national
STATiSTiCS

Economic & Labour Market Review

Contents

palgrave
macmillan

National Statistics are produced to the professional standards set out in the National Statistics Code of Practice. They are produced free from political influence. Not all of the statistics reported on in this publication are within the scope of National Statistics.

The inclusion of reports on studies by non-governmental bodies does not imply endorsement by the Office for National Statistics or any other government department of the views or opinions expressed, nor of the methodology used.

About the Office for National Statistics

The Office for National Statistics (ONS) is the government agency responsible for compiling, analysing and disseminating economic, social and demographic statistics about the UK. It also administers the statutory registration of births, marriages and deaths in England and Wales.

The Director of ONS is also the National Statistician and the Registrar General for England and Wales.

In brief

Expert Group meeting on measuring the economically active population in censuses

In November 2007, ONS participated in a five-day Expert Group meeting at the United Nations Statistics Division (UNSD) headquarters in New York. Participants included experts from the UNSD, International Labour Organisation, a range of developed and developing countries, and an international consultant on labour statistics; Mr Robert J 'Bob' Pember. The objective was to review and update the 'Handbook on Measuring the Economically Active Population in Censuses'. The Handbook is a practical guide to organising and implementing the Census of Population, and is intended for use in the 2010/2011 round of population censuses.

Issues discussed by the Group included both conceptual and operational definitions of the economically active population, the practicalities of measuring these and related concepts, and a range of issues pertinent to both developed and developing countries. The Handbook covers definitions and concepts, methodology, data collection, processing, tabulation, analysis, validation, dissemination and the uses of census data.

The Handbook focuses on internationally agreed definitions and classifications. It emphasises the importance of consistency with definitions used in labour force surveys, in addition to the importance of benefiting from the experience gained in labour force surveys in collecting and analysing the characteristics of interest.

The meeting was conducted in a spirit of co-operation, and the outcome is an updated Handbook, which is a detailed and practical guide to all countries implementing a population census. The Handbook is designed to be a user-friendly self-contained document, and users can utilise the Handbook as a whole, or refer to individual chapters as required. Further work recommended by the Group included a summarised version of the Handbook to be produced for training purposes. The Handbook is available from the UNSD website at the address given below.

More information

✉ http://unstats.un.org/unsd/default.htm

Contact

Marilyn Thomas
☎ 01633 455708
✉ marilyn.thomas@ons.gsi.gov.uk

ONS reduces business burdens

Many of the statistical outputs reported in *Economic & Labour Market Review* depend on the wide range of business surveys that ONS carries out each year. These surveys impose a burden on those businesses included in survey samples. ONS has a long-standing commitment to minimise this burden. In 2005 this commitment was given fresh impetus through the government-wide Better Regulation initiative. Nineteen government departments and regulators – including ONS – signed up to targets to reduce the administrative cost to business of government regulation by up to 25 per cent by 2010.

The burden on business of ONS statistics was estimated to be just under £40 million in 2005 – only 0.3 per cent of the total burden of government regulation - but nevertheless a real irritant and cost to the businesses included in surveys. ONS signed up to a 2010 target to reduce those burdens over which there is some discretion – excluding those undertaken predominately to meet European Union regulations – by 25 per cent (£7.5 million). Detailed plans are included in the ONS Simplification Plan 2007 which was published on 11 December 2007; the address is given below.

In the first two years since the target was set, ONS has reduced the annual burden of its business surveys by £6 million and has plans to increase this total to £7.5 million by 2010. There are, however, pressures to increase burdens to meet new European Union demands or to improve the quality of regional and service sector statistics. Meeting these new demands, while keeping the cost to businesses low, will depend on ONS using some of the administrative data already held by government. The Statistics and Registration Service Act 2007 will enable information-sharing agreements between the new Statistics Board and other public authorities, subject to Parliamentary approval.

More information

www.statistics.gov.uk/statbase/product.asp?vlnk=14683

Contact

Peter J Fullerton
☎ 01633 819072
✉ peter.j.fullerton@ons.gsi.gov.uk

Janet Aplin
☎ 01633 813472
✉ janet.aplin@ons.gsi.gov.uk

Move from monthly to quarterly Labour Market Regional First Releases

Following a review of the publication of the Labour Market Regional First Releases, it was decided to move the production of these First Releases from monthly to quarterly. The change is due to take place from February 2008. This month (January) sees the publication of the last Regional First Releases on a monthly basis, with the next Regional First Releases published a quarter later, in May 2008. Subsequent Regional First Releases will then follow in August and November with the yearly cycle again beginning in February of the following year.

This change will not affect the availability of the tables that accompany the Labour Market Regional First Releases. The Regional and Local Area Results in Tables 1 to 17 will continue to be released on the web as Excel tables each month. There will also be a covering note detailing the changes to 'this month's Release' and expected changes to 'next month's Release'. However, the accompanying text, graphs and maps will not be produced monthly, only being available as part of the quarterly First Releases. The new monthly Excel version of the tables will also be available in the months when the quarterly First Releases are produced.

Key users have been consulted regarding this change and it is not expected that it will have an adverse impact on their requirements for the data. The new arrangements will be reviewed after implementation to assess the effectiveness of the release process.

More information

✉ www.statistics.gov.uk/onlineproducts/lms_regional.asp

Contact

    Bob Watson
📞 01633 455070
✉ bob.watson@ons.gsi.gov.uk

International comparisons of economic welfare

I n December 2007, the World Bank released global results of the International Comparison Programme (ICP). The ICP is a global statistical initiative which, by calculating relative price levels (referred to as purchasing power parities) between countries and deriving the associated real gross domestic product (GDP) per capita figures, makes it possible to compare the relative economic welfare across countries.

Among the successes of this round of the ICP, the first since 1993, have been the broader coverage of the exercise, both in terms of expenditure covered and countries included, and the improvements in methodology and governance that have been introduced. In terms of coverage, 146 countries are included in the 2005 results, including a successful contribution from 48 African countries (over twice as many than participated in the previous round). The 2005 round of the ICP has also seen coverage of the results increase in terms of the components of a country's economy which are measured. In 1993, data collection was far more limited; a significant proportion of countries only collected data for a very small proportion of GDP, and more estimation took place. Data collection for the 2005 round included a much broader set of goods and services.

An analysis of the ICP results reveals an interesting story for many countries. China, for example, participated in the ICP survey programme for the first time ever and India took part for the first time since 1985. The previous, less reliable, methods led to estimates of their GDPs that were 40 per cent larger than the results of the new, improved methods. China, however still ranks as the world's second largest economy, with over 9 per cent of world production, and India follows as the fifth largest, with over 4 per cent of the world total. The UK is among the twelve economies (along with the United States, Japan, Germany, France, Italy, Spain, China, India, Russia, Brazil and Mexico) that together account for more than two-thirds of the world's output.

A more detailed article on the ICP and

ONS involvement in the programme in Africa will follow next year.

More information

✉ www.worldbank.org/data/icp

Contact

    David Baran
📞 020 7533 5818
✉ david.baran@ons.gsi.gov.uk

UPDATES

Updates to statistics on www.statistics.gov.uk

3 December

Environmental taxes

Environmental taxes 2.7% of GDP in 2006
www.statistics.gov.uk/cci/nugget.asp?id=152

Natural resource and product use

Resource use falls while economy grows between 2005 and 2006
www.statistics.gov.uk/cci/nugget.asp?id=158

Oil and gas values

Reserves total £199 billion at end of 2006
www.statistics.gov.uk/cci/nugget.asp?id=149

6 December

Index of production

Manufacturing: 0.1% rise into October 2007
www.statistics.gov.uk/cci/nugget.asp?id=198

10 December

Producer prices

Factory gate inflation rises to 4.5% in November
www.statistics.gov.uk/cci/nugget.asp?id=248

11 December

UK trade

Deficit narrowed to £4.1 billion in October 2007
www.statistics.gov.uk/cci/nugget.asp?id=199

12 December

Average earnings

Pay growth steady in the year to October 2007
www.statistics.gov.uk/cci/nugget.asp?id=10

Employment

Rate increases to 74.5% in three months to October
www.statistics.gov.uk/cci/nugget.asp?id=12

Public sector employment

Employment falls in Q3 2007
www.statistics.gov.uk/cci/nugget.asp?id=407

14 December

Local GVA

Inner London still highest contributor in 2005
www.statistics.gov.uk/cci/nugget.asp?id=582

Regional GVA

Highest in London and South East in 2006
www.statistics.gov.uk/cci/nugget.asp?id=420

18 December

Inflation

November: CPI at 2.1%; RPI up to 4.3%
www.statistics.gov.uk/cci/nugget.asp?id=19

19 December

Business investment

2.0% rise in Q3 2007
www.statistics.gov.uk/cci/nugget.asp?id=258

Investment

Institutional net investment £30.9 billion in Q3 2007
www.statistics.gov.uk/cci/nugget.asp?id=396

20 December

Balance of payments

2007 Q3: UK deficit widens
www.statistics.gov.uk/cci/nugget.asp?id=194

GDP growth

Economy grew by 0.7% in Q3 2007
www.statistics.gov.uk/cci/nugget.asp?id=192

Public sector

November: £9.1 billion current budget deficit
www.statistics.gov.uk/cci/nugget.asp?id=206

21 December

Index of services

0.7% three-monthly rise into October
www.statistics.gov.uk/cci/nugget.asp?id=558

Productivity

Productivity growth increases in Q3
www.statistics.gov.uk/cci/nugget.asp?id=133

Retail sales

Positive underlying growth sustained
www.statistics.gov.uk/cci/nugget.asp?id=256

3 January 2008

Corporate profitability

16.0% in Q3 2007
www.statistics.gov.uk/cci/nugget.asp?id=196

FORTHCOMING RELEASES

Future statistical releases on www.statistics.gov.uk

7 January

Focus on consumer price indices – November 2007

MQ5: investment by insurance companies, pension funds and trusts – Q3 2007

10 January

UK trade – November 2007

11 January

Index of production – November 2007

14 January

Producer prices – December 2007

15 January

Consumer price indices – December 2007

MM24: Monthly review of external trade statistics – November 2007

16 January

Labour market statistics – January 2008

MM19: Aerospace and electronic cost indices – October 2007

17 January

Public and private sector breakdown of labour disputes

18 January

Research & Development in UK Businesses – MA14 Business Monitor

Retail sales – December 2007

SDM28: Retail sales – December 2007

21 January

Business spending on capital items survey – 2006

Digest of engineering turnover and orders – November 2007

Focus on consumer price indices – December 2007

Public sector finances – December 2007

22 January

MM22: Producer prices – December 2007

23 January

Gross domestic product (GDP) – preliminary estimate Q4 2007

Index of services – November 2007

24 January

Public sector finances: supplementary (quarterly) data

25 January

Distributive and service trades – November 2007

28 January

Price Index Numbers for Current Cost Accounting (PINCCA) (MM17) – December 2007

Economic review

January 2008

Anis Chowdhury
Office for National Statistics

SUMMARY

GDP growth continued to grow robustly in 2007 quarter three, although at a slightly slower pace than in quarter two. Growth continued to be driven by the service sector offset by lower manufacturing growth. On the expenditure side, household spending and business investment strengthened in comparison with quarter two. The current account deficit and the trade deficit widened in quarter three. The labour market continued to be buoyant but average earnings remain relatively subdued. The public sector finance position deteriorated in November 2007. Consumer price inflation was unchanged in November and was above the government's target. Producer output and input price inflation accelerated in November.

GROSS DOMESTIC PRODUCT

Third quarter growth of 0.7 per cent

GDP growth for the third quarter of 2007 is estimated to have grown strongly, by 0.7 per cent, slightly down from 0.8 per cent growth in the previous quarter. The annual rate of growth has now reached 3.3 per cent up from 3.2 per cent in quarter two (**Figure 1**).

The growth rate in the UK economy in quarter three continued to be driven by strong service sector output. This was offset by a weakening in industrial output growth in the production sector of the economy, in particular there was a slowing in manufacturing and mining and quarrying. The construction sector continued to grow strongly.

OTHER MAJOR ECONOMIES

Global growth rebounds

Data for 2007 quarter three reported an upturn in growth for the major OECD countries.

US GDP data for the third quarter of 2007 showed a continued upturn following stronger growth in quarter two. Growth was 1.2 per cent in quarter three compared with 1.0 per cent in quarter two. The contribution to higher growth in quarter three was mainly driven by a strong net export picture as well as higher inventories. Private consumption and business investment were also resilient. This was offset by continued weakness in residential investment growth.

Japan's GDP growth also showed an upturn in the third quarter. Growth increased by 0.6 per cent compared to a fall of 0.4 per cent in quarter two. The improvement was primarily driven by exports, combined with a fall in the rate of import growth. Positive growth was also recorded in private non-residential investment, private consumption and government consumption. Residential investment continued to record negative growth for the third consecutive quarter.

Growth in the three biggest mainland EU economies – Germany, France and Italy – recorded rebounds in GDP growth after a disappointing quarter two. According to Eurostat's estimate, euro area GDP grew by 0.7 per cent in 2007 quarter three. This is an acceleration compared to growth of 0.3 per cent in the previous quarter.

German GDP growth recorded an increase in growth in quarter three. Growth was 0.7 per cent compared to modest growth of 0.3 per cent in the second quarter. The main driver of growth was domestic demand, partly fuelled by inventories and partly by private consumption. This was offset by a weaker net export picture. Investment grew modestly.

French GDP growth increased in 2007 quarter three, growth was 0.7 per cent compared to growth of 0.3 per cent in quarter two. Exports increased sharply, combined with a decline in the rate of import growth. Household consumption expenditure and Gross Fixed Capital Formation also recorded strong growth.

Italian GDP growth rebounded in quarter three after a poor second quarter. Growth in quarter three was 0.4 per cent compared to 0.1 per cent in quarter two. Growth was mainly driven by investment, particularly capital and construction investment. Private consumption grew modestly. Net trade in contrast subtracted from growth with imports exceeding exports.

Figure 1
Gross Domestic Product
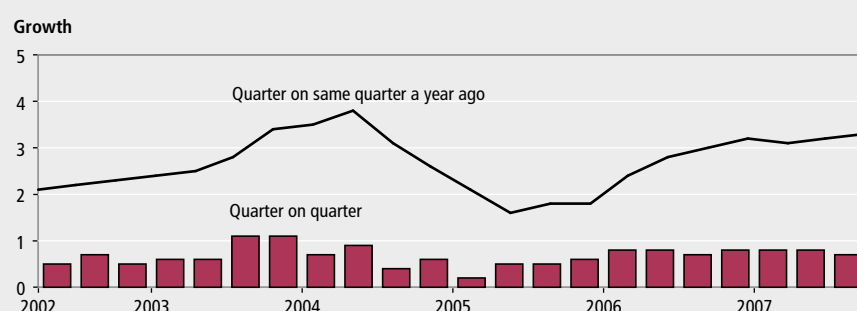
Share prices weaken and pound stabilises

Equity performance recorded a weakening in 2007 quarter three after showing evidence of fairly buoyant growth in 2007 quarter two. The FTSE All-Share index fell by around 3 per cent in quarter three following growth of around 4 per cent in quarter two. The decrease in equity growth can mainly be attributed to concerns regarding a slow-down in the world economy following fears over the US economy particularly in the financial sector, in part connected to the markets risk aversion towards assets associated with the US sub-prime market. Also, it can be part attributed to the recent rise in UK short term interest rates.

In the currency markets, 2007 quarter three saw sterling's average value broadly flat compared to the previous quarter. The pound appreciated against the dollar by 1.7 per cent in 2007 quarter three, similar to the rate in the previous quarter. Against the euro, sterling's value depreciated by 0.2 per cent after depreciating by 1.2 per cent in the previous quarter. Overall, the quarterly effective exchange rate was flat after depreciating by 0.5 per cent in 2007 quarter two (**Figure 2**). In the two months to November, the pound appreciated on average by around 1.2 per cent against the dollar. Against the euro, the pound depreciated by 1.4 per cent. Overall, the quarterly exchange rate fell by around 1.0 per cent.

The recent movements in the exchange rate might be linked to a number of factors. First, exchange rate movements can be related to the perceptions of the relative strengths of the US, the Euro and UK economy. The appreciation of the pound against the dollar in 2007 quarter three may be partly linked to perceptions of stronger UK economic growth, leading to greater inflationary pressures and therefore the prospects of higher interest rates. In the UK interest rates were increased by the Bank of England in May 2007 by 0.25 per cent; rates were increased by a further 0.25 per cent in June 2007 to 5.75 per cent. The trend may begin to decline as the November Inflation Report signalled that the markets had priced in interest rate cuts in 2008. Indeed, the Bank of England reduced interest rates by 25 basis points in December to 5.5 per cent, mainly in response to the effects of the sub-prime crisis in terms of downward risks

to growth and inflation.

In contrast, there have been particular concerns in recent months regarding the relative weakness of US GDP growth, compounded by housing market weakness and the sub-prime crisis. In fact, US interest rates were lowered by a further 25 basis points in December to 4.25 per cent, and this was the third consecutive cut, following on from those in September and October. These interest rate decreases will have made the dollar less appealing to investors compared to other currencies.

Another factor could be the lack of international appetite for US dollar denominated assets, particularly from central banks, who are choosing to spread their currency assets on their balance sheets (for portfolio and risk management purposes) thereby further undermining the value of the dollar.

In contrast in the euro area, the depreciation of the pound against the euro in the third quarter of 2007 may have come in response to prospects of monetary tightening in the euro-zone. Interest rates in the euro-zone were maintained at 4 per cent in December after increasing by 0.25 per cent in June, partly in response to concerns about inflationary pressures. However, compared to US and UK rates, euro-zone interest rates still remain fairly moderate and accommodative.

Services sector drives economic growth

GDP growth in 2007 quarter three was estimated at 0.7 per cent, down from 0.8 per cent in the previous quarter. On an annual basis it was 3.3 per cent, up from 3.2 per cent in the previous quarter.

Construction activity continued to grow strongly in the third quarter of 2007. Construction output is estimated to have

grown by 0.8 per cent, unchanged from growth in the previous quarter. Comparing the quarter on the same quarter a year ago, construction output rose by 3.5 per cent following growth of 3.6 per cent in the previous quarter (**Figure 3**). In terms of external surveys of the construction sector, the CIPS survey signalled strengthening activity in 2007 quarter three with the average headline index at 62.3, up from 59.3 in the previous quarter. Stronger activity was driven by a rise in commercial activity. In November, the headline index fell to 54.3, but still indicative of strong growth. The RICS construction survey for 2007 quarter three reported a stabilisation in construction growth at a high level with the balance at plus 16, unchanged from the previous quarter.

Total output from the production industries recorded unchanged growth in 2007 quarter three after an increase of 0.7 per cent in the previous quarter. On an annual basis it rose by 0.3 per cent, down from 0.5 per cent in the previous quarter. The main driver for the slow-down in production was manufacturing output. Manufacturing output was unchanged in quarter three, after fairly strong growth of 0.8 per cent in the previous quarter. On an annual basis, manufacturing output growth decelerated to 0.4 per cent from 0.9 per cent in the previous quarter (**Figure 4**). Lower production was also partly driven by a large contraction in the output of the mining and quarrying industries (including oil and gas). Output fell by 1.1 per cent following growth of 1.1 per cent in the previous quarter. This was offset by a strengthening in the output of electricity, gas and water supply which increased by 0.8 per cent compared to a contraction of 0.1 per cent in the previous quarter. On an annual basis utilities output was up 0.1 per cent after falling by 0.8 per cent in the previous quarter.

Production growth has generally been

Figure 2
Exchange rates

£ Equals

£/$ (left hand side)

Effective rate (right hand side)

£/euro (left hand side)
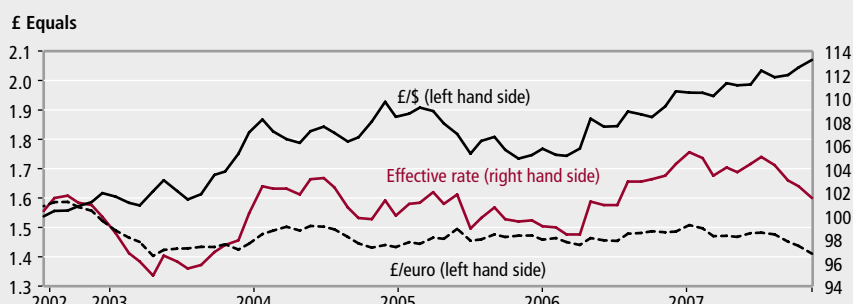
slow since the second quarter of 2006 due to weakness in mining and quarrying and utilities output, offset through most of this period by relatively strong manufacturing output. There was a pick up in production in 2007 quarter two, but this appears not to have been sustained in quarter three due to a decline in the rate of manufacturing output growth. However, manufacturing output has been volatile in recent quarters.

The output of the agriculture, forestry and fishing industries weakened in the latest quarter with output falling by 0.6 per cent after flat growth in the previous quarter.

According to the latest production figures in October, the index for the output of the production industries was 0.1 per cent lower than in the previous three months. Within total production, manufacturing output increased by 0.1 per cent, output of the electricity, gas and water supply industries increased by 0.3 per cent; this was offset by a decrease of 1.7 per cent in the output of the mining and quarrying industries, compared with the previous three months.

External surveys of manufacturing for 2007 quarter three showed a mixed picture (**Figure 5**). In the past, it has not been unusual for the path of business indicators and official data to diverge over the short term. These differences happen partly because the series are not measuring exactly the same thing. External surveys measure the direction rather than the magnitude of a change in output and often inquire into expectations rather than actual activity.

The CIPS average headline index for manufacturing indicated a stable but robust picture in the latest quarter. The headline index was 55.6, up from 54.5 in the previous quarter. In November the headline index was 54.4. The CBI in its 2007 quarter three Industrial Trends survey reported a weak picture with the total orders balance at minus six. According to the latest survey in December, the order books balance eased to plus two from plus eight in November. The BCC in its 2007 quarter three survey reported a mixed but overall a fairly buoyant picture of manufacturing activity. The home sales balance was plus 36 and the home orders balance was plus 26.

Overall the service sector, the largest part of the UK economy, continues to be the main driver of UK economic growth. Growth was 0.8 per cent in 2007 quarter three, unchanged from the previous quarter (**Figure 6**). Growth on an annual basis was 3.9 per cent, up from 3.8 per cent in the previous quarter. Growth was

Figure 3
Construction output
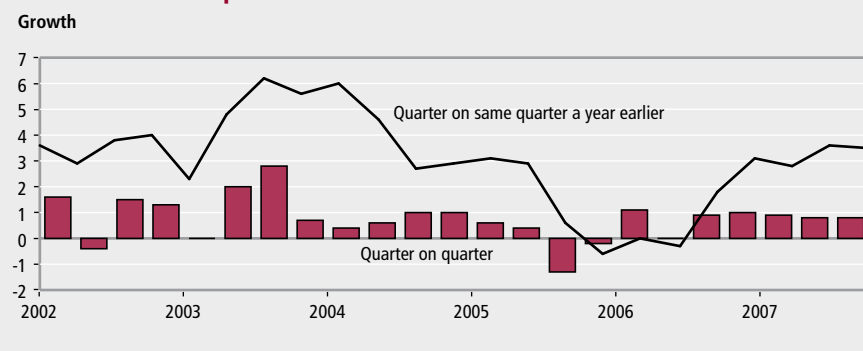
Growth

recorded across all four broad sectors. The main contributor to the growth continued to be the business services and finance sector which grew by 1.3 per cent in the latest quarter, down slightly from growth of 1.4 per cent in the previous quarter. There was also strong growth in the distribution, hotels and catering sector of 0.8 per cent, similar to the growth in the previous quarter. The transport, storage and communication sector recorded growth of 0.5 per cent, down from 1 per cent in the second quarter. There was a slight increase in the growth of the government and other services sector compared with the previous quarter. Growth was 0.3 per cent in quarter three compared to 0.1 per cent in quarter

two.

The external surveys on services continued to show a fairly robust picture in line with the official picture. The CIPS average headline index in 2007 quarter three was 57.1, down slightly from 57.4 in the previous quarter but above the long-run average. Growth continued to be led by new orders. In November the headline index grew at a slower rate with the balance at 51.9. It should be noted that the CIPS survey has a narrow coverage of the distribution and government sectors.

The CBI and BCC also reported a fairly healthy picture of service sector activity (**Figure 7**). The CBI service sector survey for November reported modest growth

Figure 4
Manufacturing output

Growth
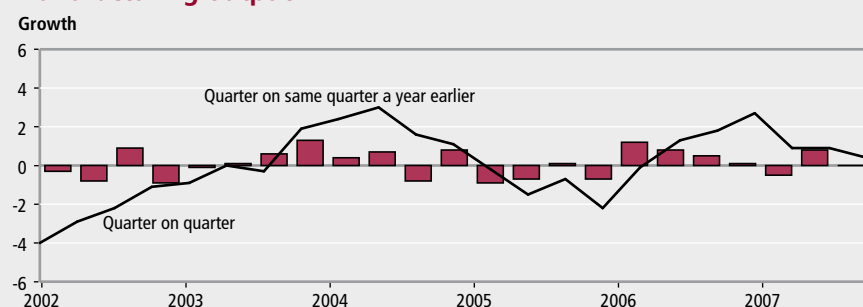
Figure 5
External manufacturing indicators
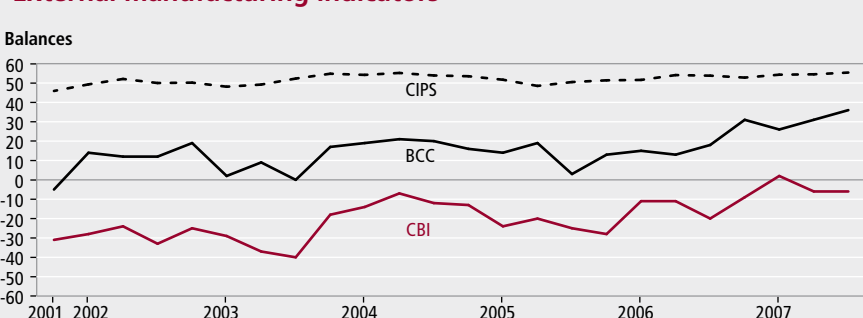
Balances

in business volumes for the business and professional services sector and the consumer service sector. The consumer services volume balance was at plus 15, unchanged from the previous quarter. For business and professional services, the balance was at plus 19, down from plus 31 in the previous quarter. The BCC survey for 2007 quarter three survey reported a weakening picture of service sector activity, but overall balances for home orders and sales remained positive at plus 23 and plus 29 respectively.

The UK sectoral account shows the UK corporate sector once again as being a big net lender in 2007 quarter three. However, the level of net lending fell substantially in quarter three compared to quarter two. Despite the surplus, the overall debt level remains high due to the heavy borrowing between 1997 and 2001. The household sector remains a net borrower as income growth proved insufficient to finance total outlays. Households debt levels continue be relatively high, although the quarterly interest payments on the loans are still being kept down by low interest rates as a proportion of income, although they have steadily increased in recent quarters due to rises in interest rates. The level of central government borrowing eased modestly in 2007 quarter three from the previous quarter, but still remains high due to higher rises in cash expenditure exceeding tax receipts. The current account of the UK balance of payments continues to be in deficit.

