	34.0	24.6	28.6	23.3	<b>Total</b>

\* Sums may not equal because of rounding, statistical discrepancies in OECD accounts  
 \*\* West Germany, data only from 1987-93  
 \*\*\* Includes FDI portfolio investments, and loans  
 \*\*\*\* Gross Fixed Capital Formation  
 Source: OECD National Accounts; McKinsey analysis

Exhibit 20

**TOTAL FACTOR PRODUCTIVITY, MARKET SECTOR, 1994-96**  
Indexed to U.S. = 100



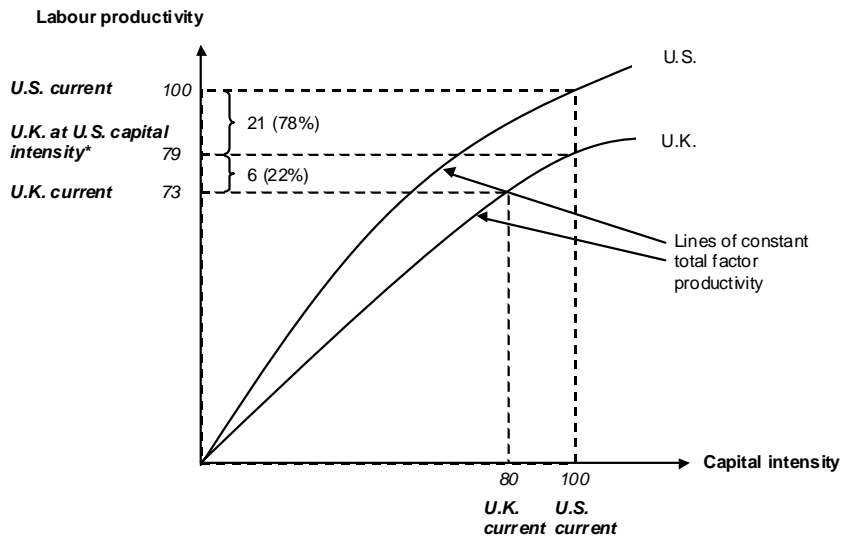
\* Cobb-Douglas production function, share of labour average of 4 countries

\*\* Using O'Mahony PPPs on sector-specific capital estimates

Source: OECD National Accounts; OECD PPPs; Fisher PPPs; van Ark PPPs; National sources; O'Mahony; McKinsey

Exhibit 21

**IMPACT OF INCREASING U.K. CAPITAL INTENSITY**  
Indexed to U.S. = 100



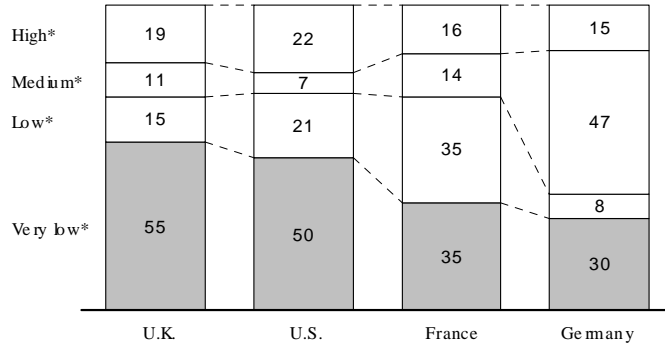
\* Assumes same total factor productivity as current U.K.

Source: OECD National accounts; OECD PPPs; Fisher PPPs; Van Ark PPPs; National sources; McKinsey analysis