EXPENDITURE

Consumers' spending buoyant

Household consumption expenditure growth accelerated in 2007 quarter three at a strong rate of 1.1 per cent. This follows growth of 0.7 per cent in the previous quarter. Growth compared with the same quarter a year ago was 3.6 per cent, up from 2.7 in quarter two (**Figure 8**). Growth was recorded across most sectors with the acceleration in household expenditure driven mainly by expenditure on durable and non-durable goods.

The impact on the UK economy from the US sub-prime housing crisis and the subsequent credit crunch is still uncertain. Early indications suggest that the impact in the UK, in terms of consumer expenditure has not had much effect. However, in the future there may be some impact on

Figure 6
Services output

mortgage borrowing, possibly as a result of tighter lending criteria adopted by some banks and building societies, particularly towards first time buyers and those considered higher risk. There may also be an impact in the form of higher interest rates charged by banks for customers who have borrowed on variable interest rate mortgages in the short term, and in the longer term there may be an impact on those who took out fixed rate mortgages. However, the recent decrease in UK interest rates may reverse some of this trend. Some lenders have already passed on the cut to borrowers with variable rate mortgages.

One key indicator of household expenditure is retail sales. Retail sales growth strengthened in 2007 quarter three

Figure 7
External services

from quarter two. Retail sales grew by 1.6 per cent in quarter three, an acceleration from growth of 1.4 per cent in the previous quarter. However, the underlying picture suggests that the increase in retail sales has been generated in many cases by heavy discounting in shops and early sales which are reflected in the price deflator (i.e. shop prices) which fell on average by around 1.2 per cent in the latest quarter compared to relatively modest growth of 0.5 per cent on average in the previous quarter.

Retail sales figures are published on a monthly basis and the latest available figures for November signalled a slight slowing compared to October but still suggested relatively strong growth (**Figure 9**). In the three months to

Figure 8
Household demand
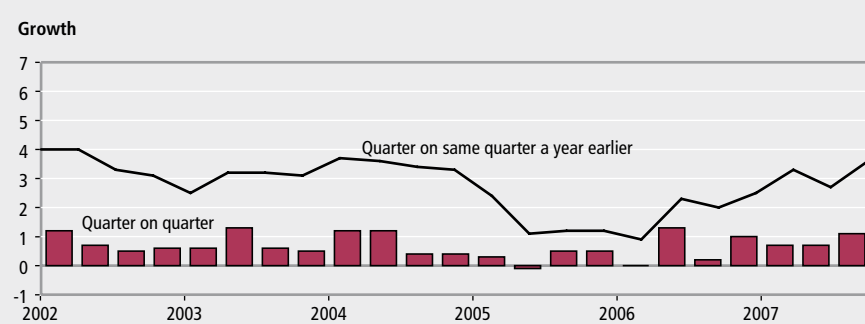
November the volume of retail sales increased by 1.1 per cent compared to a 1.3 per cent increase in the three months to October. On an annual basis in November, the latest three months growth compared to the same three months a year ago recorded growth of 4.8 per cent, slightly down from 4.9 per cent growth in October. This underlying positive growth may suggest that in the fourth quarter past interest rate rises have not yet had an impact on consumers and their spending. However as mentioned earlier, discounting is continuing to support retail sales growth – the implied price deflator continued to record negative growth.

Retail sales can be disaggregated into 'predominantly food' and 'predominantly non-food' sectors. In three months to November the 'predominantly non-food' sector recorded growth of 0.8 per cent, while this is still showing growth it is at a lower rate than in recent months – in the three months to August this sector grew by 2.1 per cent. Growth in this sector was driven by the 'non-store retailing and repair' sector which grew by 3.8 per cent, followed by the 'textile, clothing and footwear stores' sector which grew by 1.5 per cent. The 'household goods' store sector in contrast contracted by 0.3 per cent. The 'predominantly food' sector grew by 1 per cent in the three months to November, down marginally from 1.1 per cent growth in the three months to October.

External surveys for retail sales presented a modest picture of growth. The CBI monthly Distributive Trades survey for December reported the slowest high street growth for over a year in early December with the balance at plus eight. The BRC reported an increase of 1.2 per cent in retail sales on a like-for-like basis in November, up from 1 per cent in the previous month (**Figure 10**).

Another indicator of household consumption expenditure is borrowing. Household consumption has risen faster than disposable income in recent years as the household sector has become a considerable net borrower and therefore accumulated high debt levels. Bank of England data on stocks of household debt outstanding to banks and building societies shows household debt at unprecedented levels relative to disposable income.

There are two channels of borrowing available to households: i) secured lending, usually on homes; and ii) unsecured lending, for example, on credit cards. On a general level, an increase in the interest rates increasing debt servicing costs may discourage borrowing and in the process displace consumer expenditure on certain goods. However, various indicators on lending and borrowing in quarter three indicate otherwise and tend to support the acceleration in household expenditure.

The financial account shows that the general movement from net lending to borrowing since 1992 has primarily been facilitated by increases in both secured and unsecured lending. In 2007 quarter three there was strengthening in both, with lending continuing to be driven by loans on secured dwellings. In the latest quarter, borrowing secured on dwellings rose to around £33 billion from around £27 billion in the previous quarter. Unsecured lending also rose, to around £4.3 billion, up from around £2.4 billion in 2007 quarter two.

Household expenditure can be linked to household equity withdrawal (HEW). Both Nationwide and Halifax report an easing in growth in house prices in quarter three compared to quarter two; however, despite this slowdown, house price growth is still holding up fairly well and may have provided a boost to expenditure. According to the Nationwide, house price growth in quarter three was 1.6 per cent compared to 1.9 per cent in the previous quarter. Halifax report house price growth of 0.9 per cent in quarter three from 2.3 per cent in quarter two.

An alternative measure of expenditure showed a relatively strong picture. M4 (a broad money aggregate of UK money supply) rose to £52.8 billion in quarter three from £50.3 billion in quarter two. M4 lending (including cash and bank deposits) rose sharply to £76.9 billion from £52.6 billion in the previous quarter. This data appears to show a delayed impact of the credit crisis as banks stop holding wholesale deposits whilst the retail banking sector seems to be less affected.

The strength in consumer spending may also be explained by the fall in the savings ratio. The household savings ratio in quarter three was 3.4 per cent, down from 4.0 per cent in the previous quarter.

Finally, underlying fundamentals such as the prevalence of a relatively healthy labour market, together with a confident outlook on the economy by consumers, may have underpinned buoyant consumption growth. Consumers may also have resorted to current spending in anticipation of higher borrowing costs in the future.

Figure 9
Retail sales

Growth
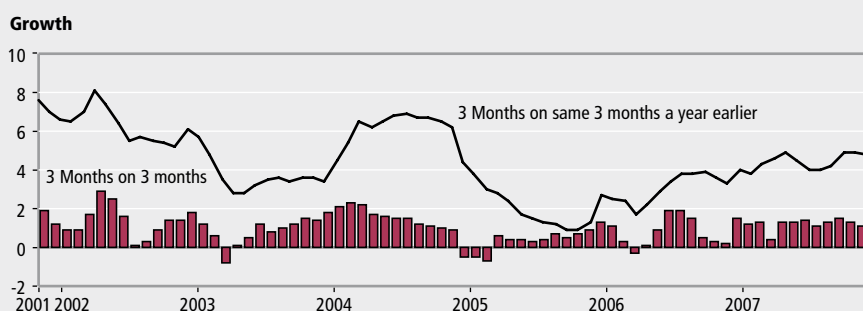
Figure 10
External retailing

Balances
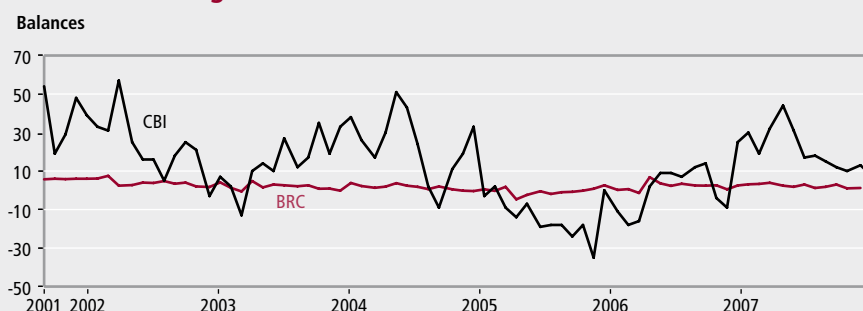
BUSINESS DEMAND

Business investment accelerated

Total investment rose by 2.4 per cent in quarter three compared to a fall of 0.8 per cent in the previous quarter. On an annual basis, total investment grew by 6 per cent, a slowdown from 6.4 per cent in the previous quarter. The strengthening in total investment was primarily driven by government investment and dwellings (**Figure 11**).

Business investment grew relatively strongly throughout 2006. In 2007 quarter one business investment weakened but then recovered into quarter two recording fairly modest growth. In quarter three, growth accelerated to 2 per cent from 0.5 per cent in quarter two. On an annual basis, business investment grew by 6.6 per cent, a slowdown from 7.8 per cent growth recorded in the previous quarter.

Evidence on investment intentions from the latest BCC and CBI surveys showed a mixed picture. According to the latest quarterly BCC survey, the balance of manufacturing firms planning to increase investment in plant and machinery rose five points to plus 33 and in services firms fell two points to plus 17 in 2007 quarter three. The CBI Industrial Survey for October reported a subdued investment picture, with the investment balance of plant and machinery weakening to minus 14 from minus six in the previous quarter.

According to the sectoral accounts, the private non-financial corporate sector was a net lender in 2007 quarter three, lending £1.08 billion, down from £5.3 billion in the previous quarter. This is mainly due to lower distributed income of corporations. Corporate sector debt levels remain high despite the sector surplus of recent years. The financial balance sheet shows the corporate sector had net liabilities of around £1.9 billion.

GOVERNMENT DEMAND

Government expenditure moderates

Government final consumption expenditure continued to grow at a fairly modest pace in quarter three. Growth in quarter three was 0.3 per cent, a deceleration from growth of 0.5 per cent in quarter two. Growth quarter on the same quarter a year earlier was 1.9 per cent, down slightly from the 2 per cent growth recorded for quarter two (**Figure 12**).

Figure 11
Total fixed investment

Growth
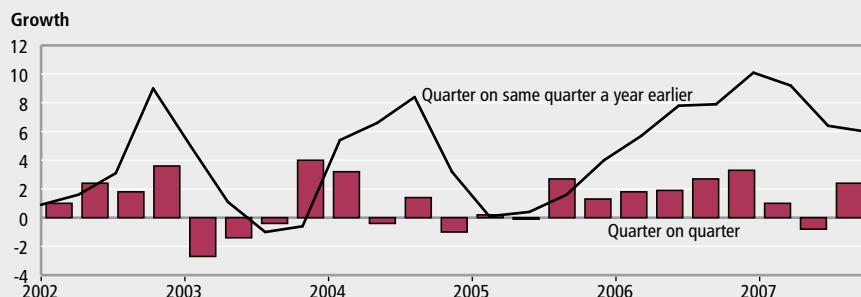
Figure 12
Government spending

Growth
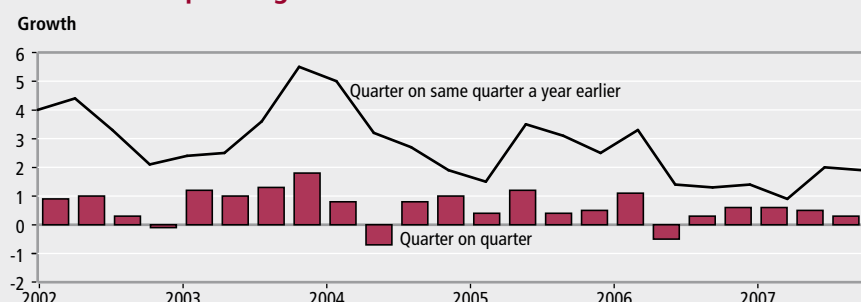
Public sector finances deteriorate

The latest figures on the public sector finances reported deterioration in the current financial year to November 2007 compared with the last financial year. It showed a higher current budget deficit and a higher level of net borrowing. Overall, the government continued to operate a financial deficit, with government expenditure continuing to exceed revenues, partly to fund capital spending. In the financial year April to November 2007/08, the current budget deficit was £23.1 billion; this compares with a deficit of £14.6 billion in the financial year to April to November 2006/07. In the financial year April to November 2007/08, net borrowing was £36.2 billion; this compares with net borrowing of £26 billion in the financial year April to November 2006/07. Whilst there was an increase in total current receipts, this was exceeded by total current expenditure, particularly on capital projects, leading to a higher current budget deficit and higher net borrowing.

The financial account shows that the issuance of both sterling treasury bills and government securities has financed this net borrowing. The latest quarter saw the outstanding amount of government

securities at £450 billion and of Treasury bills at £16.1 billion.

Since net borrowing became positive in 2002, following the current budget moving from surplus into deficit, net debt as a proportion of annual GDP has risen steadily. Public sector net debt in November 2007 was 36.7 per cent of GDP, up from 36.4 in November 2006. In the financial year 2006/07, net debt as a percentage of GDP was 35.1 per cent.

TRADE AND THE BALANCE OF PAYMENTS

Current account deficit widens; goods deficit widens

The publication of the latest quarterly Balance of Payments shows that the current account deficit widened in 2007 quarter three to £20 billion, from a revised deficit of £13.7 billion in the previous quarter (**Figure 13**). As a proportion of GDP, the deficit rose to 5.7 per cent of GDP from 4 per cent in 2007 quarter two. The widening in the current account deficit in 2007 quarter three was due to a higher deficit on income and on trade in goods, partially offset by a higher surplus on trade in services. The deficit on income increased to £3.8 billion and the

Figure 13
Balance of payments
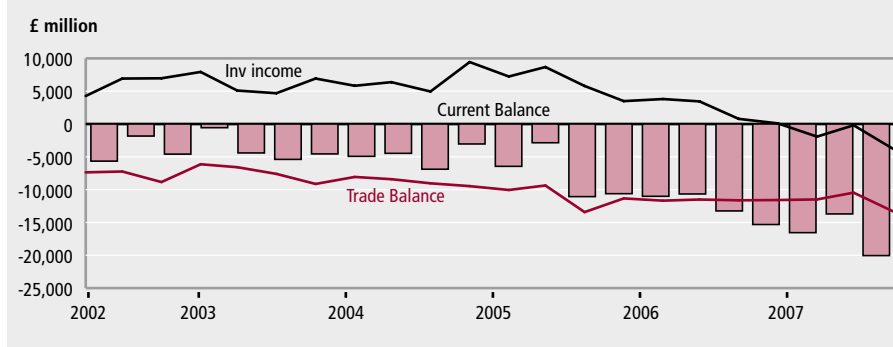
£ million

deficit on trade in goods widened to £22.6 billion. The surplus in trade in services increased to £9.3 billion. The deficit in current transfers was little changed at £3 billion. The increase in the income deficit was driven by a rise in earnings on other investment abroad, which outweighed a fall in earnings on direct investment abroad.

The run of current account deficits since 1998 reflects the sustained deterioration in the trade balance. The UK has traditionally run a surplus on the trade in services, complemented by a surplus in investment income, but this has been more than offset by the growing deficit in trade in goods partly due to the UK's appetite for cheaper imports.

Data for 2007 quarter three recorded a continuation of the large trade deficit in goods. Total exports of goods rose but imports of goods increased by a higher margin resulting in a widening of the deficit. The goods trade deficit was £22.6 billion in quarter three, up from £19.6 billion in quarter two. In terms of growth, exports of goods rose by 2.8 per cent whilst imports of goods rose by 6 per cent over the quarter. Services exports rose by 0.6 per cent and services imports also rose by 0.6 per cent. Over the quarter, total exports increased by 2 per cent whilst total imports increased by 4.7 per cent.

According to the latest trade figures for October, the UK's deficit on trade in goods and services is estimated to have narrowed. The total trade balance was in deficit by £4.1 billion, down from a deficit of £4.8 billion in September. The narrowing deficit was due mainly to a lower deficit in trade in goods with EU countries which fell to £2.7 billion from £3.3 billion in September. There was a slight fall in the deficit in trade in goods to Non-EU countries to £4.4 billion from £4.6 billion in September. In growth terms, total exports rose by 1.2 per cent whilst total

imports fell by 2.7 per cent. In the three months ended October, the deficit on trade in goods and services widened to £13.1 billion, from an £11.9 billion deficit in the previous three months. In terms of growth, total exports grew by 2 per cent, whilst total imports rose by 2.9 per cent.

However, these figures are distorted by volatility in VAT Missing Trader Intra –Community (MTIC) Fraud and therefore need to be treated with caution. According to the latest figures, the level of trade in goods excluding trade associated with MTIC fraud is estimated to be to £0.1 billion in October, unchanged from the previous month, and by £0.2 billion in the third quarter of 2007.

Overall, the persistence of the current account deficit has led to the deterioration in the UK's International Investment Position (IIP) with the rest of the world. The net asset/liability position was negative to the tune of £318.8 billion at the end of the third quarter of 2007 compared with net external liabilities of £337.6 billion at the end of the previous quarter. UK assets abroad increased by £225.8 billion from the end of the second quarter to a level of £6,190.3 billion at the end of the third quarter. UK liabilities increased by £207

billion over the same period to a level of £6,509.1 billion. The rise in the level of both UK assets and UK liabilities in the third quarter reflects net investment.

External surveys on exports reported a less positive picture for exports compared to earlier in the year. The BCC reported that the export sales net balance fell by one point to plus 29 and the export orders balance remained unchanged at plus 26 in 2007 quarter three. The latest CBI survey reported a balance of plus two in December compared to minus four in November.

LABOUR MARKET

Labour market activity buoyant

The labour market in the latest reference period showed a benign picture continuing the trend of high levels of employment and low levels of unemployment seen throughout 2006 and in 2007. The robust labour market picture continues to be a reflection of fairly strong demand conditions in the UK economy.

The latest figure from the Labour Force Survey (LFS) pertains to the three-month period up to October 2007. The number of people in employment and the employment rate rose. The number of unemployed people and the unemployment rate fell. The claimant count fell. The inactivity rate and the number of inactive people of working age have both fallen. The number of vacancies rose. In terms of average earnings, including and excluding bonuses, earnings growth decreased. Overall average earnings remain subdued with weak real wage growth.

Looking at a detailed level, the increase in the employment level was mainly driven by employees and full-time employment. The current working age employment rate

Figure 14
Employment and unemployment
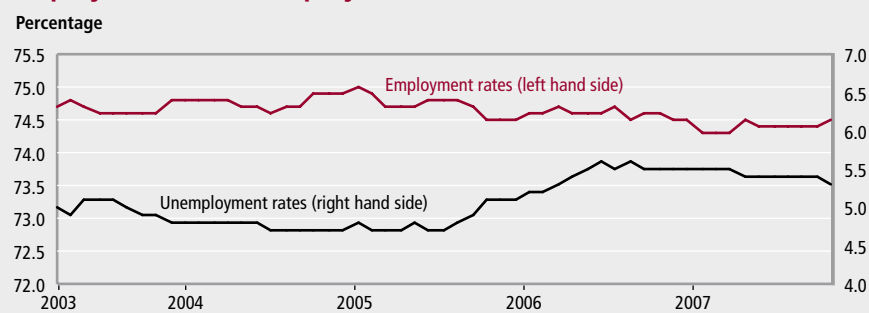
Percentage

was 74.5 per cent in the three months to October, up 0.1 percentage point from the three months to July 2007 but unchanged from a year earlier. The number of people in employment rose by 114,000 in the three months to October compared to the three months to July, to an employment level of 29.29 million in the three months to October. The unemployment rate was 5.3 per cent in the three months to October, down 0.1 percentage point from the three months to July 2007 and down 0.2 percentage points from a year earlier (**Figure 14**). The number of unemployed people decreased by 15,000 in the three months to October and was down 59,000 from a year earlier, leaving the current level of unemployment at 1.64 million.

According to the LFS, in the period August to October 2007, the number of people in employment rose by 114,000. The increase was led by a rise in employees of 110,000 and a 20,000 rise in self-employment. In terms of full- and part-time workers, the number of people in full-time employment rose by 103,000 while the number of people in part-time employment increased by 10,000.

Workforce jobs increases

According to employer surveys, there was an increase of 63,000 jobs in the three months to September 2007. The largest quarterly contribution to the increase came from finance and business services (up 57,000), followed by manufacturing (up 5,000), and other services (up 4,000). This was offset by small decreases across a number of sectors with the largest decrease in transport and communication (down 3,000) followed by construction and distribution, hotels and restaurants (down 1,000 respectively). Over the year, total workforce jobs increased by 287,000. Of the total, the largest contribution to the increase over the year came from finance and business services (up 201,000) followed by distribution, hotels and restaurants (up 75,000) and construction (up 40,000). The manufacturing sector, in contrast, lost the largest number of jobs on the year (down 37,000), followed by transport and communication (down 19,000).

Claimant count level continues to fall

The claimant count measures the number of people claiming the Jobseeker's Allowance. The latest figures for November showed the claimant count level at 813,000 down 11,100 on the previous month and down 134,200 on a year earlier. The claimant count rate in November 2007 was 2.5 per cent, unchanged from the previous month but down 0.4 percentage points from a year earlier.

Vacancies rise

The number of vacancies created in the UK continued to show a healthy demand position for the economy. There were 680,700 job vacancies in the three months to November 2007, up 14,500 from the previous three months and up 81,100 from the same period a year earlier.

Inactivity level falls

The working age inactivity rate was 21.2 per cent in the three months to October, down 0.1 percentage point on the three months to July 2007 but up 0.2 percentage points from a year earlier. In level terms, the number of economically inactive people of working age was down 16,000 over the quarter, reaching a level of 7.96 million in the three months to October 2007. In terms of level changes over the quarter, the largest level fall in inactivity was recorded for those categorised as 'looking after family/home' (down 40,000), followed by the 'long-term sick' category (down 15,000) These were offset with the largest increase in the 'student' category (up 26,000), followed by the 'temp-sick' (up 11,000).

Average earnings fall

Growth in whole economy average earnings was lower in the three months to October than in the three months to September and remains relatively subdued. Average earnings including bonuses increased by 4 per cent in the three months to October, down 0.1 percentage point from the previous month. Average earnings excluding bonuses rose by 3.6 per cent, down 0.1 percentage point from the previous month. In terms of the public and private sector split, the gap in average earning (excluding bonuses) narrowed in

October. Public sector wage growth was 3.4 per cent, up 0.2 percentage points from September. Private sector wages, in contrast, fell by 0.1 percentage point to 3.7 per cent in October.

Overall, the numbers still point to a fairly buoyant labour market, with employment at high levels and unemployment at a stable level. This is consistent with higher workforce participation rates, underpinned by robust GDP growth. Average earnings show stable but fairly modest growth, consistent with increased supply in the labour force.

Producer output prices buoyant; input prices rise

Industrial input and output prices are an indication of inflationary pressures in the economy. During quarter three, with the exception of a slight fall in August, output prices exhibited further signs of an acceleration of growth from quarter two 2007 and therefore provided signs of continued inflationary pressures. Input prices also accelerated in the third quarter. This suggests that firms were attempting to maintain their profit margins by passing on the higher costs of inputs to customers after facing a profit squeeze earlier in 2007.

Input prices on average rose by around 2.6 per cent in 2007 quarter three. This compares with 1 per cent in 2007 quarter two. The core input price index, excluding food, beverages, tobacco and petroleum, rose by an average of 2.2 per cent in 2007 quarter three (12 month non-seasonally adjusted growth), a deceleration from growth of 2.9 per cent in the previous quarter. In November, input prices grew by 10.3 per cent, up from 8.5 per cent in October; the highest rate of annual input price inflation since July 2006. The largest contributions to the increase came from crude oil and home food materials which increased by 46.6 and 20.1 per cent respectively in the 12 months to November. The core input price inflation rose by 1.8 per cent in November compared to 2.8 per cent in October.

Output prices grew on average by 2.6 per cent in 2007 quarter three, a slight strengthening from growth of 2.4 per cent in the previous quarter. The underlying picture also suggests inflationary pressures. On the core measure which excludes food, beverages, tobacco and petroleum, producer output prices rose on average by 2.3 per

cent in 2007 quarter three, unchanged from quarter two. In November, output prices increased further to 4.5 per cent from 3.9 per cent in October, the highest annual rate of annual rate of output inflation since August 1991. The largest contributions to the increase came from petroleum products and food prices, which increased by 18.5 per cent and 6.6 per cent respectively. The core output price index rose by 2.2 per cent compared to 2.3 per cent in September.

Consumer prices unchanged but still above target

Growth in the consumer prices index (CPI) – the Government's target measure of inflation – was 2.1 per cent in November, unchanged from October. This is lower than the peak in March when inflation reached 3.1 per cent but above Government's 2 per cent inflation target (**Figure 15**)

The main upward contribution came from changes in the price of road fuels. Average petrol prices rose by 3.5 pence per litre in November to stand at over £1 per litre; this compares with a fall of 0.4 pence per litre last year. Diesel prices also rose, by five pence per litre compared with a fall of 0.4 pence last November.

Figure 15
Inflation

Percentage
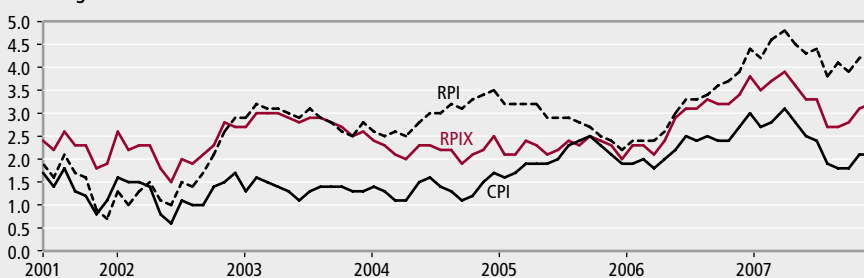
There were also small upward effects from: heating oil which rose in price this year, reflecting movements in crude oil prices, but fell a year ago; and financial services, where the cost of exchanging foreign currency fell a year ago.

The main downward contribution to change in the CPI annual rate came from gas and electricity bills, which were little changed this year compared with price rises a year ago when there was continued phasing in of tariff increases.

Smaller downward effects came from: air travel, with fares on European routes falling by more this November than a year ago; vehicle maintenance and repairs; recreation and culture. The main downward

contributions came from audio-visual equipment and books, and restaurants and hotels, mainly due to prices in staff canteens rising by less than last year.

RPI inflation rose to 4.3 per cent in November, up from 4.2 per cent in October. The main factors influencing the RPI were similar to those affecting the CPI, though there were additional upward contributions from food and motor vehicle purchase costs and a partially offsetting downward contribution from vehicle insurance. RPIX inflation – the all items RPI excluding mortgage interest payments – was 3.2 per cent in November, up from 3.1 per cent in October.

Independent forecasts

December 2007

UK forecasts

The tables below supplement the Economic Review by providing a forward-looking view of the UK economy. The tables shows the average and range of independent forecasts for 2007 and 2008 and are extracted from HM Treasury's Forecasts for the UK Economy.

2007

	Average	Lowest	Highest
GDP growth (per cent)	3.0	2.5	3.3
Inflation rate (Q4, per cent)			
CPI	2.0	1.2	2.3
RPI	4.0	3.5	4.4
Claimant unemployment (Q4, million)	0.85	0.81	1.10
Current account (£ billion)	−43.5	−53.2	−38.0
Public Sector Net Borrowing (2007–08, £ billion)	36.6	30.5	40.9

2008

	Average	Lowest	Highest
GDP growth (per cent)	1.9	−0.1	3.0
Inflation rate (Q4, per cent)			
CPI	2.1	1.4	3.2
RPI	2.5	1.5	3.8
Claimant unemployment (Q4, million)	0.92	0.74	1.23
Current account (£ billion)	−45.8	−59.1	−33.0
Public Sector Net Borrowing (2008–09, £ billion)	37.0	22.8	50.9`

Notes

Forecast for the UK economy gives more detailed forecasts, and is published monthly by HM Treasury. It is available on the Treasury's website at: www.hm-treasury.gov.uk/economic_data_and_tools/data_index.cfm

Selected world forecasts

The tables below supplement the Economic Review by providing a forward-looking view of the world economy. The tables show forecasts for a range of economic indicators taken from Economic Outlook (preliminary edition), published by OECD (Organisation for Economic Co-operation and Development).

2007

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	2.2	1.9	2.6	2.7
Consumer price (percentage change from previous year)	2.8	−0.0	2.1	4.5
Unemployment rate (per cent of the labour force)	4.6	3.8	6.8	5.4
Current account (as a percentage of GDP)	−5.6	4.7	0.2	−1.4
Fiscal balance (as a percentage of GDP)	−2.8	−3.4	−0.7	−1.6

2008

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	2.0	1.6	1.9	2.3
Consumer price (percentage change from previous year)	2.7	0.3	2.5	4.2
Unemployment rate (per cent of the labour force)	5.0	3.7	6.4	5.4
Current account (as a percentage of GDP)	−5.4	4.8	−0.1	−1.4
Fiscal balance (as a percentage of GDP)	−3.4	−3.8	−0.7	−2.0

Notes

The OECD *Economic Outlook* is published bi-annually. Further information about this publication can be found at www.oecd.org/eco/Economic_Outlook

Key indicators

The data in this table support the Economic review by providing some of the latest estimates of Key indicators.

Seasonally adjusted unless otherwise stated

	Source CDID	2005	2006	2007 Q1	2007 Q2	2007 Q3	2007 Sep	2007 Oct	2007 Nov
GDP growth - chained volume measures (CVM)									
Gross domestic product at market prices	ABMI	1.8	2.9	0.8	0.8	0.7	..	..	..
Output growth - chained volume measures (CVM)									
Gross value added (GVA) at basic prices	ABMM	1.9	3.0	0.8	0.8	0.7	..	..	..
Industrial production	CKYW	−2.0	0.1	−0.1	0.7	0.0	−0.5	0.5	..
Manufacturing	CKYY	−1.2	1.5	−0.6	0.8	0.0	−0.7	0.3	..
Construction	GDQB	1.5	1.0	0.9	0.7	0.8	..	..	..
Services	GDQS	2.9	3.6	1.1	0.8	0.8	..	..	..
Oil and gas extraction	CKZO	−10.5	−9.3	1.5	0.8	−1.9	0.9	3.4	..
Electricity, gas and water supply	CKYZ	−0.4	−2.5	1.4	−0.1	0.8	0.7	-0.1	..
Business services and finance	GDQN	4.4	5.4	1.0	1.3	1.3	..	..	..
Household demand									
Retail sales volume growth	EAPS	1.9	3.1	0.3	1.4	1.5	0.4	0.0	0.4
Household final consumption expenditure growth (CVM)	ABJR	1.5	1.9	0.7	0.7	1.1	..	..	..
GB new registrations of cars (thousands)[1]	BCGT	2,444	2,340	678	573	671	419	168	..
Labour market[2,3]									
Employment: 16 and over (thousands)	MGRZ	28,707	28,947	29,053	29,153	29,223	29,291	..	..
Employment rate: working age (%)	MGSU	74.7	74.6	74.3	74.4	74.4	74.5	..	..
Workforce jobs (thousands)	DYDC	31,040	31,294	31,431	31,536	31,599	..	..	..
Total actual weekly hours of work: all workers (millions)	YBUS	918.6	923.7	929.5	937.6	937.9	940.0	..	..
Unemployment: 16 and over (thousands)	MGSC	1,429	1,660	1,705	1,661	1,667	1,640	..	..
Unemployment rate: 16 and over (%)	MGSX	4.7	5.4	5.5	5.4	5.4	5.3	..	..
Claimant count (thousands)	BCJD	861.7	944.7	916.3	877.1	846.8	834.7	824.1	813.0
Economically active: 16 and over (thousands)	MGSF	30,135	30,607	30,759	30,814	30,890	30,931	..	..
Economic activity rate: working age (%)	MGSO	78.5	78.9	78.8	78.8	78.8	78.8	..	..
Economically inactive: working age (thousands)	YBSN	7,939	7,851	7,955	7,965	7,973	7,958	..	..
Economic inactivity rate: working age (%)	YBTL	21.5	21.1	21.2	21.2	21.2	21.2	..	..
Vacancies (thousands)	AP2Y	616.8	594.7	636.8	647.5	669.2	669.2	672.4	680.7
Redundancies (thousands)	BEAO	126	145	145	120	134	132	..	..
Productivity and earnings annual growth									
GB average earnings (including bonuses)[3]	LNNC	..	..	4.4	3.4	4.1	4.1	4.0	..
GB average earnings (excluding bonuses)[3]	JQDY	..	..	3.6	3.4	3.7	3.7	3.6	..
Whole economy productivity (output per worker)	A4YN	..	..	2.7	2.5	2.6	..	..	..
Manufacturing productivity (output per job)	LOUV	..	..	..	..	..	2.8	2.4	..
Unit wage costs: whole economy	LOJE	..	..	2.4	1.4	1.5	..	..	..
Unit wage costs: manufacturing	LOJF	..	..	..	..	..	0.3	0.0	..
Business demand									
Business investment growth (CVM)	NPEL	15.7	−4.7	−0.5	0.5	2.0	..	..	..
Government demand									
Government final consumption expenditure growth	NMRY	2.7	1.9	0.6	0.5	0.3	..	..	..
Prices (12-monthly percentage change – except oil prices)									
Consumer prices index[1]	D7G7	2.1	2.3	2.9	2.6	1.8	1.8	2.1	2.1
Retail prices index[1]	CZBH	2.8	3.2	4.5	4.4	3.9	3.9	4.2	4.3
Retail prices index (excluding mortgage interest payments)	CDKQ	2.3	2.9	3.7	3.4	2.7	2.8	3.1	3.2
Producer output prices (excluding FBTP)[4]	EUAA	2.1	2.3	2.6	2.2	2.3	2.2	2.3	2.2
Producer input prices	EUAB	11.6	9.7	−0.8	0.9	2.9	7.2	9.0	10.2
Oil price: sterling (£ per barrel)	ETXR	30.36	35.93	29.95	34.05	36.93	38.09	40.38	44.58
Oil price: dollars ($ per barrel)	ETXQ	55.05	66.11	58.53	67.64	74.67	76.92	82.60	92.30

| | | | | | | | | Seasonally adjusted unless otherwise stated |
	Source CDID	2005	2006	2007 Q1	2007 Q2	2007 Q3	2007 Sep	2007 Oct	2007 Nov
Financial markets									
Sterling ERI (January 2005=100)	BK67	100.4	101.2	104.6	104.1	104.1	103.0	102.5	101.5
Average exchange rate /US$	AUSS	1.8197	1.8429	1.9546	1.9870	2.0211	2.0185	2.0446	2.0701
Average exchange rate /Euro	THAP	1.4629	1.4670	1.4916	1.4732	1.4705	1.4515	1.4370	1.4106
3-month inter-bank rate	HSAJ	4.57	5.26	5.56	5.93	6.18	6.18	6.17	6.53
Selected retail banks: base rate	ZCMG						5.75	5.75	5.75
3-month interest rate on US Treasury bills	LUST	3.92	4.89	4.91	4.68	3.62	3.62	3.84	2.92
Trade and the balance of payments									
UK balance on trade in goods (£m)	BOKI	−68,789	−77,399	−20,448	−19,573	−22,637	−7,957	−7,115	..
Exports of services (£m)	IKBB	115,182	127,139	33,672	34,153	34,436	11,403	11,395	..
Non-EU balance on trade in goods (£m)	LGDT	−31,912	−45,468	−11,401	−9,933	−12,994	−4,617	−4,416	..
Non-EU exports of goods (excl oil & erratics)[5]	SHDJ	119.8	118.0	115.3	115.2	117.4	114.3	114.3	..
Non-EU imports of goods (excl oil & erratics)[5]	SHED	116.8	124.4	126.7	128.5	134.5	133.3	135.7	..
Non-EU import and price index (excl oil)[5]	LKWQ	101.2	103.9	104.6	104.4	103.4	103.7	103.7	..
Non-EU export and price index (excl oil)[5]	LKVX	100.1	101.5	101.9	101.9	102.2	103.6	103.4	..
Monetary conditions/government finances									
Narrow money: notes and coin (year on year percentage growth)[6]	VQUU	3.1	5.0	4.1	4.8	5.4	5.4	5.4	..
M4 (year on year percentage growth)	VQJW	11.3	13.0	12.6	12.9	12.7	12.7	11.8	..
Public sector net borrowing (£m)	−ANNX	41,804	29,251	−2,141	17,208	8,173	6,268	−379	11,208
Net lending to consumers (£m)	RLMH	19,701	13,081	2,471	2,495	3,519	1,322	1,439	..

External indicators – non-ONS statistics

		2007 May	2007 Jun	2007 Jul	2007 Aug	2007 Sep	2007 Oct	2007 Nov	2007 Dec
Activity and expectations									
CBI output expectations balance	ETCU	18	25	10	13	17	10	9	3
CBI optimism balance	ETBV			−2			−13		
CBI price expectations balance	ETDQ	26	18	16	17	19	15	22	18

Notes:

1 Not seasonally adjusted.
2 Annual data are for April except for workforce jobs (June), claimant count (average of the twelve months) and vacancies (average of the four quarters).
3 Monthly data for vacancies and average earnings are averages of the three months ending in the month shown. Monthly data for all other series except claimant count are averages of the three months centred on the month shown.
4 FBTP: food, beverages, tobacco and petroleum.
5 Volumes, 2003 = 100.
6 Replacement for series M0 which has ceased publication.

For further explanatory notes, see Notes to tables on page 61.

FEATURE

Keith Brook
Department for Business, Enterprise and Regulatory Reform

Developments in measuring the UK service industries, 1990 to 2006

SUMMARY

This article reviews recent developments in the measurement and publication of service sector statistics for the UK, taking into account the recommendations of an interdepartmental review undertaken in 1995, which was chaired by the former Department of Trade and Industry. In recent years, UK service industries have seen considerable growth and now account for nearly 75 per cent of total UK output. Changes are still continuing within the service industries, and in recent years there has been a polarisation between knowledge-based and labour-intensive industries.

The article examines the progress made on the measurement of turnover, gross value added, jobs and international trade within the service sector industries, and also considers where improvements are still needed. Further articles will examine business services in more detail, the relationship between manufacturing and services and performance measures such as productivity, profitability and investment, together with labour market characteristics.

For a number of years, the developed economies of the world have generally seen a steady growth in service sector output and jobs and a corresponding drop in the share of manufacturing output. This has resulted in a diverse range of service activities through the emergence of new industries such as IT and leisure services. A service industry has in fact existed for many years, with the 1861 Census recording that 25 per cent of those occupied were in professional, domestic and commercial activities which are now classified as service activities. By 1901 this had increased to 36 per cent. Over this same period, those occupied in agriculture had reduced from 22 to 8 per cent while those in industrial activities saw only a slight increase, from 53 to 56 per cent.

The service activities in the 19th century were divided between skilled 'learned' professional activities such as legal and educational professions and labour intensive activities such as domestic services. The transport and retail industries were also present. In recent years, there has been a greater polarisation between knowledge-intensive services such as accountancy, legal and computer services and labour intensive services or low-tech industries such as industrial cleaning and fast-food chains. In some cases, markets have also changed, with a shift from being primarily business based to the emergence of a significant market for households, for example, the sale of personal computers and leisure activities.

A review of service sector statistics was undertaken in 1995 by a government Task Force at the request of the then President of the Board of Trade, Michael Heseltine. This was chaired by the Department of Trade and Industry (DTI), the forerunner to the Department for Business, Enterprise and Regulatory Reform (BERR), and its remit was to identify where improvements in the collection and reporting of service sector statistics was required, in order to measure more accurately their contribution to the UK economy and to assess their competitiveness. A summary of the findings and recommendations of the review was discussed by Cave (1997) and are given in **Box 1**, together with a comment on progress.

Since 1995, many new data sources have been introduced, extending the range of service sector statistics available. In many cases, surveys existing before 1995 have been redesigned and renamed, either to specifically cover services or to improve the detail of services outputs. Some new surveys have also been introduced, for example the International Trade in Services (ITIS) inquiry to measure imports and exports, primarily of business services activities. However, as outlined in Box 1, a number of the recommendations from the Task Force paper still require further developments and resources to be fully implemented.

This article reviews existing data sources for services data and considers the developments which have taken place in recent years. Improvements in service sector statistics are highlighted where these have been achieved or are still ongoing,

Box 1

Recommendations from 1995 President's Task Force Review

Recommendation	**Progress to date**
1 Greater detail should be collected on international trade in services by country and product.	ITIS survey introduced from 1996 providing detailed services trade data, mainly for business services products.
2 Better service deflators are needed to improve detailed estimates of output at constant prices.	Developments still ongoing – completion for existing Eurostat requirements will result in coverage for about 60 per cent of corporate services.
3 Industry gaps in the coverage of measuring output of marketed services should be filled.	Gaps have been filled through ABI and MIDSS surveys covering market services output, together with monthly IoS output indices for 2-digit SIC industries.
4 Constant price productivity measures should be developed for broad service industries, and in the longer term for 2-digit industries.	Experimental NS productivity published for all services (G–Q), but at section level and below publication is limited to distribution, hotels and restaurants (G–H).
5 Product and industry classification should be improved to meet policy needs.	Major SIC 2007 reclassification now being implemented will introduce a number of improvements for services. Little progress on expanding services products.
6 Costs and compliance costs should be addressed by making more use of administrative data, including the IDBR register, subject to quality improvements.	ONS independence bill makes provision for easier access to administrative data. Register improvements for the IDBR are being achieved as part of the SIC 2007 implementation.
7 Existing compliance costs may be maintained by changing sample sizes for non-service industries.	Recent reductions in sample sizes for business surveys have been applied to all industries, including services.

Box 2

Summary of major sources and frequency of outputs for Services industries

Annual Business Inquiry (ABI) – annual:
www.statistics.gov.uk/statbase/product.asp?vlnk=7381

Inter-Departmental Business Register (IDBR) – annual:
www.statistics.gov.uk/statbase/product.asp?vlnk=933

Distributive and services trades (MIDSS) – monthly:
www.statistics.gov.uk/statbase/product.asp?vlnk=1477

United Kingdom National Accounts (NA)
    The *Blue Book* – annual:
    www.statistics.gov.uk/statbase/product.asp?vlnk=1143
    Quarterly First Release – quarterly:
    www.statistics.gov.uk/statbase/product.asp?vlnk=818
    Input Output tables – annual:
    www.statistics.gov.uk/about/methodology_by_theme/inputoutput/latestdata.asp

Index of Services (IoS) – monthly:
www.statistics.gov.uk/statbase/product.asp?vlnk=9333

Services producer price index (SPPI, experimental) – quarterly:
www.statistics.gov.uk/statbase/product.asp?vlnk=7351

Labour Market Statistics First Release (includes monthly Labour Force Survey (LFS) employment and quarterly Workforce jobs (WFJ) data):
www.statistics.gov.uk/statbase/product.asp?vlnk=1944

Detailed local area employment data are published on the external NOMIS website – annual:
www.nomisweb.co.uk/default.asp

Productivity – quarterly:
www.statistics.gov.uk/statbase/product.asp?vlnk=7476

United Kingdom Balance of Payments (BoP)
    The Pink Book – annual:
    www.statistics.gov.uk/statbase/product.asp?vlnk=1140
    Quarterly First Release – quarterly:
    www.statistics.gov.uk/statbase/product.asp?vlnk=1118

International Trade in Services (ITIS) – annual:
www.statistics.gov.uk/statbase/product.asp?vlnk=14407

together with improvements which are still outstanding or desirable. Consideration is also given to the 'structural' changes that have taken place in the service sector industries over this time. The article focuses on the level and growth of service industries in terms of turnover, gross value added (GVA) and jobs, together with international trade; a summary of the major survey sources and outputs is given in **Box 2.**

Structure of service sector industries

Detailed service sector industries are defined by the Standard Industrial Classification (SIC), which at the aggregate level cover sections G–Q, as described in the left-hand side of the table in **Box 3**. Within each section, industries are further subdivided into many industries defined at the detailed 2-, 3-, 4- or 5-digit level. In order to develop and monitor policy, BERR requires this very detailed industrial breakdown. The SIC is reviewed and

revised about every ten to 15 years, with changes reflecting the growth and decline of existing industries and the emergence of new industries. A review has recently been undertaken and is in the process of being implemented (see Box 3).

At current prices, output from the UK service sector industries accounted for 75 per cent of total UK output in 2006 (see **Figure 1**). This is an increase of 29 percentage points from 1948, with more than half of the increase occurring since

Figure 1

Share of UK output: by industry sector, current prices, 1948–2006

Percentages

A–B Agriculture and fishing ..... C, E Mining, energy and water supply ---- D Manufacturing ——
F Construction ..... G–P Services —— G–P Market services –·–·–
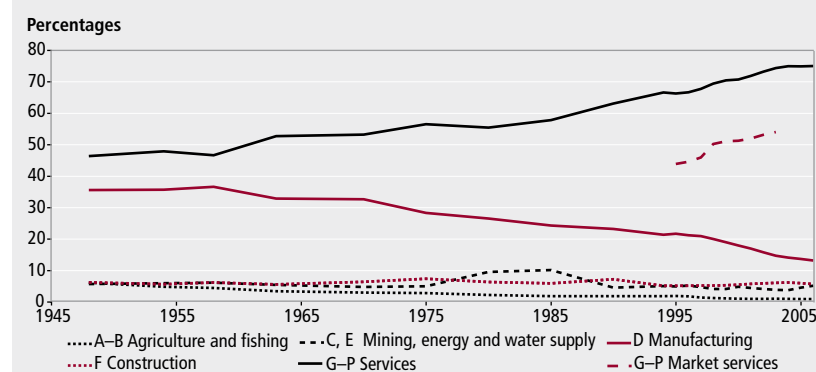
Source: GVA output data consistent with 2007 Blue Book, Office for National Statistics

1985. Over the same period, output from manufacturing has decreased from 36 per cent in 1948 to 13 per cent in 2005.

Table 1 shows the contribution of the different service industries, defined at section level, to the UK economy between 1990 and 2006. Over this period, the service share has increased by 12 percentage points with by far the largest change, 8 percentage points, coming from section K, real estate, renting and business activities. The service sectors include industries of interest to BERR such as post and telecommunications (SIC 64, part of section I) and computer services (SIC 72), research and development (SIC 73) and other business activities (SIC 74), all part of section K. The development of business services (SIC 72–74) will be discussed in a future *Economic & Labour Market Review* (ELMR) article.

The service sector includes a diverse range of industries covering both the private and public sectors. About 30 per cent of total service output is from the public sector, including all of section L (public administration and defence), most of sections M and N (education, health and social work) and part of section O (other social and personal services), which includes refuse, community and recreation services, and which may now be outsourced to the private sector. The share of GVA output for market services (G–P), although not published, is available from 1995 and is included in Figure 1. While the Office for National Statistics (ONS) publishes a quarterly experimental release for total UK market output (A–Q), there is currently no split between services and other industries. This would be desirable, together with a split within sections M–O, to give consistency with existing constant

price indices.

Although the share of manufacturing output has reduced by 10 percentage points since 1990, manufacturing GVA has increased in real terms: between 1992 and 2004 it increased by 13 per cent at constant prices. Over the same period, manufacturing intermediate consumption of services has increased by 59 per cent, more than twice the rate of its current price GVA growth. Hence, UK manufacturing is making an increasing contribution to the growth of the UK service sector through outsourcing. The relationship between manufacturing and services will be explored further in a future ELMR article.

Industry size and growth

Major survey sources

Industry size can be defined by a number of different measures, including the number of businesses or enterprises, turnover, GVA and employment. **Table 2** summarises the major ONS surveys which include an industry breakdown for one or more of these measures. Most of the sources have either been introduced as new surveys in the early 1990s or following the 1995 President's Task Force review. Some existing surveys have seen major developments and improvements to expand coverage to improve service sector outputs.

With the exception of the Labour Force Survey (LFS), a household survey, all of the sources are business surveys which generally draw a stratified sample by employment size from the

Table 1

Share of UK output by service sector and other industries, current prices, 1990–2006

		Percentages					Percentage points change
Section	Industry	1990	1995	2000	2005	2006	1990–2006
A–B	Agriculture and fishing	1.9	1.9	1.0	0.9	0.9	−0.9
C, E	Mining, quarrying, electricity, gas and water supply	4.6	4.9	4.8	4.6	5.2	0.6
D	Manufacturing	23.2	21.7	17.9	13.7	13.2	−10.1
F	Construction	7.2	5.2	5.5	5.9	5.7	−1.5
G–P	**Services**	63.1	66.3	70.7	74.9	75.0	12.0
G	Wholesale and retail trade	11.5	11.7	12.4	12.1	12.1	0.6
H	Hotels and restaurants	2.8	2.5	3.1	3.0	3.1	0.3
I	Transport and communication	8.4	8.0	8.2	7.5	7.2	−1.2
J	Financial intermediation	7.2	6.6	5.5	8.8	9.4	2.3
K	Real estate, renting and business activities	17.3	18.8	23.1	24.7	24.8	7.5
L	Public administration and defence	6.6	6.0	5.1	5.0	5.1	−1.5
M	Education	4.9	5.6	5.7	5.8	5.6	0.7
N	Health and social work	5.9	6.4	6.6	7.4	7.3	1.4
O–P	Other social, personal and private households	3.7	4.2	5.0	5.4	5.4	1.7
FISIM	Adjustment for financial services	−5.1	−3.6	−4.0	−4.7	−5.0	0.1
A–P	All industries (=100%) (£ million, current prices)	£505,025	£640,416	£840,979	£1,096,629	£1,154,959	

Source: GVA output data consistent with 2007 Blue Book, Office for National Statistics

Box 3

Summary of sections and number of classes and subclasses in existing SIC 2003 and revised SIC 2007, currently under implementation

A review of the SIC has recently been completed and is currently being implemented in the UK under the terms of a binding EU directive for the NACE2 classification, which covers detailed industries down to the 4-digit class level. In addition, the UK has agreed to implement a number of 5-digit subclasses. The table below summarises the existing SIC sections, classes and UK subclasses together with the changes which are currently being implemented for the SIC 2007. These will be phased in from 2008 for annual and short-term survey collection and their outputs, and will be completed in September 2011 for the UK National Accounts.

Many existing UK subclasses will become classes, resulting in a drop in the total number from 285 to 191, but this should improve the availability of detailed outputs and increase international comparability. However, the combined number of classes and subclasses has increased, and for services will be 422. Other improvements for services include the formation of four sections from three existing sections leading to separate sections for information and communication (J), real estate (L), professional, scientific and technical (M), and arts and recreation (R). These will give major improvements to the existing section K, real estate and other business activities, and provide more coherence within the sections in terms of professional skills and labour intensive activities.

Summary of SIC 2003 and SIC 2007 classes and subclasses

	SIC 2003				NACE 2 (SIC 2007)		
Section		Number of classes[1]	Number of subclasses[1]	Section		Number of classes[1]	Number of subclasses[1]
A	Agriculture and forestry	14	4	A	Agriculture, forestry and fishing	39	2
B	Fishing	2	0	B	Mining and quarrying	15	2
C	Mining and quarrying	16	3	C	Manufacturing	230	51
D	Manufacturing	242	80	D	Electricity and gas	8	0
E	Electricity, gas and water	7	0	E	Water supply and sewerage	9	0
F	Construction	17	3	F	Construction	22	6
G	Wholesale and retail trade	79	46	G	Distribution	91	23
I	Transport and communication	21	25	H	Transport and storage	23	16
H	Hotels and restaurants	8	14	I	Accommodation and food services	8	8
				J	Information and communication	26	10
J	Finance intermediation	12	20	K	Finance and insurance	18	22
K	Real estate and other business activities	39	60	L	Real estate	4	3
				M	Professional, scientific and technical	19	20
				N	Administrative and support services	33	20
L	Public adminstration and defence	10	0	O	Public adminstration and defence	9	0
M	Education	6	5	P	Education	11	2
N	Health and social work	7	7	Q	Health and social work	12	2
				R	Arts and recreation	15	4
O	Other community and personal activities	30	18	S	Other services	19	0
P–Q	Household and extra-territorial	4	0	T–U	Household and extra-territorial	4	0
Total (non-services, A–F)		298	90	Total (non-services, A–F)		323	61
Total (services, G–Q)		216	195	Total (services, G–U)		292	130
Total (A–Q)		514	285	Total (A–U)		615	191

Notes:

1 Class and subclass totals within sections differ partly due to movement of classes between sections, mainly for the service sectors; some SIC 2003 subclasses have been merged in NACE2 and many have become new NACE2 classes, with some revision of content.

Counts are based on the published NACE2 classification and the reported outcomes from the ONS evaluation subclass working group.

Inter-Departmental Business Register (IDBR). The current register was developed in the mid-1990s and is based on two administrative sources:

- businesses registered for value-added tax (VAT) or a pay-as-you-earn scheme with HM Revenue and Customs, and
- incorporated businesses registered with Companies House

The IDBR was the subject of a National Statistics Quality Review in 2001 and a number of recommendations were made to improve the quality and outputs of the register, see ONS (2001). The register is currently maintained through the annual Business Register Survey (BRS), but developments are underway to replace this with the Business Register Employment Survey (BRES), which will combine the register inquiry with the employment part of the Annual Business Inquiry (ABI). The register is currently being revised and updated as part of the implementation of the new SIC 2007, which requires that all existing businesses are allocated to the new revised classification. To achieve this, a new automated coding tool has been developed which will result in quality improvements to the register.