Exhibit 22

**DISTRIBUTION OF POPULATION BY QUALIFICATION LEVEL**

%



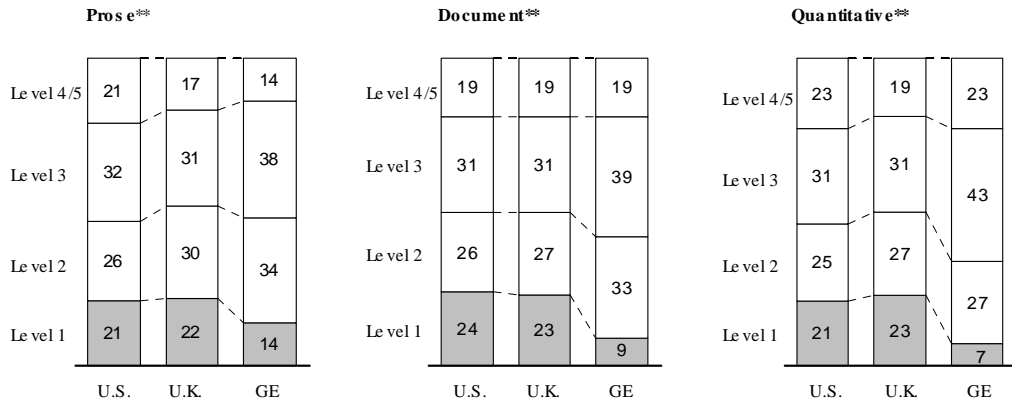
\* Very low = not reaching standard appropriate to the end of compulsory schooling; Low = standard appropriate to the end of compulsory schooling; Medium = equivalent to at least 3 A Levels or NVG; High = at least degree or professional qualification

Source: U.K. Skills Audit; McKinsey analysis

Exhibit 23

**BREAKDOWN OF BASIC LITERACY SCORES BY SKILL LEVEL\*, 1994-95**

% of respondents in skill level



\* Tasks grouped into 5 'levels' according to empirically determined progression of information-processing skills & strategies; level 4/5 is highest ranking

\*\* Prose refers to understanding and using information contained in texts; document refers to processing and using information presented in forms such as charts, graphs, and maps; quantitative refers to being able to deal with numbers and basic mathematical operations

Source: International Adult Literacy Survey, 1994-95; McKinsey analysis

Exhibit 24

**SUMMARY OF PREVIOUS MGI FINDINGS**

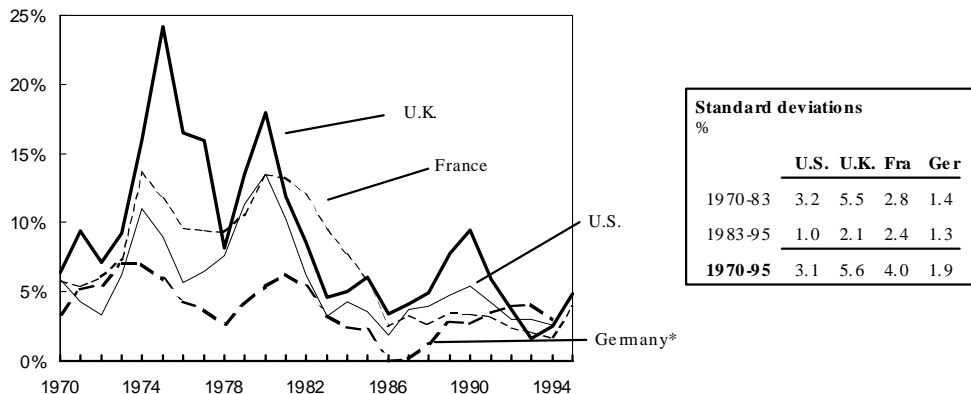
- Important
- Secondary
- Undifferentiating

External factors explaining lower output						
Country	Output per capita	Macro-economic	Labour Market	Capital Market	Product Market	Example of product market regulations
Sweden (1995)	70	-	○	○	●	<ul style="list-style-type: none"> <li>• Farmers' cooperatives and other large food manufacturers were granted domestic monopolies (food processing)</li> </ul>
France/West Germany (1997)	60 (Fr) 70 (Ge)	-	○	-	●	<ul style="list-style-type: none"> <li>• Trade protection led to lack of exposure to global best practice (automotive)</li> <li>• Regulations led to uneconomic pricing (telecom, retail banking)</li> </ul>
Brazil (1998)	20	●	-	○	●	<ul style="list-style-type: none"> <li>• Restriction on competition for airline routes (airlines)</li> <li>• Import tariffs on IT (airlines, retail banking)</li> <li>• Lack of zoning law enforcement in residential housing (housing construction)</li> </ul>
Korea (1998)	50	-	○	○	●	<ul style="list-style-type: none"> <li>• Strict zoning laws prevented the evolution of more efficient retail formats (retail)</li> <li>• Tariff and non-tariff barriers have protected industries from exposure to best practice (steel)</li> </ul>

Exhibit 25

**VOLATILITY OF INFLATION GROWTH, 1970-95**

Increase in Consumer Price Index, %



Source: International Monetary Fund; McKinsey analysis