Turnover

Turnover is collected in the ABI and is used as an intermediate measure in the derivation of GVA. The ABI was introduced in 1995 to replace the Annual Census of Production, which was limited to manufacturing and other production industries. ABI coverage was extended to cover market services and so excludes all of public administration and defence (L), most of health (M) and education (N) and parts of other services (O). Section J, financial services, is also excluded since

Table 2
Summary of major sources of ONS data for turnover, GVA and employment

Source	Major outputs	Start date	Frequency	Industry coverage
Annual Business Inquiry (current prices)	Number of enterprises Turnover GVA Employment	1995	Annual	Most sections, including SIC 2-, 3- and 4- digit detail, excluding sections: J Financial Intermediation L Public administration and defence
Short-term turnover surveys (current prices)	Turnover	1991/92 2001	Quarterly Monthly	Mainly at 3-digit SIC for sections G; H; I (part); K (excluding SIC 70); M (part); N (part); O (part)
National Accounts (*Blue Book*) (constant prices)	GVA output indices	Most by 1980s[1]	Annual Quarterly	All sections and most 2-digit industries
National Accounts (*Blue Book*) (current prices)	GVA output	1992	Annual Some quarterly	All sections, weights available for some years from 1948
National Accounts Input-Output Tables (current prices)	Intermediate consumption GVA Final demand Imports/exports	1992	Annual	123 products by 123 industries, consistent with 2-digit SIC industries
Index of Services (constant prices)	GVA output indices	1995	Monthly	All sections and most 2-digit industries, some with experimental status
Workforce jobs (some seasonally adjusted)	Total workforce jobs[2] Employee jobs	1978	Quarterly	All sections, with further subdivision mainly at 2-digit SIC
Annual Survey of Hours and Earnings	Hourly, weekly and annual pay Paid hours worked	1997	Annual	Section and 2-digit SIC
Labour Force Survey[3] (some seasonally adjusted)	Employment charactersitics including employees, self-employment, unemployed inactivity, full-time, part-time, second jobs, hours worked, age, sex, ethnicity, occupation, qualifications, region and local area	1992	Quarterly	Industry self-defined by respondent which may not be consistent with IDBR classification, available at section and 2-, 3-, 4- and 5-digit SIC

Notes:
1 Some indices are available from 1948.
2 Includes employees; self-employment measured by the LFS; HM Forces and government-supported trainees from administrative data.
3 The LFS is a household survey, all other sources listed are business surveys.

the concept of turnover is not directly relevant. Eurostat have, however, recently extended the Structural Business Statistics regulation, under which detailed turnover data is collected, to include financial services. ONS is currently considering how this requirement will be met, including, if appropriate, extending the existing ABI survey to include financial services.

Since 1991, estimates of turnover for the distribution and other market services have also been collected quarterly and published for many of the market services covered by the ABI, mainly at the 3-digit SIC level and above. The frequency of this short-term turnover survey (MIDSS) has been changed to monthly in a number of stages between 1994 and 2001.

In collaboration with ONS, BERR has recently undertaken an extensive evaluation of the turnover measured by the annual ABI and the short-term MIDSS data, where monthly data have been aggregated to annual estimates. Generally this shows reasonable agreement at the higher 2-digit division level but, as might be expected, there is poorer agreement in some cases for detailed 3-digit divisions and 4-digit classes. A detailed investigation by ONS indicates that these differences are due to adjustments included in the short-term MIDSS data to

take account of sample rotations and which are designed to track growth rates, which is generally being achieved. Adjustments are needed since, within a particular stratum, the new business enterprise may have a significantly different level of turnover than the outgoing enterprise.

GVA current price data
Where turnover is collected in the annual ABI and short-term MIDSS surveys, this is used as the source to derive GDP using the output approach. A summary of the survey sources, output indicators and deflators is published by ONS (see ONS 2007a). Where appropriate, this is specified at the detailed 4- or in some cases 5-digit SIC level, including those not covered by the ABI and MIDSS surveys. The detailed weights are currently published at 2000 basic prices although monthly IoS and quarterly National Accounts GVA outputs are now based on 2003 basic prices, and these 2003 weights are available from ONS on request.

Table 3 shows the size of the service sector industries at the section and division level (2-digit SIC), as measured by the 2005 ABI, defined in terms of the number of enterprises, turnover, GVA and employment. The number of VAT-based enterprises recorded in the IDBR

is also shown to give some indication of size for those industries not covered by the ABI, which excludes financial and non-market services. It is noted that the number of enterprises is published on a different basis for the IDBR and ABI, although consistent counts can be obtained on request for the IDBR. As noted earlier, ONS is currently developing BRES which will combine the employment part of the ABI with the BRS which updates the IDBR. Outputs from BRES will be extended to the whole economy which will be a major improvement over the ABI's more limited market sector coverage.

The preferred source for GVA data is from National Accounts which are published in current prices in the *Blue Book* at section level and for 123 industries and product groups in the Input-Output tables (I-O), mainly corresponding to 2 digit division level for the service industries. The latest 2007 *Blue Book* includes GVA output for 2006. Normally outputs for the latest year are published on a provisional basis due to the absence of balancing and ABI data being provisional at the time of publication. However, for 2007, the last two years' output have been published on a provisional basis, since balancing has not yet been undertaken for 2005 due to the

Table 3
Size of service sector industries: by various measures, 2005

Section/ division	Industry	Number of VAT-based enterprises (IDBR)	Number of enterprises	Total turnover excluding VAT	GVA at basic prices	Average employment during the year	Total employment costs	Cost per employment
		Numbers[1]	Numbers	£ million	£ million	Thousands	£ million	£ thousand
G	**Distribution**	**350,265**	**383,004**	**928,852**	**142,558**	**4,948**	**75,495**	**15**
50	Motor distribution		70,993	157,409	22,463	628	10,674	17
51	Wholesale		110,591	505,620	59,588	1,212	30,100	25
52	Retail		201,420	265,822	60,507	3,109	34,721	11
H/55	**Hotels and catering**	**114,815**	**130,180**	**61,743**	**28,511**	**1,916**	**16,414**	**9**
I	**Transport and communication**	**73,665**	**81,744**	**213,047**	**82,301**	**1,634**	**43,869**	**27**
60	Land transport		46,420	40,596	17,820	581	11,913	21
61	Water transport		1,393	6,809	2,144	18	828	46
62	Air transport		989	19,845	7,042	90	3,306	37
63	Transport auxiliary services		16,992	72,948	21,554	416	11,288	27
64	Post and telecommunications		15,950	72,849	33,742	529	16,535	31
J	**Financial services**	**9,600**			*Not included in ABI survey*			
65	Financial intermediation	3,160						
66	Insurance and pension funds	625						
67	Financial auxiliaries	5,820						
K	**Real estate, renting and business**	**495,965**	**616,973**	**337,695**	**n/a**	**4,776**	**103,515**	**22**
70	Real estate		99,187	46,324	n/a	498	8,559	17
71	Hiring machinery		16,476	22,774	12,470	175	3,458	20
72	Computer services		102,502	58,969	36,004	585	20,095	34
73	R&D services		3,006	10,083	4,740	102	4,247	42
74	Other business activities		395,802	199,545	121,690	3,416	67,157	20
L/75	**Public administration and defence**	**925**			*Not included in ABI survey*			
M/80	**Education[2]**	**12,775**	**26,838**	**20,509**	**7,949**	**3,308**	**22,436**	**7**
N/85	**Health and social work services[2]**	**10,570**	**43,895**	**23,017**	**14,995**	**1,157**	**11,959**	**10**
O	**Other community and personal[2]**	**126,415**	**166,162**	**128,133**	**44,289**	**1,376**	**22,651**	**16**
90	Sewage and refuse disposal		3,006	11,856	7,268	81	2,301	28
91	Membership organisations n.e.c.		21,512	6,714	2,158	207	3,528	17
92	Recreational and cultural		71,096	92,782	25,687	723	12,918	18
93	Personal services		70,548	16,781	9,177	365	3,905	11
P/95	**Domestic services**	**n/a**			*Not included in ABI survey*			

Notes:

1 2-digit division totals may not sum to section totals due to rounding.
2 Excludes public sector activities.

Source: Annual Business Inquiry and Inter-Departmental Business Register, Office for National Statistics

Figure 2
Comparison of ABI and National Accounts I-O GVA output for selected service sector industries, 2004
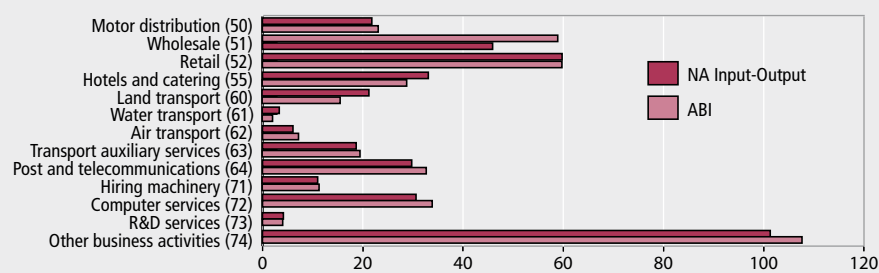
Source: Annual Business Inquiry and National Accounts Input-Output tables, 2004

ongoing work on National Accounts re-engineering (see Beadle 2007).

The latest I-O tables are for 2004, and GVA data differ from ABI data due to the National Accounts data being balanced and adjusted to take account of the three different measures of GDP, based on input, output and expenditure. **Figure 2** shows a comparison of the ABI and National Accounts current price GVA data for the 2-digit SIC service sector industries, which have full coverage in the ABI. The National Accounts data are considered to be the best source for showing the share of an industry or size in a given year, together with the change in share over time (see Figure 1 and Table 1). For industries not covered by the National Accounts I-O tables, ABI data can be used for these measures, but there is a lack of coherence and data are only available from 1995.

The need for users such as BERR to use GVA estimates from the ABI for detailed service industries rather than the preferred National Account outputs should be reduced following the implementation of National Accounts re-engineering, where it is proposed to expand the number of I-O industries to 197. Much of the increased detail is in services with industries defined at 3-or 4-digit SIC, although in some cases industries are aggregated due to the small size of some industries. While it is proposed that the I-O products groups will also see a significant expansion to 397, there will be limited improvements in services with generally a one to one correlation with industry due to the lack of data for detailed service products.

Constant price output indices
Growth over time is more meaningful at constant prices in order to remove the effect of price changes. Constant price indices are published by ONS at section and 2-digit SIC level for the service industries on an annual and quarterly basis. The annual

Table 4
GVA growth in service and other industries, 2003 prices, 1981–2006[1]

					Percentages
Section	Industry	1 year 2005–06	5 years 2001–06	10 years 1996–2006	25 years 1981–2006
A–B	Agriculture and fishing	2.8	16.8	14.7	34.3
C	Mining and quarrying	–8.1	–26.8	–29.4	–14.2
D	Manufacturing	1.3	-0.4	4.1	38.2
E	Electricity, gas and water supply	–2.6	0.1	14.5	69.7
F	Construction	1.0	15.7	23.6	91.6
G–Q	All services[2]	3.6	17.2	43.5	118.5
G	Wholesale and retail trade	2.7	18.7	38.7	133.2
H	Hotels and restaurants	6.2	22.8	41.7	89.0
I	Transport and communication	3.8	14.4	74.5	202.5
J	Financial intermediation	8.5	36.9	76.4	177.5
K	Real estate, renting and business activities	5.5	24.6	68.5	n/a
L	Public administration and defence	0.5	11.1	9.2	0.0
M	Education	0.3	4.3	9.1	33.9
N	Health and social work	3.0	18.8	34.9	92.0
O–Q	Other social, personal and private households	2.9	7.6	24.1	129.4
A–Q	All industries[2]	2.9	13.2	32.0	93.6

Notes:

1 2005 and 2006 data are provisional.
2 Includes adjustment for financial services (FISIM).
Source: National Accounts constant price GVA indices, 2007 Blue Book, Office for National Statistics

growth derived from these indices is shown in **Table 4** over one, five, ten and 25-year periods for each service industry defined at section level, together with the other non-service industries. Financial intermediation (section J), real estate, renting and business activities (section K) and hotels and restaurants (section H) experienced the highest growth over a one- or five-year period – in excess of 5 per cent over one year and more than 20 per cent over five years.

Over a longer timescale of ten or 25 years, transport and communication (section I) has experienced some of the highest growth together with sections J and K. Within the non-service industries, manufacturing (section D) has grown by 4 and 38 per cent over the last ten and 25 years, respectively, but has shown only growth of 1.3 per cent over the one-year period with a slight decline of 0.4 per cent over five years. Mining and quarrying (section C) has shown the greatest decline of all industries, due to the considerable drop in coal production in the 1980s and, in more recent years, some decline in oil and gas output from the North Sea.

Monthly indices are also published in the Index of Services (IoS) where the aggregated index has recently been changed from experimental status to a National Statistic. Where individual 2-digit IoS indices remain experimental, industry reviews are ongoing and it is hoped that most series will have National Statistics status by the end of 2008 although, due to

quality issues, some 2-digit indices may remain experimental. A review of recent IoS developments is given by Drew and Morgan (2007), including a discussion of the deflators used. The need for monthly outputs is mainly a macroeconomic requirement to improve the monthly estimate of overall GDP. BERR's need is primarily for improved quality at the detailed industry level on a quarterly and annual basis for microeconomic analysis.

Deflators based on individual price indices are available for a number of service industries using the individual components of the services producer price index (SPPI), and in many cases more general or proxy indicators are used as deflators. This is one area where further developments are still needed to fulfil the recommendations of the 1995 President's Task Force report, ideally to achieve a comparable level of detail to the manufacturing industries. **Table 5** shows the available detailed price indicators and their annual growth for the last three years. The table also indicates where the index is being used as the GDP(O) deflator. Where the deflator is being applied in 'part', this is mainly because the outputs from the industry include consumer services where the RPI or other deflators are more appropriate. In some cases, the existing price indicators are still under development or are being evaluated before being used as deflators.

SPPI coverage is currently limited to those industries shown in Table 5. Price indices are being developed for other

industries in accordance with Eurostat's Short-term Statistics Regulation (STR) which places an obligation on the UK to develop price indices for specified industries by 2008. Ongoing major developments include computer services (SIC 72). Other industries which are covered by the STR include most of the outstanding business services in SIC 74 such as legal services, accountancy, management consultancy, architecture and engineering activities. Completion of these developments will result in coverage for about 60 per cent of corporate market services.

The UK, through ONS and BERR, is also an active member of Voorburg, an international group devoted to the development of service sector statistics. In recent years, the work programme has been devoted to developing methods for the measurement of prices for individual service industries, particularly with reference to National Accounts needs for detailed industry deflators. The group has recently produced a prices thesaurus and a general methodology report as well as undertaking studies on the collection of turnover and prices data for products within individual industries (see Voorburg 2007).

Employment

As shown in Table 2, employment data are measured by three different ONS surveys: the LFS, WFJ and the ABI. The LFS, a household survey, is ONS's recommended source for estimating the total employment in the UK and is used by the Monetary Policy Committee of the Bank of England to measure and monitor monthly economic activity and unemployment. Industry classification in the LFS is, however, self-defined and is considered to be of poorer quality than a business survey, where the industry classification is defined from the IDBR and is used as a stratifier in the sample design of the survey. Business surveys, however, count jobs rather than employees so that individuals who hold more than one job will be counted more than once, and this is not directly comparable with the LFS employment measure. The quarterly WFJ series incorporates self-employment from the LFS and can be compared with total LFS employment by including first and second jobs, subject to a number of other reconciliation adjustments.

ABI data are the only source which provide consistent employment, turnover and GVA data for very detailed industry sectors defined by the 4- or 5-digit class

Table 5
Detailed service industries currently covered by the SPPI

SPPI service/SIC industry	SIC (2003)	IoS weight (2003) parts per 1,000	Used as all or part of GDP(O) deflator	Percentage change (latest year on previous year)		
				2004	2005	2006
Experimental top level SPPI (net)				2.2	3.4	2.7
Maintenance and repair of motor vehicles	50.2	5.5	Part	4.5	4.0	4.0
Hotels	55.1	10.9	Part	3.7	2.6	0.5
Canteens and catering	55.5	4.7	Part	0.8	1.2	4.4
Business rail fares	60.10/1	3.3 (all of 60.1)	No	4.2	4.9	6.4
Rail Freight	60.10/9		No	0.6	2.1	4.1
Bus and coach hire	60.23/1	1.0 (all of 60.23)	Part	2.9	3.9	5.4
Freight transport by road	60.24 / 60.30	15.6 (combined)	All	1.8	4.6	1.7
Commercial vehicle ferries	61.10/1	1.1	No	−0.2	2.1	0.1
Sea and coastal water freight	61.10/2	2.2	Part	−1.9	0.0	3.5
Business air fares	62.10/1	4.1	No	1.8	3.5	4.6
Freight forwarding	63.22/63.4	6.3 (combined)	All	3.2	4.7	1.2
National post parcels	64.11	7.1	No	5.4	3.1	3.2
Courier services	64.12	3.8	All	4.0	4.1	2.0
Business telecoms services	64.2	29.2	Part	−4.0	−4.0	−5.1
Property rental payments (non-dwellings)	70.2	23.4	No	4.0	3.2	3.4
Real estate agency	70.31	6.5	Part	6.6	8.3	12.8
Management of real estate on a fee or contract basis	70.32	4.3	All[1]			
Construction plant hire	71.32	3.2	All	−0.4	−0.2	1.1
Computer services	72.00	38.7	No	−0.5	0.8	0.8
Market research	74.13	1.0	All	0.9	2.8	3.1
Technical testing	74.3	2.4	All	1.9	1.2	3.2
Advertising placement	74.4	8.4	Part	4.8	4.0	0.6
Employment agencies	74.5	19.7	All	1.7	2.8	3.0
Security services	74.6	4.2	All	4.3	3.0	6.6
Industrial cleaning	74.7	4.7	All	1.3	1.2	2.3
Commercial film processing	74.81/4	1.1 (all of 74.81)	Part	3.6	−2.1	3.2
Contract packaging	74.82	0.8	All	2.0	5.0	2.2
Direct marketing/secretarial	74.85(pt)	1.1 (combined 74.85 & 74.86)	All	1.6	2.7	4.3
Translation and interpretation services	74.85(pt)		All	0.7	-0.3	0.7
Call centre activities	74.86		All[2]			
Adult education	80.42	6.8 (all of 80.4)	Part	3.3	1.4	3.2
Sewerage services	90.01	9.0 (all of 90)	Part	5.9	11.6	9.4
Waste disposal	90.02		Part	5.7	13.0	6.3
Commercial washing and dry cleaning	93.01	2.5	All	2.7	0.5	1.7

Notes:

1 Uses SPPI indices for canteens and catering; security services; industrial cleaning and property rental payments.
2 Uses SPPI indices for direct marketing/secretarial.

Source: Experimental services producer price index, Office for National Statistics

Figure 3
UK workforce jobs: by industry sector

Millions
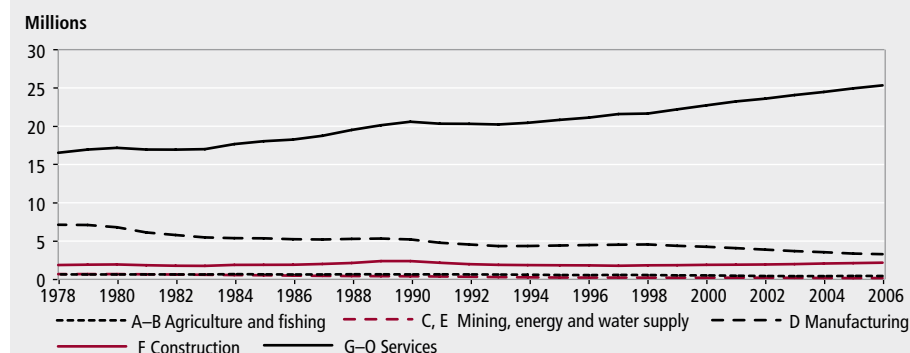
Source: Workforce jobs series, Office for National Statistics

and subclass level. ABI employment data include employees and sole proprietors and this total employment figure is published by ONS together with corresponding turnover and GVA estimates for detailed SIC industries. Sole proprietors may be classified as self-employed in the LFS and so there are consistency issues between the ABI and LFS data. ABI employee data, excluding sole proprietors, are published via the NOMIS website (see Box 2) and ABI employee data are used to benchmark the quarterly WFJ series in an annual benchmarking exercise.

Figure 3 shows the total number of UK Workforce jobs in the service sector industries between 1978 and 2006, together with manufacturing and the other non-service industries. The number of service sector jobs, including employee jobs and the self-employed, has increased from 16.5 million in 1978 to 25.0 million in 2006 and now accounts for over 80 per cent of all jobs. Over the same period, manufacturing has seen a decrease from 7.1 million to 3.3 million jobs.

Total Workforce jobs are available on a consistent basis from 1978 for the aggregated industry sections given in **Table 6**, which shows the growth in workforce jobs over the last 25 years up to 2006. Self-employment is included from the LFS from 1986 and before this from the Census. Armed forces and government-supported trainees are also included from administrative sources but both are relatively small in terms of total job levels. Table 6 shows that sections J

Table 6
Growth in workforce jobs in service industries, 1981–2006

					Percentages
Section	Industry	1 year 2005–06	5 years 2001–06	10 years 1996–2006	25 years 1981–2006
A–B	Agriculture and fishing	–2.2	–7.4	–21.3	–31.8
C, E	Mining, quarrying, electricity, gas and water supply	1.8	–22.4	–26.4	–74.2
D	Manufacturing	–2.3	–19.4	–26.7	–46.3
F	Construction	2.7	13.7	19.4	17.9
G–O	All services	1.6	9.0	19.9	49.4
G–H	Distribution, hotels and restaurants	–0.5	3.2	9.8	28.8
I	Transport and communication	1.8	2.3	19.5	13.3
J–K	Financial, real estate, renting and business activities	2.4	11.1	32.6	115.1
L–N	Public administration, defence, education, health and social	2.3	14.1	19.4	40.0
O	Other social and personal	3.6	11.8	24.8	77.1
A–O	All industries	1.2	5.0	11.3	19.7

Source: Workforce jobs series, Office for National Statistics

Figure 4
Difference between LFS and WFJ employee jobs within service sector industries, September 2004
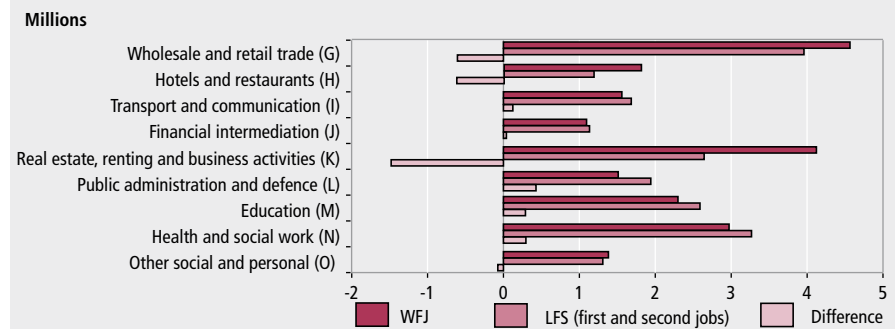
Source: Labour Force Survey and Workforce jobs data, Office for National Statistics

and K, financial and real estate, renting and business activities have experienced the highest increase in jobs over the last 25 years, at 115 per cent, followed by section O, other social and personal activities, at 77 per cent. In recent years, sections J and K have continued to experience some of the highest growth, although sections L–N, which are mainly public sector jobs, experienced the highest growth of 14 per cent between 2001 and 2006.

At a more detailed industry level, employee jobs are available from 1978 at each 2-digit section and, until recently, for some 3- or 4-digit SIC groups or classes. Detailed self-employment data can be obtained from the LFS from 1992 and added into the employee jobs series to provide an estimate approximating to the published total WFJ series. Minor differences will exist due to the omission of armed forces and government-supported trainees and due to the published series being seasonally adjusted.

The introduction of both the LFS and ABI surveys greatly improved the availability of employment and job data for service sector statistics, with the LFS providing many additional characteristics such as age, ethnicity, occupation and second jobs. These measures will be discussed in a future ELMR article, together with other performance characteristics such as productivity and profitability.

ONS has recently published an Employment and Jobs Review (see ONS 2006), which reports that between 1992 and 2004, total UK jobs reported by WFJ data have been consistently higher than LFS estimates by an average of 750,000. A reconciliation of the two series at the UK level, taking into account known differences in coverage and definitions, results in a considerable reduction in this difference, but this cannot be undertaken at the detailed industry level that BERR needs. Hence, as reported by Avery (2006), the WFJ series, which is published quarterly for the service industries, is the preferred source for detailed jobs data for industries within the service sector.

Figure 4 shows the difference between LFS and WFJ employee jobs for each section in the service industries. Section K, real estate, renting and business activities has the largest difference, with LFS jobs being significantly below WFJ employee jobs. It is known that employees working for contractors in support service industries can incorrectly classify themselves in the LFS as working in the industry of their place of work, often in the public sector, rather than their actual employer. ONS has recently investigated the feasibility of linking LFS respondent workplace details to the IDBR to provide a more reliable and consistent industry classification for the LFS, and in the longer term it is hoped that this could be achieved. The large difference in section K may also be due to the LFS not recording some temporary foreign workers, who in principle are included in the business survey estimate of employees in WFJ. There may also be some misclassification of employee jobs as self-employment in the LFS, which is also self-defined by the respondent.

LFS employment data are weighted to population totals after each decennial census and, between censuses, following major revisions to mid-year population estimates. Following the 1991 and 2001 Censuses, this weighting resulted in movements in the employment levels which affected the reconciliation or agreement with workforce jobs. Similarly, workforce job levels were affected by changes in survey methodology at the time of the changes from the Annual Employment survey to the ABI. It is possible that there will be similar effects when the BRES survey is introduced to replace the ABI and also when the 2011 Census data are used to weight the LFS data. While inconsistencies remain between the LFS, ABI and WFJ data, users such as BERR would benefit from the publication of coherent employment and jobs data, which take into account known differences and, where necessary, balance the different estimates similar to existing National Accounts practices for GVA.

International trade

Since 1990, global international trade in goods has increased by nearly 400 per cent, with the IMF reporting world exports of US$3,400 billion in 1990 increasing to US$12,000 billion in 2006 (at current prices). Over a similar period, reported world exports of services have more than tripled from US$800 billion in 1990 to US$2,500 billion in 2005 (at current prices). Exports of services are mainly undertaken by the developed countries, and in 2005 the G7 countries accounted for 45 per cent of world exports of services.

This growth in trade has partly been brought about through free trade

agreements made through a series of trade negotiations or rounds under the General Agreement on Tariffs and Trade, established after the Second World War. The 1986–94 Uruguay round led to the creation of the World Trade Organisation in 1995. Existing trade agreements are primarily based on the Uruguay round, as only limited progress has been made since 2000 in the current Doha round, due to disagreements on the way forward between the developing and developed economies of the world.

The EU was established to promote and establish the free movement between member states of goods, services, persons and capital. It has enjoyed a free market for goods since its creation but there have been a number of barriers to trade in services, for example, difficulties in establishing businesses in other member states. This has been addressed through the adoption of the 2006 EU services directive which requires member states to remove unjustifiable barriers. It also requires the establishment of a single point of contact to provide support on establishing a presence in the member state. In addition, it puts in place arrangements for more streamlined regulation between countries.

The expansion in international trade contributes to the concept of globalisation, defined by the IMF as 'the process through which an increasingly free flow of ideas, people, goods, services and capital leads to

the integration of economies and society'. The growth in globalisation can be an incentive to governments to make free trade agreements and liberalise labour markets, as international corporations enjoy increased power to relocate activity to more favourable locations (see DTI 2004).

Migration policy within individual countries may also have an influence by either protecting the domestic labour force or allowing the movement of labour and increasing competition. The effect of migration into the UK on the services industries will be considered in a later article which will include a discussion of labour market characteristics. The OECD has produced a handbook on globalisation indicators and also publishes indicators covering measures such as trends in trade in goods and services and the activity of multinationals in the service sector (see OECD 2005).

UK trade in services

In 2005, the UK accounted for more than 8 per cent of world exports of services, surpassed only by the United States. Consistent trade in services data has been available for the UK since 1996 following the introduction of a new survey, International Trade in Services (ITIS), which primarily covers business services. This marked a major improvement in coverage for trade in services. Over the last

ten years, the UK has enjoyed a positive trade balance in international trade in services with exports consistently exceeding imports (see **Figure 5**). In fact, this positive balance makes a major contribution to improving the overall UK trade balance since the UK balance in goods has been in deficit since 1983. It is noted, however, that about 10 per cent of service exports are undertaken by manufacturing rather than service industries, primarily royalties and consulta ncy services.

Trade in services is reported primarily in terms of products, rather than on an industry basis, and **Figure 6** shows the exports, imports and balance in 2006 of each major product, defined according to agreed international standards. Business and financial services comprise the largest UK export groups, followed by travel and transportation. Both of the latter have a negative balance, with imports into the UK exceeding exports. With the exception of government services, all other product groups have a positive trade balance.

The partner or destination country for UK exports of services includes many of the developed and developing countries throughout the world. In 2006, the US was the top partner country receiving over 20 per cent of UK service exports. The UK enjoys a healthy services trade surplus with the US. The European Union (EU27) also accounted for over 40 per cent of UK service exports, although these are primarily received by members of the original EU15. Other non-EU top ten partner countries include Switzerland, Japan and Singapore.

Regional exports

BERR undertakes a partial regional analysis of service exports, mainly covering business services, which is based on the ONS ITIS survey. This is of interest to the Regional Development Agencies, which are BERR agencies. **Table 7** shows the level of selected services exports for 2005, allocated to the UK regions defined by Government Office Region. This limited analysis covers about 30 per cent of UK exports of services, with London and the South East accounting for about 40 and 25 per cent, respectively, of these service exports.

The ITIS sample typically comprises 20,700 enterprises, with about 20,000 being surveyed annually, accounting for about 40 per cent of the total ITIS exports of services. The remaining 700 enterprises consist of a panel of known traders which are included in the sample each year and are surveyed quarterly; a high proportion of these are

Figure 5
UK trade in services

£ billion
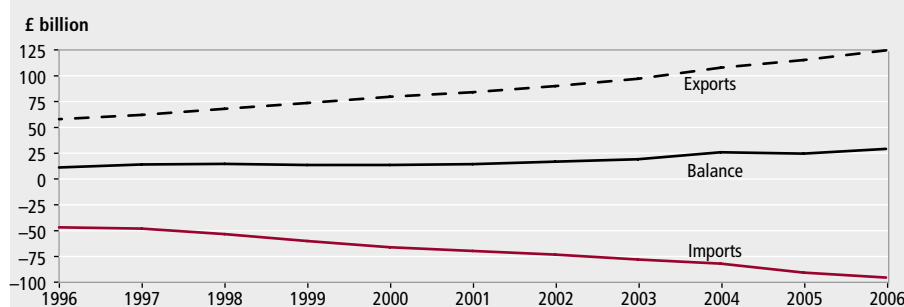
Source: Pink Book 2007, Office for National Statistics

Figure 6
UK trade in service products, 2006
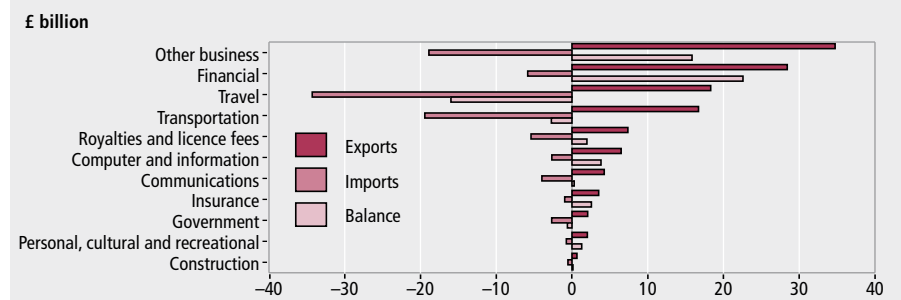
£ billion

Source: Pink Book 2007, Office for National Statistics

Table 7
Value[1] of selected regional exports of services, 2005

£ million

| | Government Office Region | | | | | | | | | | |
Services	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	Eastern	London	South East	South West	Rest of UK	UK
Computer and information	50	230	100	135	290	280	2,300	2,200	180	420	6,185
Royalties and licence fees[2]	50	565	70	120	85	435	1,650	2,675	780	185	6,615
Merchanting and other trade-related services	40	230	35	30	45	105	1,535	500	45	155	2,720
Legal, accounting and management consulting	125	205	140	130	240	285	4,920	840	175	310	7,370
Advertising and market research	25	50	35	30	25	100	1,590	345	175	30	2,405
Research and development	*	*	110	280	35	860	395	1,345	195	435	4,705
Architectural, surveying and construction[3]	15	25	30	25	15	70	110	250	15	390	945
Property management[4]	80	45	40	30	40	80	420	365	65	40	1,205
Services between affiliated enterprises, n.i.e.	20	110	45	25	55	175	1,085	550	55	260	2,380
Services not currently regionalised											80,650
Total exports of services											115,180

Notes:

1 Figures are not National Statistics and may not be accurate to the level shown. Regional data and UK totals are rounded to the nearest £5 million and are consistent with Tables 3.1, 3.7, 3.8 and 3.9 in the 2007 *Pink Book*, except for property management which is not given separately in the *Pink Book* and is unadjusted ITIS data.
2 Excluding film and television royalties and licence fees, see Table 3.8 in the *Pink Book*.
3 Construction figures from Table 3.1 in the *Pink Book* have been combined with figures for architectural and surveying from Table 3.9.
4 Part of other miscellaneous business services, see Table 3.9 in the *Pink Book*.
* disclosive data.

Source: BERR analysis of the ONS International Trade in Services (ITIS) Inquiry, adjusted to Pink Book totals

consolidated returns, accounting for about 60 per cent of the total ITIS exports of services. For the regional analysis, BERR combines the annual and quarterly returns treating all data as annual returns. The ITIS sample is not stratified by region; the regional allocation is undertaken by linking individual anonymised enterprises in the ITIS micro-data set into the IDBR and apportioning the export value to regions, using the employment in each local unit. The published results are subject to primary and secondary disclosure testing using ONS procedures.

It is recognised that this approach may not reflect actual practices since it is possible that not all local units within a particular enterprise will contribute to the exports of services. However, about 50 per cent of enterprises in the ITIS survey have only one local unit, and another 30 per cent have two, three or four local units which have over 60 per cent of their local units in the same region as the enterprise unit. Overall, about 50 per cent of local units are in the same region as the enterprise unit, which helps to reduce the uncertainty brought into the analysis through the proportional allocation of the exports across all local units.

The data can be used to show the relative size of exports between regions for a particular product or between products within a region. Annual variations in the data can be due to individual enterprises obtaining new or ending existing export contracts, but may also reflect the level

of reliability of the data. Consideration is being given to extending the analysis to other service exports such as travel, transportation and financial services, although it is recognised that, for some of these products, the recorded place of transaction and location of the business unit providing the service may differ.

Ongoing developments and need for further improvements

At the time of the 1995 President's Task Force review (see Cave 1997), a number of significant developments to improve UK service sector statistics were either being undertaken or planned; these have now been completed. They include the ABI survey which was introduced in 1995 and which collects turnover and employment data, giving much improved coverage for market services. Collection of trade in services data has also seen a significant improvement with the introduction of the ITIS survey from 1996.

Other more recent developments include the monthly IoS which will soon be published to National Statistics standards for most service industries at 2-digit SIC level, with outputs being available from 2002. This has included a comprehensive quality review for all 2-digit industries, with a number of improvements in the collection of data and the quality of outputs. There have also been a number of improvements in services outputs for topics such as research and development, profitability and, most notably, labour market characteristics

through the LFS. These developments will be discussed in a further article.

While these developments are welcome, as summarised in Box 1, for some of the key recommendations from the review there is still the need for further developments or expansion of detail. This need has recently been highlighted by ONS following a consultation, which is still ongoing, on its priorities for its four-year work programme between 2008 and 2012. The report of the first stage of the consultation highlights the need for further work and resources for the development of service sector statistics (see ONS 2007b). This includes the development of detailed SPPIs, detailed sales product data through SERVCOM and the implementation of SIC 2007.

Resources may allow for the development of SERVCOM incrementally, with coverage built up over time and focusing initially on those sectors where SPPIs are considered to be most deficient. It is noted that the EU has recently completed a review of the products version of NACE (CPA) which includes a comprehensive list of service products (see Eurostat 2007). Service product data are needed to develop meaningful price deflators and the UK National Accounts would benefit from developing deflators for an extensive range of service industries.

There has been little progress in expanding outputs for productivity for the detailed service industries and to date there are only experimental series giving growth for all services and for distribution, hotels and restaurants, sections G–H. While BERR

is able to derive productivity estimates using published GVA and employment data for a number of detailed service industries, it is desirable that these are published by ONS in the longer term using consistent series. In addition, productivity estimates for detailed SIC industries can be estimated from ABI outputs; the result of such an analysis has recently been published by ONS (see Goodridge 2007). This will be discussed further in the future article on business services.

A number of ongoing developments at ONS will lead to further improvements in service sector outputs. These include National Accounts re-engineering, where it is proposed that the supply and use tables covering services industries and products are increased from the existing 35 to 97. As discussed in Box 3, the implementation of the new SIC 2007 classification between now and 2011 will also bring significant increases to the number of service industries for which data need to be collected and reported. The SIC 2007 review will also make welcome improvements for services at the section level, particularly for the existing section K, which currently lacks homogeneity in terms of the detailed industries covered in terms of size, productivity and skills.

BERR's needs for detailed industry outputs may be affected by quality; some limited quality data is already published for some surveys, for example ABI and ITIS outputs. To this end, it is desirable that ONS publishes more extensive quality measures, either directly in terms of standard errors or for other indicative measures. Recent reductions in sample sizes for a number of ONS business surveys have also affected the service industries, although in some cases methodological changes have helped to compensate for any reduction in quality. In the longer term, it is desirable to address the historical imbalance between services and non-services coverage and precision.

With the need to still expand and improve the quality of services outputs, consideration could be given to new approaches to supplement sample surveys. While the Presidential Task Force recommended the use of administrative data, experience in other areas may suggest caution and that this approach is not necessarily a panacea, usually requiring extensive resources to address quality and data-linking issues. Possible alternatives may be to use model-based estimates at the UK and subnational level, to improve existing survey estimates for detailed industry outputs which are of poorer

quality. Such an approach could build upon the successful work that ONS has recently done using model-based estimates for neighbourhood statistics, for example, unemployment data.

Finally, some immediate benefits could be gained by reviewing existing outputs from a number of sources, to publish data on a more coherent basis. For example, quarterly WFJ and annual ABI employment data are in some cases currently published on an inconsistent basis. Where possible, major developments should also ensure that past time series are updated to ensure that their start dates are consistent across outputs, for example, GVA and employment measures. These coherence issues could be considered as part of a wider remit of a possible services user group which may be organised by ONS to cover the development and implementation of a coordinated strategy for service sector outputs.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Avery V (2006) 'Understanding and improving National Statistics of employment and jobs', *Labour Market Trends* 114(3), pp 83–8 and at www.statistics.gov.uk/articles/labour_market_trends/emp_jobs_review.pdf

Beadle J (2007) 'Modernising the UK's National Accounts', *Economic & Labour Market Review* 1(4), pp 32–8 and at www.statistics.gov.uk/cci/article.asp?id=1737

Cave B (1997) 'The President's Task Force on Service Sector Statistics', *Economic Trends* 519, pp 71–7; see also 11th meeting of the Voorburg Group on Services Statistics, Newport, South Wales at www4.statcan.ca/english/voorburg/1996%20newport/papers/008019.pdf

Department of Trade and Industry (2004) 'Liberalisation and Globalisation: Maximising the Benefits of International Trade and Investment', DTI Economics paper No. 10, July 2004, and at www.dti.gov.uk/files/file14763.pdf

Drew S and Morgan D (2007) 'The launch of the Index of Services as a National Statistic', *Economic & Labour Market Review* 1(3), pp 39–46 and at www.statistics.gov.uk/cci/article.asp?id=1741

Eurostat (2007) 'CPA 2008: Structure and

explanatory notes', Eurostat paper, final draft, September 2007, and at http://circa.europa.eu/irc/dsis/nacecpacon/info/data/en/CPA%202008%20structure%20and%20explanatory%20notes.pdf

Goodridge P (2007) 'New labour productivity measures from the ABI – 1998 to 2005', *Economic & Labour Market Review* 1(9), pp 25–31 and, with addition data table at www.statistics.gov.uk/elmr/09_07/downloads/elmr09_07goodridge.pdf

Organisation for Economic Co-operation and Development (2005) 'Measuring Globalisation: OECD Economic Globalisation Indicators', 2005 at www.oecd.org/document/63/0,3343,en_2649_33703_35794687_1_1_1_1,00.html

Office for National Statistics (2001) 'Review of the Inter-Departmental Business Register', *National Statistics Quality Review Series*, Report No. 2, and at www.statistics.gov.uk/downloads/theme_commerce/idbrb_v2.pdf

Office for National Statistics (2006) 'Review of Employment and Jobs Statistics', *National Statistics Quality Review Series*, Report No. 44, and at www.statistics.gov.uk/about/data/methodology/quality/reviews/downloads/ejr_final.pdf

Office for National Statistics (2007a) 'Gross Value Added at 2000 Basic Prices: Sources, indicators, weights, deflators,' IOS methodology report at www.statistics.gov.uk/iosmethodology/downloads/source_ios.pdf

Office for National Statistics (2007b) 'Consultation Document on ONS Statistical Work Programme 2008-2012: Annex C12 New work package: Services statistics', October 2007 at www.statistics.gov.uk/about/consultations/downloads/consultationp2.pdf

Voorburg (2007) City group for the development and collection of service sector statistics, reports from 2007 meeting on prices at www.bok.or.kr/voorburg2007/

FEATURE

Andrew Walton, Robin Youll and Chris Hunt
Office for National Statistics

Planned methodological changes to the Index of Production

SUMMARY

In January 2008, as part of a wider reprioritisation of the Office for National Statistics' (ONS) business, the sample size for the Monthly Production Inquiry (MPI) will be reduced by 17 per cent. Of itself, the reduced sample size would lead to lower-quality estimates of the change in production output as published in the Index of Production (IoP) First Release. However, ONS will introduce a number of methodological changes in March 2008, including a reoptimisation of the MPI sample. These changes will maintain, and in some cases improve, the quality of the aggregate IoP indices. At the same time, the level of detail published for the IoP will be reduced, providing greater focus on the aggregate series. This article sets out the reasons for the methodological changes and their impact on the levels of detail which ONS will publish.

The Index of Production (IoP) is a monthly measure of the change in the volume of production of the manufacturing, mining and quarrying, and energy supply industries, which together represents around 18 per cent of the UK economy.

The IoP is published as an Office for National Statistics (ONS) First Release around 26 working days after the end of the reference month. The release presents indices of output for mining and quarrying, the oil and gas extraction industry, and seven broad industries within the manufacturing sector.

The IoP has three primary uses:

- as a short-term economic indicator in its own right. For example, HM Treasury and the Bank of England use the IoP to monitor short-term changes in industrial activity
- as a component of the production or output measure of gross domestic product (GDP). GDP measures the sum of the value added created through the production of goods and services within the economy. In this context, the IoP can be seen as a proxy for the short-term change in real value added of the production industries, and
- as a requirement for the Statistical Offices of the European Community (Eurostat). Information on production and current price sales are provided to Eurostat. These are used with data from other countries to create monthly indices for the whole of the European Union

Walton (2005) describes the current methodology used to compile the IoP.

Methods changes in detail

In March 2008, when the IoP estimates for January 2008 are published, a number of methodological changes will be introduced into the compilation methods used to construct the indices. These changes will offset the impact on the quality of the estimates following the reduction in the Monthly Production Inquiry (MPI) sample size planned for January 2008. This section outlines each of the changes. A separate article, planned for publication in *Economic & Labour Market Review* (ELMR) later in 2008, will assess the impact of each of these changes on the aggregate indices.

New aggregation structure

The current IoP is calculated for some 232 detailed industries. Historically, this level of detail was seen as necessary to provide a full understanding of the dynamics of the production sector. ONS reported on some analysis of the quality of the estimates at this level of detail in an earlier article in ELMR (Youll *et al* 2007). Broadly, the reason for the relatively poor quality of the detailed production industry estimates is the small sample sizes used in their estimation. The 17 per cent cut in the MPI sample in January 2008 will impact further on the quality of these detailed series. ONS has therefore considered the impact of this change on the level at which the IoP is compiled, and the levels of detail which it is appropriate to publish, given current

user needs for short-term indicators of the sector.

Appendix **Table A1** sets out the aggregation structure which will be used from March 2008 for the IoP. This structure is designed to improve the robustness of estimation at the aggregate two-digit level of the Standard Industrial Classification (SIC) and above. For example, in the current compilation system for the IoP, seasonal adjustment takes place at the most detailed level, for 223 series. At this level, the extent of sampling error (Youll *et al* 2007) can dominate the seasonal signal in the series. Better aggregate estimates can be achieved by seasonally adjusting at higher levels of aggregation. Similarly, the accuracy of the estimates themselves can be much improved by aggregating to a level at which sample sizes are sufficiently large to allow robust estimation.

This new industry structure is consistent with ONS longer-term plans for the introduction of a monthly short-term measure of the activity of the whole economy. This will include levels of detail for the manufacturing and services sectors appropriate to their relative contributions to economic output. The development of this whole economy indicator is planned as part of the wider re-engineering of the National Accounts which will take place during 2008 and 2009.

The introduction of the new industry structure in March 2008 will mean that the IoP estimates published currently for more detailed aggregates, say at the four-digit level of the SIC, will no longer be available. There will be similar, parallel, changes in the levels of detail which are published currently for estimates of turnover for the engineering sector based on the MPI itself.

Auxiliary variable

Estimates of the level of manufacturing turnover used within the IoP are calculated from the MPI sample using a 'combined ratio estimator'. Essentially this estimator scales, or 'weights', the turnover data collected in the MPI sample to a population total using information from ONS's Inter-Departmental Business Register. Part of the estimation process involves a scaling based on the level of what is called 'auxiliary' information from the register. Currently this scaling uses information on the level of employment of each business in the sample. The accuracy of this scaling can be improved by instead using turnover, with a consequent improvement in the accuracy of the overall estimation (that is, estimates will have a lower standard error). The

reason turnover is a more effective auxiliary variable follows from the fact that there is a closer correlation between businesses' reported monthly turnover and their registered turnover than there is with their registered employment.

Deflation

The IoP is a 'real' measure of changes in output, that is, it is adjusted for changes in prices, or deflated. The deflator used for the IoP is a composite, based on price changes of sales to the domestic market and, separately, export sales.

In March 2008 there will be some improvements to the approach used to calculate the deflator used for domestic sales. The current method is to take the weighted arithmetic mean of price indices for up to five products within an industry. The new method will use up to 20 products within an industry. This more detailed approach will improve the relevance of the price indices to the turnover of the industries being deflated.

The method used to calculate export deflators will remain largely unchanged.

Lagged deflators

The current IoP methodology adjusts the price deflators for 'timing effects' in some industries. For example, the sales price of goods which have been warehoused for some time may differ significantly from their 'price' (or production cost) at the time the goods were created. The current methodology attempts to adjust for such effects, and to calculate the effective price of goods at the time of production, rather than at the time of sale. ONS has studied the validity and relevance of lagging deflators in this way in the IoP and decided that the potential improvements in quality which might arise from lagging prices is outweighed by the difficulty in accurately measuring these effects. For example, a separate survey is required to evaluate the extent to which these lags occur, the most recent being in 1995. Furthermore, changes in the structure of the UK economy over the last 30 years have meant that there are many fewer industries with long time lags between order and delivery. The impact of lagging deflators on the IoP growth rates is also very small, and in most cases does not lead to changes in published growth rates. On the balance of evidence, therefore, ONS has decided to discontinue the lagging of deflators from March 2008.

Inventory adjustment

The IoP is designed as a measure of changes

in output. Output can be calculated as turnover less the change in inventories during the period being considered. The current methodology for the IoP therefore includes estimates of the change in inventories, calculated from a separate, quarterly, survey. The quarterly estimates of change in inventories are used to create a monthly series, by a method of temporal disaggregation called 'splining'.

The impact of the inventory adjustment on detailed IoP industries is generally quite small. However, economic theory suggests that, on average over time, this adjustment should lead to less volatile series, since the output or activity of businesses should, according to economic theory, be more stable than invoiced sales. Analysis in ONS of the impact of the inventory adjustment on the detailed IoP series indicates that this is not generally the case in practice, and that the inventory-adjusted series are very often more volatile than the unadjusted turnover series. This may be because the inventories estimates are derived from a separate sample survey, and so the degree of correlation between the turnover and inventories estimates is often quite small. Furthermore, the net impact on the aggregate IoP of these adjustments is generally very small.

As a result, ONS will drop inventory adjustments based on the quarterly inventories inquiry from March 2008. Instead, the IoP will take on adjustments for changes in inventories from the Annual Business Inquiry (ABI). The estimates of changes in inventories from this survey are more accurate than those based on the quarterly inquiry, and therefore provide a more robust basis for adjusting MPI turnover to an 'output' concept. As a result, in future, the IoP will be brought in line with estimates of the change in gross value added (GVA) from the annual National Accounts supply-use tables, which are based primarily on the ABI. The IoP will therefore remain conceptually a measure of the change in output, rather than sales. However, at the end of the series, changes in turnover will be used as a proxy for changes in output, until estimates based on supply-use tables are available.

Smoothing

For 13 industries, the production indices are smoothed to reduce the volatility of the series. Smoothing is a method for identifying the underlying movements in output, separately from the movements in recorded turnover, or inventory-adjusted turnover. For example, the production of an

aircraft will take place over a considerable period of time, whereas the sale will appear in only one period. Ideally, the work in progress associated with the production activity should be captured. In practice though, it is difficult for businesses to provide this information to ONS in the short term, and so estimates based on turnover are smoothed as a means of estimating the actual flow of activity over time. Following an analysis of the impact of smoothing on the aggregate IoP, from March 2008 this will be reduced to just five industries. Appendix **Table A2** sets out descriptions of the five industries that will be smoothed.

Merchanted goods

The IoP is adjusted currently for goods bought for resale, or 'merchanted goods' in 22 industries. The idea here is that some manufacturing businesses buy a proportion of their goods solely for the purpose of resale, without adding further value. In March 2008, this adjustment will be dropped from the IoP methodology, because analysis has shown that the adjustments have very little impact on the overall IoP. Further, the quality of the data on the extent of 'merchanting' is also an issue. As noted earlier, it is therefore planned in future to bring the IoP in line with annual estimates of the change in GVA from the National Accounts supply-use tables. This will provide a more direct basis for accounting for the impact of merchanted goods which may affect the short-term estimates.

Alignment of seasonally adjusted and non-seasonally adjusted series

Currently, each year, at the time of the release of the December estimates, the average level of the seasonally adjusted IoP is brought into line with that of the non-seasonally adjusted IoP. This ensures consistency in the annual growth rates (for example, 2006 compared with 2007). While consistency may be desirable from some perspectives, it will produce a less accurate measure of the seasonally adjusted change. This is particularly the case when seasonality is changing over time. In general, it is accepted that the best measure of the annual change is that based on the seasonally adjusted, rather than non-seasonally adjusted, series.

Therefore, from March 2008, ONS will no longer align the seasonally adjusted to the non-seasonally adjusted series in this way. Users of the IoP therefore need to be aware of the difference in the annual average of the seasonally adjusted and non-seasonally adjusted series. This new approach should considerably reduce the revisions which this alignment has caused over all months of the year, in the December and January releases.

Availability of historical series

The changes described in this article will, as noted earlier, impact on the published level of detail. They will also affect the historical period for which published estimates are available. From March 2008, series will be made available back to January 1998 for each 'industry' in the new industry structure described above. Series at the two-digit (division) level of the SIC will be available back to 1978. Quarterly and annual data for the higher level aggregates (SIC subsections, sections and above) will be available back to 1948, with monthly data available from 1968. Series based on four-digit SICs will no longer be available.

Further developments

This article describes methodological changes that will be introduced for the IoP in March 2008. A further article, planned to coincide with the release of the estimates based on these new methods, will be published in ELMR later in 2008, and will present an assessment of the impact of these changes on the IoP.

CONTACT

✉elmr@ons.gsi.gov.uk

REFERENCES

Walton A (2005) 'Methodology for the Index of Production' at www.statistics.gov.uk/articles/nojournal/iopmethodology.pdf

Walton A (2007) 'Summary Quality Report for the Index of Production' at www.statistics.gov.uk/statbase/product.asp?vlnk=6230

Youll R, Parkin N and Hunt C (2007) 'Measures of accuracy for the Index of Production', *Economic & Labour Market Review* 1(8), pp 24–8 and at www.statistics.gov.uk/cci/article.asp?id=1842

APPENDIX A

Table A1
New IoP industry structure

New industry aggregate			Current industry structure SIC		
Code	Description	SICs	Class	Subsection	Section
1	Mining of coal and lignite; extraction of peat	10	10101 10102 10103	CA	C
2	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying	11	11102 11105 11107 11202 11203	CA	C
3	Mining of uranium and thorium ores; mining of metal ores; other mining and quarrying	12–14	1200 1300 1410 1421 1422 1430 1490	CB	C
4	Production, processing and preserving of meat and meat products	15.1	1511 1512 1513	DA	D
5	Processing and preserving of fish and fish products, fruit and vegetables	15.2–15.3	1520 1531 1532 1533	DA	D
6	Manufacture of vegetable and animal oils and fats	15.4	1541 1542 1543	DA	D
7	Manufacture of dairy products	15.5	1551 1552	DA	D
8	Manufacture of grain mill products, starches and starch products	15.6	1561 1562	DA	D
9	Manufacture of prepared animal feeds	15.7	1571 1572	DA	D
10	Manufacture of bread, fresh pastry goods, cakes, rusks, biscuits and preserved pastry goods and cakes	15.81–15.82	1581 1582	DA	D
11	Manufacture of sugar, cocoa, chocolate and sugar confectionery	15.83–15.84	1583 1584	DA	D
12	Manufacture of macaroni, noodles, couscous, similar farinaceous products, condiments, seasonings and other food products not elsewhere classified; processing of tea and coffee	15.85–15.89	1585 1586 1587 1589	DA	D
13	Manufacture of wines, cider, other fruit wines and beer	15.93, 15.94, 15.96	1593 1594 1596	DA	D
14	Manufacture of malt and distilled potable alcoholic beverages; production of ethyl alcohol from fermented materials	15.97, 15.99	1597 1599	DA	D
		15.98	1598	DA	D
16	Manufacture of tobacco products	16	1600	DA	D
17	Preparation and spinning of textile fibres; textile weaving; finishing of textiles	17.1–17.3	1710 1720 1730	DB	D
18	Manufacture of made-up textile articles, except apparel; manufacture of other textiles, knitted and crocheted fabrics, knitted and crocheted articles	17.4–17.7	1740 1751 1752 1753 1754 1760 1771 1772	DB	D

Table A1- *continued*
New IoP industry structure

New industry aggregate			Current industry structure SIC		
Code	Description	SICs	Class	Subsection	Section
19	Manufacture of wearing apparel, dressing and dyeing of fur	18	1821 1822 1823 1824 1830	DB	
20	Manufacture of leather and leather products	19	1910 1920 1930	DC	
21	Manufacture of wood and wood products	20	2010 2020 2030 2040 2051 2052	DD	
22	Manufacture of pulp, paper and paperboard	21.1	2110		
23	Manufacture of articles of paper and paperboard	21.2	2121 2122 2123 2124 2125		
24	Publishing of books	22.11	2211		
25	Publishing of newspapers	22.12	2212		
26	Publishing of journals and periodicals	22.13	2213	DE	
27	Publishing of sound recordings; other publishing	22.19	2219		
28	Printing and service activities related to printing; reproduction of recorded media	22.2–22.3	2221 2222 2223 2224 2225 2239		D
29	Manufacture of coke, refined petroleum products and nuclear fuel	23	2310 23201 23209 2330	DF	
30	Manufacture of industrial gases, dyes and pigments	24.11–24.12	2411 2412		
31	Manufacture of other inorganic basic chemicals and other organic basic chemicals	24.13–24.14	2413 2414		
32	Manufacture of fertilisers, nitrogen compounds, plastics in primary forms, synthetic rubber in primary forms, pesticides and other agro-chemical products	24.15, 24.16, 24.17, 24.2	2415 2416 2417 2420		
33	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	24.3	2430		
34	Manufacture of pharmaceuticals, medicinal chemicals and botanical products	24.4	2441 2442	DG	
35	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	24.5	2451 2452		
36	Manufacture of other chemical products and man-made fibres	24.6–24.7	2461 2462 2463 2464 2465 2466 2470		
37	Manufacture of rubber products	25.1	2511 2512 2513	DH	

Table A1- *continued*
New IoP industry structure

New industry aggregate			Current industry structure SIC		
Code	Description	SICs	Class	Subsection	Section
38	Manufacture of plastic products	25.2	2521 2522 2523 2524	DH	
39	Manufacture of glass and glass products	26.1	2611 2612 2613 2614 2615	DI	
40	Manufacture of non-refractory ceramic goods other than for construction purposes, refractory ceramic products and ceramic tiles and flags	26.2–26.3	2621 2622 2626 2629 2630		
41	Manufacture of bricks, tiles and construction products, in baked clay; manufacture of cement, lime and plaster	26.4–26.5	2640 2650		
42	Manufacture of articles of concrete, plaster and cement; cutting, shaping and finishing of stone; manufacture of other non-metallic mineral products	26.6–26.8	2661 2662 2663 2669 2670 2681 2682		
43	Manufacture of basic metals	27	2710 2722 2731 2732 2721 2733 2739 2741 2742 2743 2744 2745 2751 2752 2753 2754	DJ	D
44	Manufacture of structural metal products	28.1	2811 2812		
45	Manufacture of tanks, reservoirs, containers of metal, central heating radiators, boilers and steam generators, except central heating hot water boilers	28.2–28.3	2821 2822 2830		
46	Forging, pressing, stamping and roll forming of metal; powder metallurgy; treatment and coating of metals; general mechanical engineering	28.4–28.5	2840 2851 2852		
47	Manufacture of cutlery, tools and general hardware	28.6	2861 2862 2863		
48	Manufacture of other fabricated metal products	28.7	2871 2872 2873 2874 2875		
49	Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines	29.1	2911 2912 2913 2914	DK	

Table A1- *continued*

New IoP industry structure

New industry aggregate			Current industry structure SIC		
Code	Description	SICs	Class	Subsection	Section
50	Manufacture of other general purpose machinery	29.2	2921 2922 2923 2924	DK	D
51	Manufacture of agricultural and forestry machinery	29.3	2931 2932		
52	Manufacture of machine tools	29.4	2940		
53	Manufacture of other special purpose machinery	29.5	2951 2952 2953 2954 2955 2956		
54	Manufacture of weapons and ammunition	29.6	2960		
55	Manufacture of domestic appliances not elsewhere classified	29.7	2971 2972		
56	Manufacture of office machinery and computers	30	3001 3002	DL	
57	Manufacture of electric motors, generators and transformers	31.1	3110		
58	Manufacture of electricity distribution and control apparatus; manufacture of insulated wire and cable	31.2–31.3	3120 3130		
59	Manufacture of accumulators, primary cells, primary batteries, lighting equipment, electric lamps and electrical equipment not elsewhere classified	31.4–31.6	3140 3150 3161 3162		
60	Manufacture of electronic valves and tubes and other electronic components	32.1	3210		
61	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	32.2	3220		
62	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	32.3	3230		
63	Manufacture of medical and surgical equipment and orthopaedic appliances	33.1	3310		
64	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes	33.2–33.3	3320 3330		
65	Manufacture of optical instruments and photographic equipment;	33.4–33.5	3340 3350		
66	Manufacture of motor vehicles	34.1	3410	DM	
67	Manufacture of bodies (coachwork) for motor vehicles, trailers and semi-trailers, parts and accessories for motor vehicles and their engines	34.2–34.3	3420 3430		
68	Building and repairing of ships and boats	35.1	3511 3512		
69	Manufacture of railway and tramway locomotives and rolling stock	35.2	3520		
70	Manufacture of aircraft and spacecraft	35.3	3530		
71	Manufacture of motorcycles, bicycles and other transport equipment not elsewhere classified	35.4–35.5	3541 3542 3543 3550		
72	Manufacture of furniture	36.1	3611 3612 3613 3614 3615	DN	
73	Manufacture of jewellery, related articles and musical instruments	36.2–36.3	3620 3630		
74	Manufacture of sports goods, games and toys	36.4–36.5	3640 3650		

Table A1- *continued*

New IoP industry structure

New industry aggregate			Current industry structure SIC		
Code	Description	SICs	Class	Subsection	Section
75	Miscellaneous manufacturing not elsewhere classified	36.6	3661 3662 3663	DN	D
76	Recycling	37	3700		
77	Production and distribution of electricity	40.1	4010		
78	Manufacture of gas; distribution of gaseous fuels through mains	40.2	4020	E	E
79	Collection, purification and distribution of water	41	4100		

Source: Office for National Statistics

Table A2

Smoothed industries in the IoP

New industry aggregate (SICs)	Industry description
16	Manufacture of tobacco products
23.3	Processing of nuclear fuel
35.1	Building and repairing of ships and boats
35.2	Manufacture of railway and tramway locomotives and rolling stock
35.3	Manufacture of aircraft and spacecraft

Source: Office for National Statistics

Sarah Levy and David Miller
Office for National Statistics

The Occupational Pension Schemes Survey 2006

SUMMARY

This article presents findings on the number of occupational pension schemes in 2006, their membership and contributions to schemes by employers and employees. It is based on the Occupational Pension Schemes Annual Report (2006 edition). The findings distinguish between public and private sector schemes and include breakdowns by scheme status (open, closed, frozen or winding up), by benefit structure (defined benefit and defined contribution) and by size band. The 2006 results are compared with the findings of earlier occupational pension scheme surveys carried out by the Government Actuary's Department.

This article presents the results of the most recent survey of occupational pension schemes, which was run for the first time by the Office for National Statistics (ONS) in 2006 after it took over the role from the Government Actuary's Department (GAD) in 2005. The aim of the survey is to provide a picture of occupational pension scheme provision in the UK. It does not cover personal (including stakeholder) pensions, whether individual or group personal pensions.

The sample for the Occupational Pension Scheme Survey (OPSS) was selected at random from the list of pension schemes held by the Pensions Regulator as of July 2006. In the private sector, the sample was stratified according to the number of members in a scheme, and higher sampling fractions were used for schemes in larger size bands. In the public sector, the number of schemes was far smaller than in the private sector, so all public sector schemes were included in the survey. The quality of the responses in the completed questionnaires was good, and strong response rates (79 per cent for private sector and 91 per cent for public sector schemes) contributed to the overall reliability of the survey results. Private sector schemes in the lowest size band (fewer than 12 members) had greater uncertainty due to a relatively small sample and lower response rates. These schemes account for 79 per cent of total scheme numbers but less than 1 per cent of scheme membership.

The policy context

In recent years, with people living longer, there has been growing concern about the capacity of the pension system to provide adequate pensions in retirement. The UK has relatively modest state pension provision by international standards, but traditionally this has been balanced by strong private pension provision. Since the Second World War, the most important component of private pension provision has been occupational pension schemes, which have been documented by the OPSS since 1953.

Most occupational schemes established in the 1950s and 1960s were 'defined benefit' schemes. The employer uses employer and employee contributions to build up a fund out of which the employee's pension will be paid on retirement. The employee's pension entitlement is unaffected by changes in the value of the fund, except in the case where the fund becomes too small to meet the

---

Box 1

Occupational pension schemes

An occupational pension scheme is an arrangement (other than accident or permanent health insurance) organised by an employer, or on behalf of a group of employers, to provide benefits for employees on their retirement and for their dependants on their death.

Box 2
Defined benefit and defined contribution

The benefit structure of an occupational pension scheme may be 'defined benefit' or 'defined contribution':

- defined benefit schemes are those in which the rules specify the rate of benefits to be paid. The most common defined benefit scheme is a salary-related scheme in which the benefits are based on the number of years of pensionable service, the accrual rate and either final salary, the average of selected years' salaries or the best year's salary within a specified period before retirement
- a defined contribution scheme is one in which the benefits are determined by the contributions paid into the scheme, the investment return on those contributions, and the type of annuity purchased on retirement. Defined contribution schemes are also known as money purchase schemes
- some schemes offer benefits to one group of members on a defined benefit basis and another group of members on a defined contribution basis. In the survey, where a scheme had more than one section, each section was classified separately as either defined benefit or defined contribution, according to the benefits it offered

Box 3
Scheme status

The status of an occupational pension scheme may be open, closed, frozen or winding up:

- an open scheme admits new members
- a closed scheme does not admit new members but may continue to receive contributions from, or on behalf of, existing members who continue to accrue pension rights
- in a frozen scheme, benefits continue to be payable to existing members but no new members are admitted, and no further benefits accrue to existing members. Members can make no more contributions but further employer contributions may be made
- a scheme that is winding up is in the process of termination, either by buying annuities for the beneficiaries or by transferring assets and liabilities to another scheme

scheme liabilities. It is the employer who bears the full risk of market volatility.

In recent years, defined benefit schemes have become increasingly unpopular with private sector employers because they tend to be associated with high employer contributions, and they involve considerable investment risk. If the market underperforms against expectations, the scheme develops a deficit which has to be met with additional employer contributions. As life expectancy rises, pensions have to be paid out for longer and financial pressures increase. These concerns have lead to many closures of defined benefit schemes and the growing popularity of defined contribution schemes. In defined contribution schemes, the only predictable element for the employee is the contributions made into the scheme: the individual's pension depends on investment performance. Thus, the employee bears the full risk of market volatility.

The OPSS provides evidence of the decline of defined benefit schemes in the private sector. It also shows that regular contribution rates are lower for defined contribution than for defined benefit schemes. In 2004, the Pensions Commission pointed out that closures of defined benefit schemes and their replacement with defined contribution schemes with lower contribution rates could lead to a significant fall in the pension savings/GDP ratio.

The OPSS shows that total membership of private sector occupational pension schemes has fallen rapidly in recent years. Employees may choose not to join available defined contribution schemes because of the relatively low employer contribution rates (high rates are an important incentive to join) and high levels of individual investment risk. Automatic enrolment is less common for defined contribution schemes than for defined benefit schemes, as the OPSS results show, so most employees have to make a decision to opt in. As noted in the Pension Commission's

First Report, there is a high degree of inertia with regards to financial decision making, especially so for pensions. Therefore, schemes with an opt-in policy are likely to have lower participation rates than schemes with automatic enrolment.

As a result of concerns about pension adequacy and coverage explored by the Pensions Commission in their 2004 and 2005 reports, the Government has introduced a number of reforms. The Pensions Act 2007 and a pensions bill introduced into Parliament in December 2007 aim to introduce a new type of occupational pension scheme known as the 'personal accounts scheme'. Personal accounts will be a defined contribution scheme for those aged over 22 and earning above £5,000 per year. Employers will have to enrol all eligible employees into a personal account scheme or an alternative occupational pension scheme and contribute a minimum of 3 per cent (on a band of earnings) to employees' pensions. Employees will contribute 4 per cent and will receive around 1 per cent from the Government in the form of tax relief. Employees will be enrolled automatically, but will be able to opt out if they actively decide to do so.

According to the Department for Work and Pensions, personal accounts are designed to address the problem of undersaving for retirement by around 7 million people in the UK. The automatic enrolment and minimum employer contribution features should help to attract new members into occupational pension schemes. For ONS, a key challenge will be to adapt the OPSS methodology, and that of other surveys, to monitor the impact of the new system of personal accounts and of automatic enrolment.

Scheme numbers

The total number of occupational pension schemes in the UK fell from 105,320 in 2000 to 66,710 in 2006. The number of occupational pension schemes which were open to new members was 37,540 in 2006, 60 per cent of the number open in 2000. In the top two size bands (membership of 5,000 or more), half of all schemes were closed to new members in 2006.

Most large, closed private sector schemes were either defined benefit or multi-section schemes. Over 90 per cent of open single section private sector schemes were defined contribution; most of these were very small schemes. The number of open single section private sector defined benefit schemes has fallen sharply in recent years, from 18,350

Figure 1
Number of open single section private sector occupational pension schemes[1]

United Kingdom
Thousands
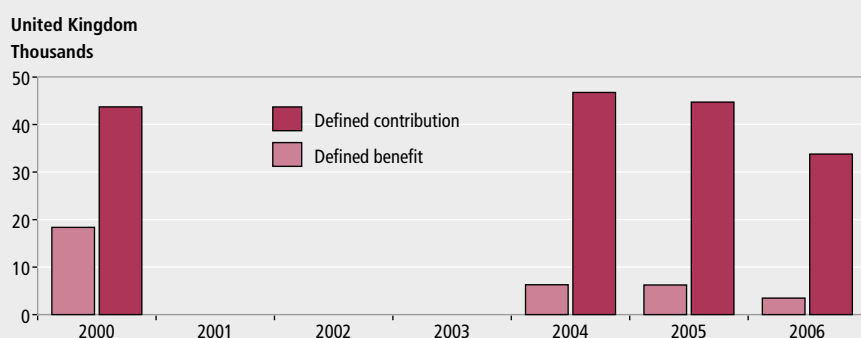
Note:
1 There were no surveys in 2001 to 2003.
Source: Occupational Pension Schemes Survey 2006, Office for National Statistics

Box 4
Membership types

Occupational pension schemes can have three types of members:

- active members – current employees who would normally contribute (or have contributions made on their behalf) to the pension scheme
- pensioner members – those currently receiving pension payments from the scheme; this category excludes pensioners who have had annuities bought in their own name
- deferred members – former employees who have preserved their pension entitlements within a scheme but are not yet receiving pension payments. This category includes widows and widowers, dependants, and former spouses who have gained rights following divorce

Figure 2
Number of active members of occupational pension schemes[1,2,3]

United Kingdom
Millions
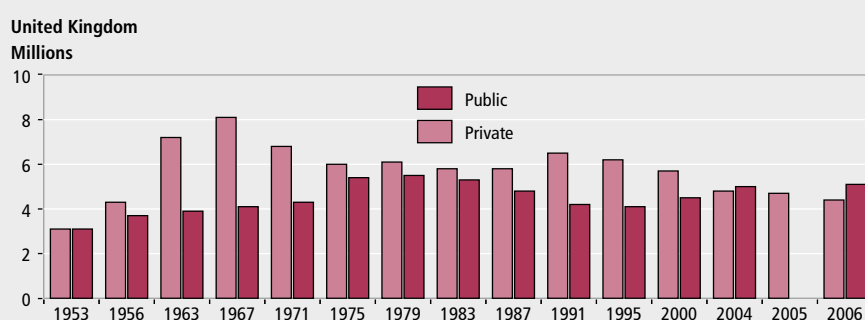
Notes:
1 The 2005 survey did not cover public sector.
2 Excludes frozen schemes.
3 Due to changes in the definition of the private and public sectors, estimates for 2000 onwards differ from earlier years. From 2000, organisations such as the Post Office and the BBC were reclassified from the public to the private sector.
Source: Occupational Pension Schemes Survey 2006, Office for National Statistics

in 2000 to 3,470 in 2006 (**Figure 1**).

Since 2000, there has been little change in the total number of public sector schemes (310 in 2006), but a big increase in numbers of closed public sector schemes. The number of open public sector schemes fell from 250 in 2000 to 130 in 2006, while closed schemes rose from 36 in 2000 to 110 in 2006.

Scheme membership

In 2006, 16.6 million members belonged to private sector and 10.9 million to public sector schemes. After a marked increase in the number of active members (current employees) between 1953 and 1967, there has been a steady decline. In 2006, there were an estimated 9.6 million active members, of whom 4.4 million were in the private sector, compared with 6.5 million in 1991 and 8.1 million at the peak in 1967 (**Figure 2**). Over the last 15 years, the decline in private sector active membership reflects a fall in active membership of defined benefit schemes, from 5.6 million in 1991 to 3.3 million in 2006.

In 2006, most active members of public sector defined benefit and private sector defined contribution schemes were in open schemes, but under half of the active members of private sector defined benefit schemes were in open schemes.

Schemes are not permitted to make membership compulsory, but it is possible for any scheme to make all new employees members of their pension scheme (automatic enrolment), provided that the employees are given the right to opt out of the scheme. The proportion of active members belonging to private sector defined benefit schemes which automatically enrol all new employees increased from 47 per cent in 2004 to 61 per cent in 2006, but there has been little change in the proportion of active members belonging to private sector defined contribution schemes which automatically enrol all new employees (28 per cent in 2006).

In contrast with the private sector, active membership of public sector schemes rose from 4.2 million in 1991 to 5.1 million in 2006, despite the reclassification of some large public sector schemes to the private sector from 2000. This is largely due to the increase in public sector employment over this period, which would – all other things being equal – lead to an increase in active membership of pension schemes. Public sector schemes provide relatively strong incentives to join as they are predominantly defined benefit, with relatively high employer contributions; they also have high levels of automatic enrolment.

The number of deferred members rose from 2.8 million in 1983 to 9.4 million in 2006. After increasing in every survey from 1953 to 1995, the number of pensions in payment has stabilised in recent years; the estimated total number in 2006 was 8.5 million.

Contributions to schemes

Generally, both members and employers make regular contributions to pension schemes. The OPSS results are for regular contributions; they do not include special contributions, for instance to cover a deficit. The 2006 OPSS found that almost all employers made regular contributions, but

Box 5

Contracting out

Contracting out refers to the statutory arrangement under which schemes that meet certain conditions may contract out of the additional component of the state pension, S2P, previously the State Earnings Related Pension Scheme. Members' and employers' National Insurance contributions are reduced or partially rebated for contracted out schemes. Members of a contracted out pension scheme obtain rights in the pension scheme in place of additional earnings related benefits under the state scheme.

Table 1

Weighted average contribution rates for private sector occupational pension schemes: by benefit type, contributor and status,[1,2]

United Kingdom						Percentages
	Member		Employer		Total	
Scheme type	Open	Closed	Open	Closed	Open	Closed
Defined benefit						
2004	4.6	3.9	12.1	17.1	16.8	21.0
2005	4.9	3.6	13.9	18.8	18.8	22.4
2006	4.9	4.5	14.2	15.0	19.2	19.5
Defined contribution						
2004	2.9	3.1	6.2	4.2	9.1	7.3
2005	2.7	2.6	6.0	8.0	8.7	10.6
2006	3.0	2.5	5.8	5.4	8.9	7.8

Notes:

1 Includes schemes with zero contributions.
2 Schemes with 12 or more members.

Source: Occupational Pension Schemes Survey 2006, Office for National Statistics

15 per cent of members of defined benefit schemes and 13 per cent of members of defined contribution schemes did not make regular contributions.

The 2006 OPSS examined contribution rates to schemes with 12 or more members that were either open or closed. One clear difference between private sector defined benefit and defined contribution schemes in 2006 was that contribution rates to defined benefit schemes were considerably higher than to defined contribution schemes (**Table 1**). However, it should be noted that the majority of defined contribution schemes are not contracted out of the State Second Pension (S2P) and are therefore making higher National Insurance contributions than for defined benefit schemes, which are mainly contracted out of the S2P. In addition, defined benefit schemes tend to offer better benefits, such as ill-health retirement or pensions to dependants, which are usually funded by higher contribution rates.

The OPSS 2006 provides evidence that the gap between contributions to defined benefit and defined contribution schemes has widened. Between 2004 and 2006, member plus employer contribution rates to open private sector defined benefit schemes increased from 16.8 per cent to 19.2 per cent; there was little change for open private sector defined contribution schemes.

Conclusion

The 2006 OPSS found that the number of occupational pension schemes continues to fall, as does membership of private sector schemes. Over the last 15 years, the decline in private sector membership reflects a fall in membership of defined benefit schemes, as closures of such schemes continue. Meanwhile, contribution rates to private sector defined contribution schemes remain low compared with rates for defined benefit schemes and relatively few defined contribution schemes practice automatic enrolment.

The OPSS findings reinforce concerns about pension adequacy and coverage highlighted by the Pensions Commission, which have given added impetus to the Government's drive on pensions reform. For ONS, the pensions legislation establishing the system of 'personal accounts' creates challenges. The OPSS methodology will need to evolve to document this new occupational pension scheme.

CONTACT

✉ elmr@ons.gsi.gov.uk

FEATURE

Peter Goodridge
Office for National Statistics

Multi-factor productivity: estimates for 1997 to 2006

SUMMARY

This article presents multi-factor productivity (sometimes referred to as total factor productivity or growth accounting), results for 1997 to 2006, using an experimental quality-adjusted labour input measure and experimental estimates of capital services growth as inputs. The analysis has been produced for the whole economy, some broad industry groupings and, for the first time, the market sector, with the aim of better understanding the UK's productivity performance over this period and of using the results as a diagnostic check on the consistency of output and input data.

Annual publication of multi-factor productivity (MFP) estimates is an important development for productivity analysis in the Office for National Statistics (ONS) since the framework applied – the growth accounting framework – provides a better understanding of the contributions to output growth (gross value added – GVA[1]) by showing how much is due to growth in labour, in terms of hours actually worked or its quality, and how much is due to growth in capital, for example, by increased use of plant and machinery, information and communication technology (ICT) or any other form of capital. The residual of output growth that cannot be explained by growth in these inputs is referred to as MFP.

Traditionally, this residual is thought to capture technical change, but in practice it also captures a number of other effects including improvements in management techniques and processes, improvements in the skill level of the workforce not captured by the quality adjustment of labour, and returns from intangibles such as research and development (R&D) knowledge or organisational know-how. The MFP term will also include the contributions of omitted inputs over and above their cost of purchase (such as energy, materials and services), adjustment costs, economies of scale, cyclical effects, inefficiencies and errors in the measurement of output.

The measures of labour and capital used in these MFP calculations attempt to more accurately measure the contributions of labour and capital to production by using data on their user costs (wages and rental prices, respectively) to adjust their input, giving a more accurate picture of what has been driving GVA growth over this period. Also, the quality adjustment process applied to the labour measure means some insight can be gained into the contribution of labour composition or skills. Skills are listed as one of the five key drivers of productivity by the Department for Business, Enterprise and Regulatory Reform and HM Treasury, and is part of the Government's policy to improve the skill level of the UK workforce and thus help reduce the productivity gap with the USA and other industrialised nations. The results in this article not only estimate MFP, but go on to estimate the contribution of skills by splitting out the contribution of labour productivity into the contribution of the volume of hours plus the contribution of labour composition.

Another reason analysts are interested in MFP lies in the increased use of ICT and its effects, which are frequently cited as an explanation for the acceleration in the productivity performance of the USA in the 1990s. Observers of this phenomenon are interested to know whether the UK has experienced any such surge in productivity growth as a result of increased use of ICT. As well as hardware – physical ICT capital – there has been considerable growth in investment in software, both purchased and own-account (developed in-house by the firm), which can assist both product and process innovation, particularly in the service sector.

Software is an intangible asset, that is,

one that does not have a physical, material existence. It is one of the few intangible assets included in National Accounts investment figures, although it will soon be joined by R&D, provisionally recorded in a satellite account (Galindo-Rueda 2007). Other intangible assets that are not included in the estimates of capital, mainly because of their nature and the difficulty in measuring them, are brand equity, firm-specific human capital, organisational capital and other forms of innovative expenditure such as design. Since expenditure in these categories is not measured in the official National Accounts investment series, its contribution will also be present in the MFP residual. However, there is now a body of work attempting to measure such investments and investigate their productivity effects (see for example Giorgio Marrano, Haskel, and Wallis 2007).

MFP analysis is also a useful tool for checking the consistency of output and input data and identifying measurement issues in these areas. For instance, a persistent decline in MFP growth is not compatible with a sector that is consistently growing in terms of its output. This is particularly relevant to service sector industries, especially financial intermediation and business services, and also public services, where output is believed to be underestimated due to inherent measurement difficulties in these sectors. It is these sectors where quality improvement in output is most prevalent, but also most difficult to capture in official output data. The analysis suggests negative MFP growth in, among others, the public and personal services sectors. This may be due to the failure to capture changes in quality in these sectors.

This article presents MFP results for the period 1997 to 2006. The work is a result of the ONS strategy on productivity first published in April 2002 (Lau 2002) and revised in August 2006 (Camus and Lau 2006). For the first time, market sector estimates have also been produced due to developments in the input measures. However, due to the short back-series on labour input specifically for the market sector, its estimates only refer to 2001 to 2006.

Growth accounting

Growth accounting apportions growth in output to growth in the factor inputs, capital and labour, and growth in a residual. Therefore, if the growth rate of output is greater than the growth in contributions of the factor inputs, then the residual can be interpreted as an approximation of growth

in 'disembodied technical change', that is, advances in technology not specifically embodied in either input. This represents an increase in MFP. Examples of such a change are increased knowledge through R&D or improvements in organisational structure or management. In general, it captures any improvement in output that is not driven by the factor inputs, capital and labour. It should be noted that the MFP term does not include 'embodied technical change', that is, advances in the quality of capital or other inputs, which are already captured when calculating their contribution. An example of this would be the rapid improvement in the quality of ICT over the last 20 years.

In a sense, MFP growth can be thought of as increased efficiency. This can be achieved in a number of different ways. For instance, if a firm changes its organisational structure and this results in increased efficiency, then this can be thought of as MFP. The increase in productivity is not due to an increase in the quantity or quality of capital or labour but instead an improvement in how they are employed. Another potentially important source of MFP growth is the extent of unobserved differences in the use of ICT. For instance, consider two firms that invest equally in ICT, but one employs it better to link its business processes so that sales, stock replenishment, customer service resources and marketing are all automatically linked with no need for manual intervention. Although they have made the same investment in ICT capital, the way it has been used means one firm enjoys a much greater boost in productivity. This also illustrates that MFP can be the result of the combination of capital and the skill level of the workforce or management.

Methodology

The inputs used for this analysis are the experimental quality-adjusted labour input measure (QALI) and the volume index of capital services (VICS). Detail on the methodology and calculation of the input data can be found in Dey-Chowdhury and Goodridge (2007) for QALI, and Wallis and Dey-Chowdhury (2007) for VICS.

A standard Cobb-Douglas production function, as shown in equation (1), states that output is a function of capital (K), labour (L) and a generic term (A) which represents disembodied technical change (MFP) and some other factors discussed previously:

$$Y(t) = A(t)K^{\alpha K}(t)L^{\alpha L}(t) \qquad (1)$$

Therefore, in continuous time, growth in output can be represented as a share-weighted sum of growth in capital, labour and the Solow residual (A) (Solow 1957), as shown in equation (2):

$$\frac{\dot{Y}(t)}{Y(t)} = \frac{\dot{A}(t)}{A(t)} + \alpha_K \frac{\dot{K}(t)}{K(t)} + \alpha_L \frac{\dot{L}(t)}{L(t)} \qquad (2)$$

where αK and αL are the output elasticities for capital and labour, respectively. Since a Cobb-Douglas production function has been used with the assumption of constant returns to scale, αK and αL sum to one. Under the assumptions of perfect competition, firms will hire labour and invest in capital up to the point where its rental price or wage equals its marginal product (that is, the marginal value of what it produces). Therefore the coefficient for capital, αK, is equal to the share of income that accrues to capital, captured by 'gross operating surplus' (GOS) in the National Accounts, and the corresponding coefficient for labour equals its share as captured by 'compensation of employees' (CoE). A slight adjustment is made for self-employed income as it is contained in the series 'mixed income', but this issue is discussed later in the article in the section Output and factor income shares.

More generally, in discrete time, we can approximate GVA growth between two periods, t-1 and t, as follows:

$$\Delta \ln Y(t) = [1 - \overline{s}_L(t)]\Delta \ln K(t) + \overline{s}_L(t)\Delta \ln L(t) + \Delta \ln A(t) \qquad (3)$$

This states that growth in log GVA is equal to an average of growth in log capital input weighted by the capital income share and growth in log labour input weighted by the labour income share plus growth of disembodied technical change – the MFP residual.

More specifically, $\overline{s}_{L(t)}$ is the average of the labour share of total income in the current and previous period, and the weight for capital is simply one minus the share for labour. So:

$$\overline{s}_L(t) = [s_L(t) + s_L(t-1)]/2 \qquad (4)$$

Therefore the actual calculation is simply a rearrangement of equation (3):

$$MFP\ growth = \Delta \ln Y(t) - [1 - \overline{s}_L(t)]\Delta \ln K(t) - \overline{s}_L(t)\Delta \ln L(t) \qquad (5)$$

The advantage of using QALI over a standard labour input measure is that the contribution of skills is captured, at least partially, and is not attributed to a change in MFP. In practice, some of the quality changes in labour and capital will

still be present in the MFP term. Also, if the factor income shares are inaccurate approximations of the elasticities in the production function, then there will be errors in the estimation of the factor contributions and therefore MFP.

The same technique can be used to decompose labour productivity growth into the contributions of physical capital deepening (capital income share multiplied by growth in physical capital per hour worked), labour composition (skills or the 'quality adjustment' made during the production of QALI) and MFP growth, as shown in equation (6):

$$\Delta \ln \left[\frac{Y(t)}{H(t)} \right] = [1 - \bar{s}_L(t)] \Delta \ln \left[\frac{K(t)}{H(t)} \right]$$
$$+ \bar{s}_L(t)[\Delta \ln L(t) - \Delta \ln H(t)] + \Delta \ln A(1) \qquad (6)$$

where H(t) and L(t) represent standard and quality-adjusted hours respectively. A standard aggregation of hours treats labour as a homogenous input, whereas the use of a quality-adjusted measure explicitly recognises the heterogeneity of labour and uses its profile in terms of education, experience, sex and industry to measure the added value it generates. This is done by weighting hours growth according to the share of different worker types in the overall wage bill, relying on the assumption of competitive markets where workers are paid according to their marginal product.

Source data

Labour input
The data source for the labour input measure, QALI, is the Labour Force Survey (LFS) which is a continuous household-based survey that covers approximately 53,000 households every quarter. It contains information on educational attainment, industry, sex and age. Under the assumption that different worker types have differing levels of marginal productivity, labour hours are adjusted with regard to these characteristics. For detail on the quality adjustment process and why these characteristics have been chosen please see Dey-Chowdhury and Goodridge (2007). The labour input data used is the same as that contained in Dey-Chowdhury and Goodridge (2007), and is available in more detail at www.statistics.gov.uk/statbase/product. asp?vlnk=14206

Capital services
Details on the calculation of capital services (VICS) and the latest estimates can be found in Wallis and Dey-Chowdhury (2007). It should be noted that VICS

differs from growth in the net capital stock measure in the National Accounts because VICS uses rental costs rather than asset prices to weight together assets. The main asset types are buildings, plant and machinery, vehicles and intangibles. Computers, and now both purchased and own-account software (Wallis and Dey-Chowdhury 2007), are separated out of plant and machinery and intangibles and given shorter life-lengths, and hence higher depreciation rates, to ensure their productivity input is more accurately captured.

Output and factor income shares
The output measure used in this article is GVA at basic prices, an annually chain-linked volume measure, last rebased in 2003 and consistent with that published in *Blue Book* 2007, but without the adjustments made as part of the National Accounts balancing process. Actual and imputed rents of owner-occupied dwellings are removed from GVA as they are not a true measure of output, and dwellings are not part of the productive capital stock. Therefore they are removed to ensure consistency with the capital input data.

Since balancing and coherence adjustments are applied at divisional level, and in some cases the market sector is made up of parts of different divisions rather than totals, the market sector GVA measure used contains adjustments made as part of National Accounts balancing.

Issues surrounding the calculation of labour's income share
In calculating the labour (and therefore the capital) share of total income, the numerator is equal to CoE from National Accounts plus the labour compensation of the self-employed. Since there is no National Accounts series for labour income of the self-employed, this has to be estimated – the National Accounts series for self-employed earnings is 'mixed income', which includes both the returns to capital and labour in the self-employed sector. There are two principle ways of splitting 'mixed income' to derive a labour income series for self-employed. The first is to use data from the LFS on the average hourly wage rate for the employed sector and multiply this by the total self-employed hours in each relevant sector, to generate a proxy for the compensation of the self-employed. The conceptual justification for this is that the result is based on the opportunity cost of their labour. Alternatively, mixed income can be split

using the relative proportions of CoE and GOS in the employed sector, assuming that capital and labour generate the same returns in the self-employed sector as they do in the employed sector.

The initial choice was to estimate labour income of the self-employed using microdata from the LFS. However, examination of the results showed that virtually all of mixed income was being allocated to labour, which would imply that capital generated zero returns – a nonsensical result. One possible explanation for this may be that self-employed income is under-reported for tax purposes and that much self-employed activity takes place in the hidden economy, so is not picked up in official figures. In addition, there does not appear to be any good reason to believe that capital would generate a lower return in the self-employed sector than in the employed sector. Because of these inconsistencies in the imputed returns to capital and labour in the self-employed sector, the method of using the proportions from the employed sector is used.

In the last publication, for quality assurance, and to reassure the user, the analysis was also produced using the alternative methodology and in practice it makes little difference to the final results, since mixed income is such a small component of total income. The results of this exercise are presented in the appendix at the end of the previous article (Goodridge 2007).

There are further issues with some of the data used to calculate income shares for 2005 and 2006. Industry breakdowns of GOS and mixed income are produced as part of the Input-Output analyses, and will not be published this year due to the National Accounts modernisation programme. Therefore, some breakdowns have been imputed based on the profile of the back series. This issue will be resolved in time for the next MFP publication.

Results
For the time period examined (1997 to 2006), approximately one-quarter of the output growth in the UK economy was due to growth in multi-factor productivity. In the market sector, for 2001 to 2006, the proportion was over one-third.

Figure 1 shows the decomposition of output growth into contributions from the factor inputs, capital and labour, and MFP growth. The contribution of labour has been split into two components, growth in hours and growth in labour composition, namely the growth of QALI not accounted for by

Figure 1
Decomposition of annual average output growth, 1997 to 2006 (2001 to 2006 for the market sector)

Percentages

Legend: ■ Capital input   ■ Labour input (hours)   ■ Labour quality   ■ MFP   ▲ Output

Table 1
Industry description

Industry	Industry description
ABCE	Agriculture, hunting, forestry, fishing, mining and quarrying, utilities
D	Manufacturing
F	Construction
GHI	Wholesale and retail trade, hotels and restaurants, transport storage and communications
JK	Financial intermediation, real estate, renting and business activities
LMNOPQ	Public administration and defence, education, health and social work, other social and personal services, and extra-territorial activities

growth in hours. For the whole economy, MFP growth is estimated to have been 0.8 per cent per annum between 1997 and 2006 compared with 0.9 per cent in the market sector (2001 to 2006). This partially reflects the way public sector GVA is measured in the National Accounts, which is still largely based on measures of labour input plus capital depreciation. For measures of public sector output based on outcomes that contain adjustments for quality, users should consult analysis produced by the UK Centre for the Measurement of Government Activity (UKCeMGA) at www.statistics.gov.uk/ukcemga

Table 1 provides a description of the sectors used in this analysis.

Looking at individual sectors, the strongest growth in MFP has occurred in manufacturing (D), though this is set against a contraction in labour input. There has also been strong growth in financial intermediation and business services (JK) and the combined sector of the distributive trades, transport and communications (GHI). The negative result for construction (F) was expected and is consistent with other studies over similar periods in both the UK and the US (Lau and Vaze 2002).

The contributions of labour composition suggest skilled labour has been more widely utilised in the market sector than the whole economy. Specifically, there has not been growth in the utilisation of skilled labour in agriculture, construction or the distributive trades, but the utilisation of skilled labour

has grown significantly in other parts of the service sector, notably financial and business services, as well as public and personal services.

Figure 2 presents a similar analysis to the above, but this time on the decomposition of growth in labour productivity, rather than output growth.

This chart shows that the contribution of growth in labour composition for the whole economy was just 0.2 per cent per annum, 11.7 per cent of labour productivity growth, with capital deepening and MFP making much larger contributions. Labour composition reflects the quality of labour input, taking account of contributing factors such as skills and experience. At an industrial level, labour composition made its largest contribution in manufacturing (D), making up 15 per cent of growth in labour productivity. Labour composition also made significant contributions to labour productivity growth in financial intermediation and business services (JK) and in public and personal services (LMNOPQ).

As can be seen, labour productivity tends to be slightly lower in service sector industries compared with manufacturing. This is in good part a reflection of the nature of the service sector, as in many cases the service offered is the product of labour itself, so it is often very labour-intensive, for example, hairdressing or financial advice. Because of the relative intensity of labour input compared with capital (or technological) input, the scope for capital deepening is limited and so productivity gains are necessarily constrained. In addition, it is hard to conceive how there could be significant productivity improvements in sectors where technology has hardly changed in years, and the technological input is relatively limited or low. However, for many service sector industries, this appears to be changing, with developments in ICT which have resulted in considerable innovation to both products and processes in much of the service sector, particularly in finance and business services. However, although labour productivity growth in services is behind manufacturing, the share contributed by MFP growth is fairly similar, possibly reflecting the increased use of ICT in these industries.

Table 2 shows the growth in labour composition, by sector, between 1997 and 2006.

Labour composition is the adjustment made for quality of labour input, that is, to take account of skills and work experience:

Figure 2
Decomposition of annual average labour productivity growth, 1997 to 2006 (2001 to 2006 for the market sector)

Percentages

Legend: ■ Capital deepening   ■ Labour quality   ■ MFP   ▲ Labour productivity

Table 2
Annual growth in labour composition

							Percentages	
	ABCE	D	F	GHI	JK	LMNOPQ	Whole economy	Market sector
1997	−1.25	0.88	1.46	−0.53	3.12	−0.24	0.43	
1998	1.66	0.09	0.02	−0.03	0.77	1.43	0.64	
1999	0.99	1.15	−0.01	0.31	0.60	0.78	0.49	
2000	−0.80	1.40	−0.05	0.30	−0.38	0.84	0.45	
2001	2.58	0.56	0.50	0.60	−0.10	−0.52	−0.18	0.62
2002	−2.26	0.54	−1.15	−0.13	0.75	0.80	0.00	0.04
2003	5.48	0.94	−0.26	0.27	0.64	0.04	0.37	1.08
2004	−2.14	0.15	0.97	−1.36	0.20	1.03	−0.22	0.09
2005	−0.87	0.60	−0.28	−0.14	−0.20	0.70	0.04	0.06
2006	1.08	1.34	−0.62	1.67	0.71	0.80	1.10	0.93
Average	0.45	0.77	0.06	0.10	0.61	0.57	0.31	0.47

Figure 3
Decomposition of annual average output growth, 1997 to 2000
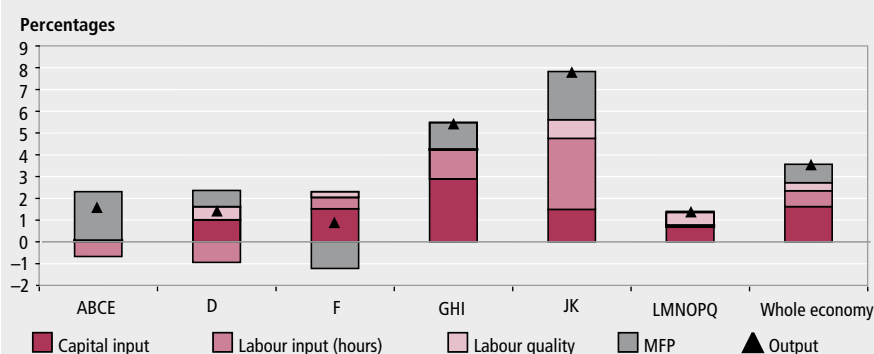
Figure 4
Decomposition of annual average output growth, 2001 to 2006
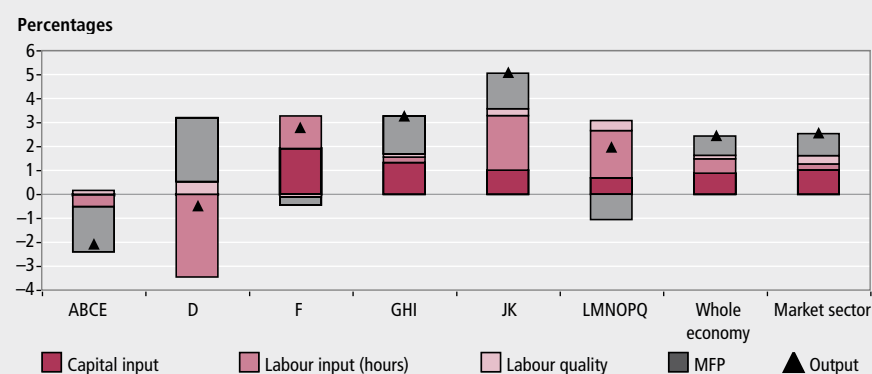
its growth is a measure of the improvement in the composition of the workforce. The table illustrates that at the whole economy level, labour composition grew on average by 0.3 per cent a year, with the highest growth occurring in manufacturing (D), financial intermediation and business services (JK) and public and other services (LMNOPQ). However, few definitive conclusions can be drawn on the change in labour composition due to the relatively short time period studied and the relative

volatility of the data. The labour measure is based on hours worked, which is a far more cyclical measure than workers or jobs, with firms responding to changing demand conditions by increasing or reducing hours in the short term rather than hiring or dismissing workers. Therefore, if such changes affect different worker types differently, there will be a change in labour composition. In general, it would be expected that labour composition would rise during a 'slump' when the less skilled

and experienced workers are the first to be laid off, and fall during a 'boom' when less productive workers are drawn back into the labour market due to increased demand. Therefore, the seemingly slow growth in labour composition since 1997 may reflect the strength of the UK economy and therefore labour demand over this period.

As a final piece of analysis, the period studied has been split into two separate parts: up to 2000, and after 2000, for two reasons. This is to compare the whole economy more directly with the market sector over the same time period (2001 to 2006), and to reflect the difference in capital investments made before and after 2000. Before 2000, firms made larger, possibly unnecessarily large, investments in ICT in attempts to avert the 'millennium bug'. This, in turn, often resulted in much lower investment just after 2000 as capital had already recently been replaced. This is reflected in the capital services growth estimates presented in Wallis and Dey-Chowdhury (2007). A decomposition of output growth for the two periods is presented in **Figure 3** and **Figure 4**.

The results show that the contribution of capital in the latter period was indeed lower although so was growth in output. Capital contributed 45.5 per cent to output growth between 1997 and 2000, compared with 36.1 per cent after 2000. Results by sector tell a similar story. The difference is particularly stark in manufacturing where, in the latter period, the contribution of capital was zero, although output did decline over the period. Conversely, capital deepening increased in the construction sector in the period 2001 to 2006. Comparing the market sector with the whole economy (2001 to 2006), the contribution of capital to output growth was slightly stronger in the market sector than for the whole economy.

The contribution of growth in labour composition has also declined between the two periods and is again stronger in the market sector than in the whole economy.

Looking specifically at MFP growth, the latter period shows a significant decline in agriculture, mining and utilities, and in the public and personal services sector, but strong improvement in manufacturing.

Figure 5 decomposes labour productivity growth for each period.

The results show that the decline in labour productivity growth between the two periods is partly due to a fall in the contribution of capital deepening, reflecting the impact of the millennium bug, and partly due to a slowdown in labour

Figure 5
Decomposition of annual average labour productivity growth

(a) 1997 to 2000

Percentages

(b) 2001 to 2006

Percentages
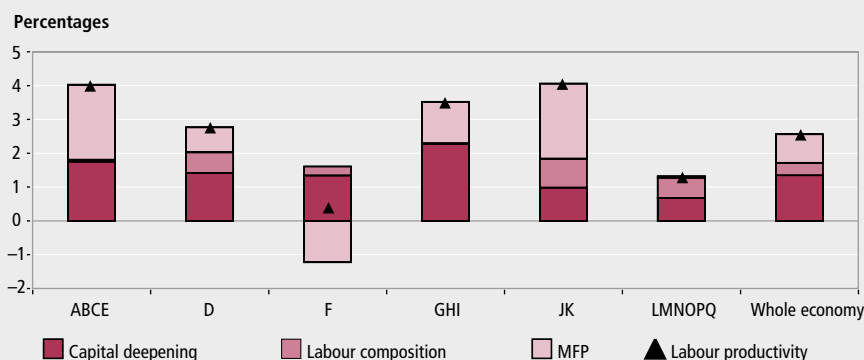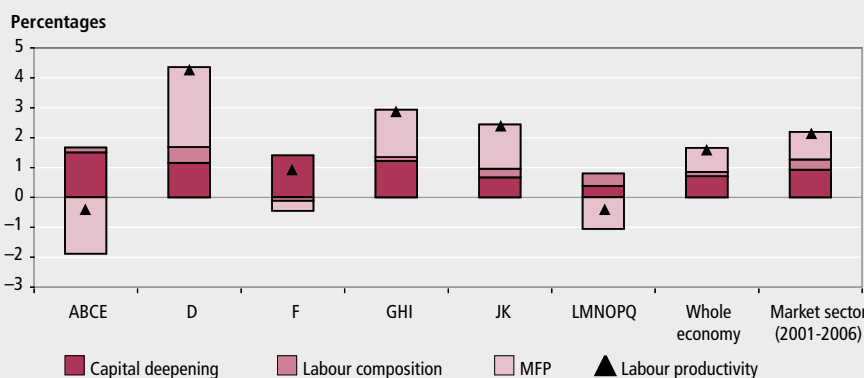
composition growth, reflecting the view that with employment at historically high levels, less productive workers are being drawn into the workforce due to favourable demand conditions, although this does vary between sectors. The contribution of MFP growth is broadly similar.

The contribution of labour composition in the market sector made up 15 per cent of labour productivity growth compared with 8 per cent in the whole economy (see second part of Figure 5). Again it should be borne in mind, however, that the output measure is affected by the use of employment and earnings indicators as proxies for output in the public sector.

Future developments

The growth accounting framework presented here is based on the decomposition of growth in GVA into growth in labour and capital inputs. An alternative growth accounting framework exists where intermediate inputs to production are also modelled – energy, materials and services. These other inputs to production, usually defined as intermediate inputs, could be included in MFP analysis for gross output, as opposed to GVA. Although such inputs are not included in this particular analysis, as they are netted

out of gross output to derive the GVA measure, they have been included in the EUKLEMS project (Van Ark *et al* 2007). The development of the KLEMS database for the UK, and the future publication of constant price Input-Output tables will mean that future MFP publications can be broadened to include a wider range of inputs, and therefore a deeper analysis of productivity.

Conclusion

This article has presented analysis of MFP growth using the quality-adjusted input measures of labour and capital, QALI and VICS, developed by ONS, resulting in a more accurate estimate of MFP. However, the short time period examined, particularly for the market sector, constrains the depth of analysis of MFP growth, particularly given its volatility in the short term. Consequently, estimates, and therefore analysis, will improve as the series is lengthened. Unfortunately it is not possible to extend the series further back due to breaks in the qualification variable on which QALI is partially based. The results suggest that the UK is still not experiencing a surge in productivity growth as seen in other countries, possibly driven by increased investment in ICT, most

notably the USA, but also in its application and wider utilisation.

Notes

1 There are two possible approaches to accounting for growth in output. The approach taken here is to calculate the contributions to growth in GVA made by factor inputs, that is, the added value generated in the production process after removing the costs of intermediate consumption. The other possible approach is to calculate the contributions to growth in gross output but to include input factors – energy, materials and services. An example of this is the ongoing EUKLEMS project.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Camus D and Lau E (2006) 'Productivity Measures and analysis: ONS Strategy and work programme', *Economic Trends* 632 pp 14–21 and at www.statistics.gov.uk/cci/article.asp?id=1603

Dey-Chowdhury S and Goodridge P (2007) 'Quality-adjusted labour input: estimates for 1996 to 2006', *Economic & Labour Market Review* 1(12) pp 48–54 and at www.statistics.gov.uk/cci/article.asp?id=1906

Galindo-Rueda, F (2007) 'Developing an R&D satellite account for the UK: a preliminary analysis', *Economic & Labour Market Review* 1(12) pp 18–29 and at www.statistics.gov.uk/cci/article.asp?id=1903

Giorgio Marrano M, Haskel J and Wallis G (2007) 'What Happened to the Knowledge Economy? ICT, Intangible Investment and Britain's Productivity Record Revisited', Queen Mary College Working Paper 603.

Goodridge P (2007) 'Multi-factor productivity analysis', *Economic & Labour Market Review* 1(7) pp 32–8 and at www.statistics.gov.uk/cci/article.asp?id=1826

Holmwood R, Lau E, Richardson C and Wallis G (2005) 'An experimental quality-adjusted labour input measure', *Economic Trends* 624 pp 30–41 and at www.statistics.gov.uk/cci/article.asp?id=1298

Lau E (2002) 'Productivity Measures: ONS strategy', *Economic Trends* 581, pp 20–5 and at www.statistics.gov.uk/cci/article.asp?id=145

Lau E and Vaze P (2002) 'Accounting growth: capital, skills and output' at www.statistics.gov.uk/cci/nscl.asp?id=8311

Office for National Statistics (2007), *The ONS Productivity Handbook: A Statistical Overview and Guide* at www.statistics.gov.uk/about/data/guides/productivity/default.asp

Solow R (1957) 'Technical change and the Aggregate Production Function', Review of Economics and Statistics Vol. 39 pp 312–20.

Van Ark B, O'Mahony M, Ypma G, Groningen Growth and Development Centre, University of Groningen, University of Birmingham (2007) 'The EU KLEMS Productivity Report' at www.euklems.com/data/eu_klems_productivity_report.pdf

Wallis, G and Dey-Chowdhury, S (2007) 'Volume of capital services: estimates for 1950 to 2006', *Economic & Labour Market Review* 1(12) pp 37-47 at www.statistics.gov.uk/cci/article.asp?id=1905

FEATURE

Nicholas Palmer and Matthew Hughes
Office for National Statistics

Labour Force Survey: interim reweighting 2007

SUMMARY

On 14 November 2007, the Office for National Statistics published revised Labour Force Survey (LFS) aggregate results in the Labour Market Statistics First Release to take account of the latest available population estimates. This article firstly describes the various new and revised population estimates and the time periods affected. This is supported by tables and charts illustrating the changes at both the total level and by age group. An outline of the reasons for making the revisions and of the basic methodology is then followed by a summary of how the new population figures impacted on the headline labour market indicators, that is, the measures of UK employment, unemployment and economic activity. Analysis is also provided of the revisions to the population estimates by Government Office Region.

On 14 November 2007, revised Labour Force Survey (LFS) estimates, that is, the aggregates in the Labour Market Statistics (LMS) First Release, were published to take into account the latest LFS population data. The LFS data sets used for detailed analysis, known as LFS microdata, are not affected. They continue to be weighted to the population estimates published in February 2003.[1]

On 22 August 2007, the Office for National Statistics (ONS) published the 2006 mid-year population estimates for the UK and revised estimates for 2002 to 2005. These were followed by the 2007 Q2 experimental quarterly population estimates for England and Wales on 13 September, which provided revised projections for mid-2007. These new and revised estimates have been incorporated into the calculation of the population estimates that feed into the LFS aggregate results.

In previous years, the reweighting of the LFS aggregates has coincided with the implementation of the annual review of the seasonal adjustment of the LFS. A detailed review has not been carried out in 2007; there have therefore been no changes to the way the series are seasonally adjusted.

This article gives an overview of the population estimate revisions and their impact on the headline and regional LFS aggregate results.

Background to the LFS

The LFS is a continuous UK household sample survey, which collects information from approximately 52,000 households each quarter (around 120,000 people). Since those responses reflect only a sample (approximately 1 in 400) of the total population, they are weighted on the basis of subnational population totals by age and sex to give estimates for the entire household population. The population estimates used to produce the LFS population totals are based on the annual mid-year population estimates (MYEs), and latest projections based on these MYEs. These are updated on an annual cycle and thus the LFS estimates are revised on the same basis. These annual revisions have been in operation since a new system of interim reweighting of LFS data was introduced in 2002. This methodology ensures that the LFS time series continues to be kept closely in line with the latest population estimates, thus reflecting a more accurate picture of the UK labour market.

In order to remain consistent with the LFS sample, the population estimates are adjusted to exclude those outside the coverage of the LFS. Consequently, communal establishments, apart from people living in National Health Service accommodation and students living in halls of residence who have a UK-resident parent, are excluded from the LFS household population estimates. A fuller description of the history of the LFS and its methodology can be found in the Labour Force Survey User Guide, Volume 1.[2]

Figure 1
LFS population aged 16+ totals, previous and new population estimates[1]

United Kingdom
Millions
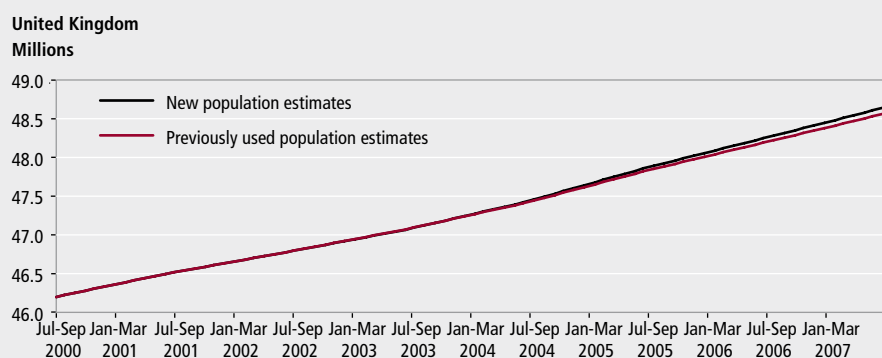
Note:

1 Rolling three-month periods, July to September 2000 to June to August 2007.

Figure 2
LFS working age population totals, previous and new population estimates[1]

United Kingdom
Millions
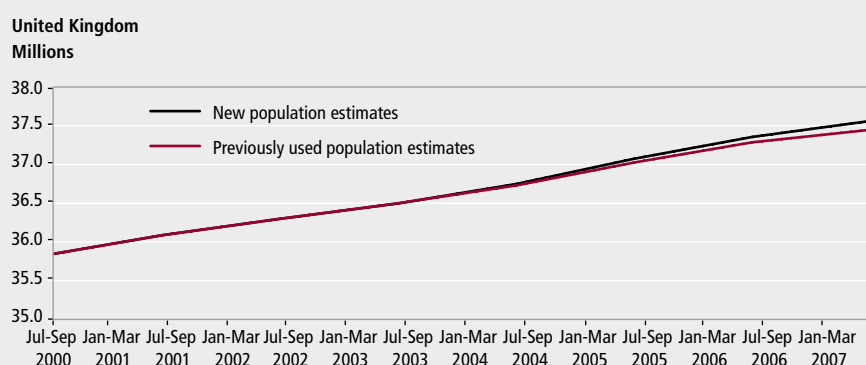
Note:

1 Rolling three-month periods, July to September 2000 to June to August 2007.

Table 1
Revisions to headline LFS results, June to August 2007

Status	Level	Level as a percentage	Rate (percentage points)
Population aged 16+			
Economically active	91,000	*0.3*	0.1
In employment	85,000	*0.3*	0.1
Unemployed	6,000	*0.4*	-
Economically inactive	–12,000	*–0.1*	–0.1
Working age population			
Economically active	95,000	*0.3*	-
In employment	89,000	*0.3*	-
Unemployed	6,000	*0.4*	-
Economically inactive	20,000	*0.1*	-

LFS population estimates and reweighting the LFS

The population estimates published in August and September 2007 indicate that the UK population was increasing at a slightly faster rate than had previously been estimated. **Figure 1** and **Figure 2** compare the new LFS population aged 16+ and working age (women aged 16 to 59 and men aged 16 to 64) estimates with those previously used for the LFS aggregates.

The methodological improvements to the estimation of the mid-year estimates, which include an improved method for estimating international migration, have contributed to the higher population growth shown in the latest LFS population aged 16+ and working age estimates. **Table A1** in the Appendix shows the revisions to the population aged 16+ and working age at each mid-year point from 2002. The largest revisions were to the period prior to the month of the reweighting exercise, 0.2 per cent for the aged 16+ estimates and 0.3 per cent for the working age estimates.

The impact of the population revisions is bigger on the working age population (Figure 2) than the aged 16+ population (Figure 1). This is because the latest estimates for people over working age (60+ for females and 65+ for males) are lower than those previously used. **Table A2** shows the impact of the new population estimates on each age group.

Revisions to LFS aggregates

The remainder of this article will examine the impact of the population revisions on the headline indicators by labour market status. The largest revisions were to the period immediately before the month of the reweighting exercise – June to August 2007 – and these are summarised in **Table 1**.

For the population aged 16+, the downward revision to the level of economically inactive people is mainly due to the downward revision to the number of people above working age. This is because economic inactivity is significantly more prevalent among people above working age than among those of working age.

Generally, since the population revisions are included in both the numerator and denominator for the rate calculations, the revisions to the rates are very small, no more than 0.1 of a percentage point and, in many cases, zero. Consequently the following analysis focuses on the levels rather than rates.

LFS economically active estimates

Figure 3 shows the impact of the population revisions on the LFS working age (16 to 59/64) economically active levels.

The UK working age economically active level has been increasing at a slightly higher rate over the period than had previously been estimated. The LFS working age economically active level combines the LFS working age employment and unemployment levels. These will be examined in more detail below. The largest revisions were to the period immediately before the month of the reweighting exercise, 0.3 per cent for the working age

Figure 3

LFS working age economically active totals, previous and new population estimates[1]

United Kingdom
Millions
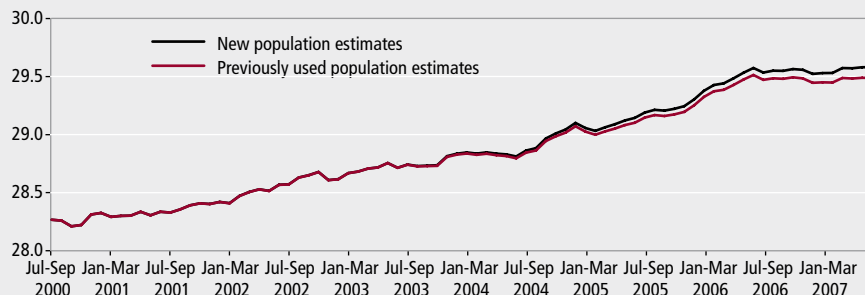
Note:

1 Rolling three-month periods, July to September 2000 to June to August 2007.

Figure 4

LFS working age economically inactive totals, previous and new population estimates[1]

United Kingdom
Millions
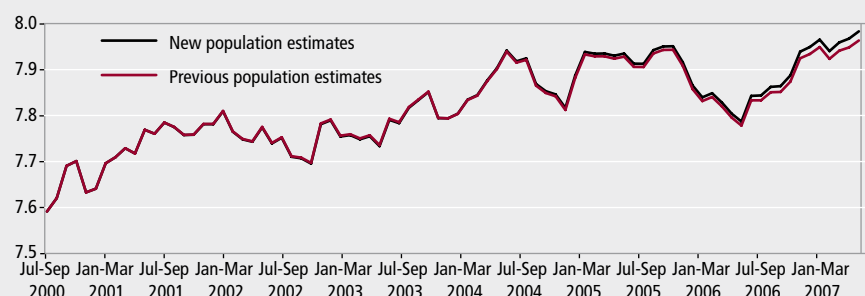
Note:

1 Rolling three-month periods, July to September 2000 to June to August 2007.

Figure 5

LFS working age employment totals, previous and new population estimates[1]

United Kingdom
Millions
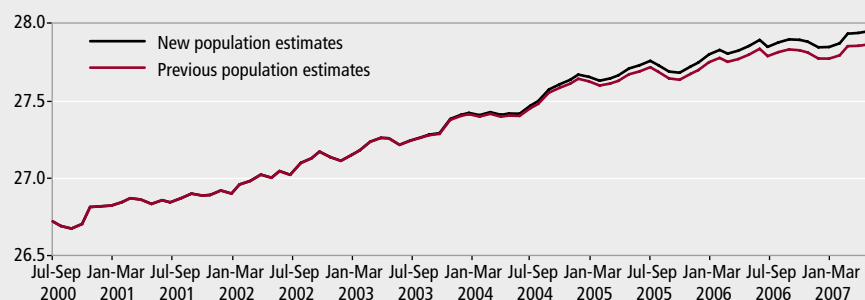
Note:

1 Rolling three-month periods, July to September 2000 to June to August 2007.

economically active estimates.

LFS economically inactive estimates

Figure 4 shows the impact of the population revisions on the LFS working age (16 to 59/64) economically inactive levels.

The UK working age economically inactive level has been increasing at a slightly higher rate over the period than had previously been estimated. The revisions to the LFS working age economically inactive levels are no greater than 0.1 per cent, as seen for June to August 2007.

LFS employment estimates

Figure 5 shows the impact of the population revisions to the LFS working age (16 to 59/64) employment levels.

Table A3 shows the revisions to the employment levels for June to August 2007, broken down by age group. The largest revisions are to the period immediately before the reweighting, 0.3 per cent for the working age employment estimates.

LFS unemployment estimates

Figure 6 shows the impact of the population revisions to the LFS working age (16 to 59/64) unemployment levels.

Table A3 also shows the revisions to the unemployment levels for June to August 2007, broken down by age group. The largest revisions were to the period immediately before the reweighting exercise, 0.4 per cent for the working age unemployment estimates.

LFS population revisions by Government Office Region (GOR)

Figure 7 shows the revisions to the June to August 2007 LFS household population data using the latest population aged 16+ estimates, broken down by region.

The largest upward revision for June to August 2007 was in Yorkshire and The Humber, 65,000. The largest downward revision was seen in London, 106,000. Overall, the estimates for seven regions were revised upwards and five were revised downwards. **Table A4** details the changes in the economic activity status of each GOR for June to August 2007 as a result of the latest population estimates. The percentage change between the new and previously used 16+ population estimates does vary between regions: for Yorkshire and The Humber it peaks at +1.6 per cent in June to August 2007 and for London it reaches -1.7 per cent over the same period.

Figure 6
LFS working age unemployment totals, previous and new population estimates[1]

United Kingdom
Millions

Legend:
— New population estimates
— Previously used population estimates
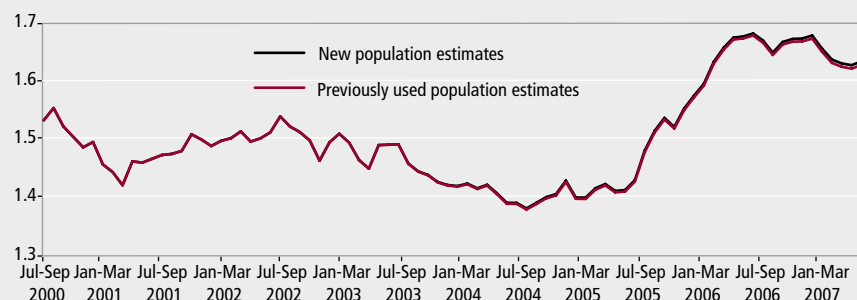
Note:

1 Rolling three-month periods, July to September 2000 to June to August 2007.

Figure 7
LFS aged 16+ population data revisions to levels: by GOR, June to August 2007[1]

Thousands

North East −19
North West −7
Yorkshire and The Humber 65
East Midlands 51
West Midlands −38
East 44
London −106
South East 50
South West 32
Wales −3
Scotland 2
Northern Ireland 5
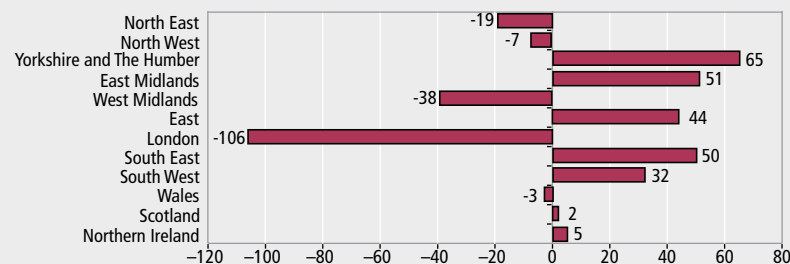
Note:

1 Rolling three-month period.

APPENDIX

Table A1
New and previous population aged 16+ and working age estimates

Thousands

	16+				16–59/64			
	Previous	New	Revision	% change	Previous	New	Revision	% change
Jun–Aug 2002	46,773	46,773	0	0.0	36,297	36,297	0	0.0
Jun–Aug 2003	47,069	47,065	−4	0.0	36,500	36,498	−2	0.0
Jun–Aug 2004	47,409	47,421	12	0.0	36,733	36,752	19	0.1
Jun–Aug 2005	47,822	47,860	38	0.1	37,032	37,082	49	0.1
Jun–Aug 2006	48,193	48,250	57	0.1	37,296	37,366	70	0.2
Jun–Aug 2007	48,563	48,642	79	0.2	37,459	37,575	115	0.3

Source: Office for National Statistics

Table A2
New and previous population estimates: by age band

Thousands

	16–17				18–24			
	Previous	New	Revision	% change	Previous	New	Revision	% change
Jun–Aug 2002	1,514	1,512	–1	–0.1	4,997	4,996	0	0.0
Jun–Aug 2003	1,528	1,526	–2	–0.1	5,131	5,131	0	0.0
Jun–Aug 2004	1,563	1,560	–2	–0.2	5,248	5,268	20	0.4
Jun–Aug 2005	1,578	1,573	–5	–0.3	5,371	5,393	21	0.4
Jun–Aug 2006	1,577	1,569	–8	–0.5	5,496	5,515	19	0.3
Jun–Aug 2007	1,591	1,587	–3	–0.2	5,591	5,633	43	0.8

	25–34				35–49			
	Previous	New	Revision	% change	Previous	New	Revision	% change
Jun–Aug 2002	8,175	8,183	9	0.1	12,734	12,728	–5	0.0
Jun–Aug 2003	7,991	8,005	14	0.2	12,907	12,902	–5	0.0
Jun–Aug 2004	7,859	7,876	17	0.2	13,063	13,057	–7	–0.1
Jun–Aug 2005	7,818	7,857	39	0.5	13,215	13,211	–3	0.0
Jun–Aug 2006	7,772	7,818	46	0.6	13,337	13,338	1	0.0
Jun–Aug 2007	7,730	7,795	65	0.8	13,420	13,424	4	0.0

	50–59/64				60/65+			
	Previous	New	Revision	% change	Previous	New	Revision	% change
Jun–Aug 2002	8,878	8,877	–2	0.0	10,476	10,476	0	0.0
Jun–Aug 2003	8,943	8,934	–8	–0.1	10,569	10,567	–2	0.0
Jun–Aug 2004	9,000	8,991	–9	–0.1	10,676	10,669	–7	–0.1
Jun–Aug 2005	9,051	9,048	–3	0.0	10,790	10,778	–12	–0.1
Jun–Aug 2006	9,114	9,127	13	0.1	10,896	10,884	–13	–0.1
Jun–Aug 2007	9,128	9,135	8	0.1	11,104	11,068	–37	–0.3

Source: Office for National Statistics

Table A3
Changes as a result of the latest population estimates: by age group and economic activity status, June to August 2007

Thousands

	Economically active	In employment	Unemployment	Economically inactive
16–17	–2	–1	0	–2
18–24	31	27	4	11
25–34	57	54	3	8
35–49	3	3	0	1
50–59/64	5	5	0	2
60/65+	–4	–4	0	–32

Source: Office for National Statistics

Table A4
Changes as a result of the latest aged 16+ population estimates: by economic activity status and Government Office Region, June to August 2007

Thousands

Government Office Region	Economically active	In employment	Unemployed	Economically inactive
North East	–15	–15	–1	–4
North West	–7	–7	0	0
Yorkshire and The Humber	47	43	4	18
East Midlands	36	33	3	15
West Midlands	–29	–27	–2	–10
East	27	25	2	17
London	–74	–66	–8	–32
South East	29	28	1	21
South West	22	21	1	10
Wales	–3	–3	0	0
Scotland	7	6	1	–5
Northern Ireland	5	5	0	0

Source: Office for National Statistics

FEATURE

Ian Richardson
Office for National Statistics

Services producer price index (experimental) – third quarter 2007

SUMMARY

The experimental services producer price index (SPPI) measures movements in prices charged for services supplied by businesses to other businesses, local and national government. This article shows the effects some industries are having on the top-level SPPI. It continues the quarterly feature previously published in *Economic Trends*. The data produced are used internally by the Office for National Statistics as a deflator for the Index of Services and the quarterly measurement of gross domestic product. The index is also used by HM Treasury and the Bank of England to help monitor inflation in the economy.

Prices of business-to-business services rose by 2.6 per cent in the year to the third quarter of 2007. This is based on a comparison of the change in the top-level services producer price index (SPPI) on the net sector basis.

Figure 1 shows how the percentage change for the top-level SPPI (net sector) compares with the retail prices index (RPI) all services sector, and the producer price index (PPI) for all manufactured goods (net sector).

The top-level results, on both gross and net sector bases, are shown in **Table 1**. In 2007 Q3, the top-level SPPI (net sector) rose by 0.4 per cent compared with the previous quarter.

Figure 2 depicts the SPPI annual growths

Figure 1
Experimental top-level SPPI compared with the RPI and PPI

Percentage change, quarter on same quarter a year earlier
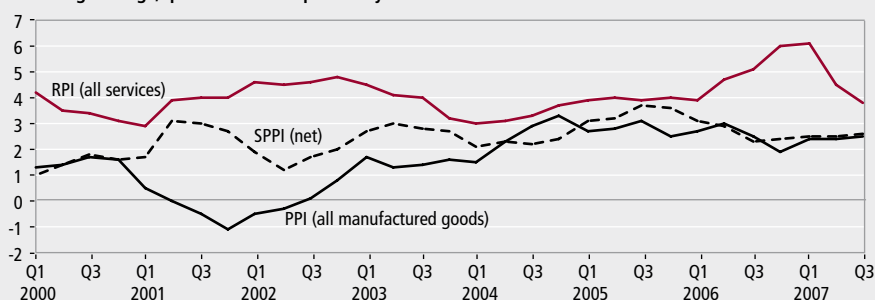
Figure 2
Experimental top-level SPPI

Percentage change, quarter on same quarter a year earlier
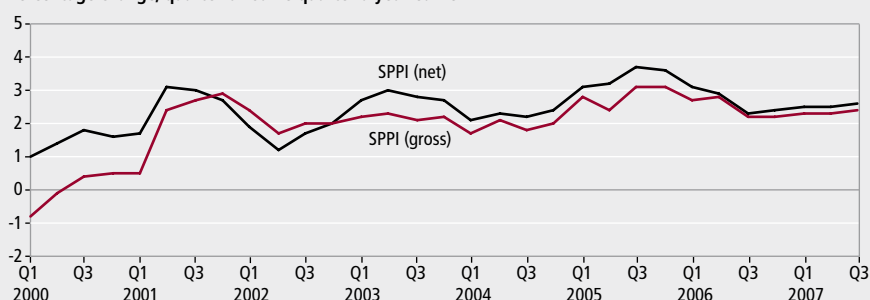
Table 1
Top-level SPPI results

	SPPI quarterly index values, 2000=100		Percentage change, quarter on same quarter a year earlier	
	Gross sector	Net sector	Gross sector	Net sector
2000 Q1	100.1	99.7	–0.8	1.0
2000 Q2	99.9	99.8	–0.1	1.4
2000 Q3	99.9	100.1	0.4	1.8
2000 Q4	100.1	100.5	0.5	1.6
2001 Q1	100.6	101.3	0.5	1.7
2001 Q2	102.3	102.9	2.4	3.1
2001 Q3	102.7	103.1	2.7	3.0
2001 Q4	102.9	103.2	2.9	2.7
2002 Q1	103.1	103.2	2.4	1.9
2002 Q2	104.1	104.2	1.7	1.2
2002 Q3	104.8	104.8	2.0	1.7
2002 Q4	105.0	105.3	2.0	2.0
2003 Q1	105.3	106.0	2.2	2.7
2003 Q2	106.5	107.3	2.3	3.0
2003 Q3	106.9	107.8	2.1	2.8
2003 Q4	107.3	108.2	2.2	2.7
2004 Q1	107.1	108.2	1.7	2.1
2004 Q2	108.7	109.8	2.1	2.3
2004 Q3	108.9	110.1	1.8	2.2
2004 Q4	109.4	110.8	2.0	2.4
2005 Q1	110.1	111.6	2.8	3.1
2005 Q2	111.3	113.3	2.4	3.2
2005 Q3	112.2	114.3	3.1	3.7
2005 Q4	112.8	114.8	3.1	3.6
2006 Q1	113.1	115.1	2.7	3.1
2006 Q2	114.4	116.6	2.8	2.9
2006 Q3	114.7	116.9	2.2	2.3
2006 Q4	115.3	117.6	2.2	2.4
2007 Q1	115.7	118.0	2.3	2.5
2007 Q2	117.0	119.4	2.3	2.5
2007 Q3	117.4	119.9	2.4	2.6

for both the net and gross sector time series. The annual growth for the SPPI net sector rose to 2.6 per cent in 2007 Q3, up from 2.5 per cent in 2007 Q2. The gross SPPI growth at 0.3 per cent in 2007 Q3 was down from 1.2 per cent in the previous quarter. The difference in the annual growth between the gross and net sector SPPI was 0.2 percentage points this quarter.

Industry-specific indices

Tables available on the National Statistics website contain the data for the 33 industries for which indices of services producer prices are currently available. The weights for each industry index are shown at both gross and net sector levels. Comparing Q3 2007 with Q3 2006, some key points to note are:

- property rentals rose 4.7 per cent, due to sustained growth within the sector as reported by the Investment Property Databank

- sewerage services prices rose by 6.5 per cent, following rises reported by OFWAT. These are updated on an annual basis in Q2
- freight transport by road rose by 1.3 per cent, due to annual increases taking into account the rising costs of overheads, for example, the cost of fuel
- employment agency activities rose by 2.8 per cent, due to supply and demand for staff

Next results

The next set of SPPI results will be issued on 27 February 2008 on the National Statistics website at www.statistics.gov.uk/sppi

Further information

All SPPI tables and articles on the methodology and impact of rebasing the SPPI and the redevelopment of an index for business telecommunications (together with more general information on the SPPI) are

available at www.statistics.gov.uk/sppi

A summary quality report for the SPPI can be found at www.statistics.gov.uk/about/data/methodology/quality/information_business_statistics.asp

TECHNICAL NOTE

1   The experimental services producer price index (SPPI) replaces the former corporate services price index (CSPI). It measures movements in prices charged for services supplied by businesses to other businesses, local and national government. It is not classified as a National Statistic.

2   Unless otherwise stated, index numbers shown in the main text are on a net sector basis. These relate only to transactions between the corporate services sector and other sectors. Detailed tables available on the National Statistics website also contain gross sector indices which include transactions within the corporate services sector.

3   Indices relate to average prices per quarter. The full effect of a price change occurring within a quarter will only be reflected in the index for the following quarter. All index numbers exclude VAT and are not seasonally adjusted.

4   SPPI inflation is the percentage change in the net sector index for the latest quarter compared with the corresponding quarter in the previous year.

5   Grants from the European Commission helped ONS to begin developing the SPPI. Funding of approximately 600,000 euros was awarded between 2002 and 2005. This has now ceased.

6   A number of external data sources are currently used in the compilation of the SPPI, as follows:

Investment Property Database (IPD) – property rental payments

Office of Communications (Ofcom) – business telecommunications

Office of Water Services (OFWAT) – sewerage services

Parcelforce – national post parcels

Office of Rail Regulation (ORR) – business rail fares

Key time series

National accounts aggregates

Last updated: 20/12/07

Seasonally adjusted

	£ million		Indices (2003 = 100)						
	At current prices		Value indices at current prices		Chained volume indices			Implied deflators[3]	
	Gross domestic product (GDP) at market prices	Gross value added (GVA) at basic prices	GDP at market prices[1]	GVA at basic prices	Gross national disposable income at market prices[2]	GDP at market prices	GVA at basic prices	GDP at market prices	GVA at basic prices
	YBHA	ABML	YBEU	YBEX	YBFP	YBEZ	CGCE	YBGB	CGBV
2001	1,003,297	889,063	89.7	89.5	93.7	95.3	95.6	94.1	93.6
2002	1,055,793	937,323	94.4	94.3	97.1	97.3	97.3	97.0	97.0
2003	1,118,245	993,507	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004	1,184,296	1,051,934	105.9	105.9	103.4	103.3	103.3	102.6	102.5
2005	1,233,976	1,096,629	110.3	110.4	104.2	105.2	105.2	104.9	104.9
2006	1,303,573	1,158,871	116.6	116.6	105.8	108.2	108.3	107.7	107.7
2001 Q1	247,905	219,532	88.7	88.4	93.1	94.9	95.3	93.5	92.7
2001 Q2	249,597	220,901	89.3	88.9	93.4	95.0	95.3	94.0	93.3
2001 Q3	251,028	222,536	89.8	89.6	94.4	95.6	95.8	94.0	93.6
2001 Q4	254,767	226,094	91.1	91.0	94.1	95.9	96.0	95.0	94.9
2002 Q1	259,054	229,737	92.7	92.5	95.9	96.4	96.5	96.1	95.9
2002 Q2	262,734	233,372	94.0	94.0	96.2	97.0	96.9	96.9	97.0
2002 Q3	265,836	236,103	95.1	95.1	98.3	97.7	97.6	97.4	97.4
2002 Q4	268,129	238,111	95.9	95.9	98.2	98.2	98.1	97.7	97.7
2003 Q1	272,953	242,612	97.6	97.7	99.4	98.8	98.8	98.9	98.9
2003 Q2	277,119	246,427	99.1	99.2	98.9	99.3	99.3	99.8	99.9
2003 Q3	281,996	250,492	100.9	100.9	100.0	100.4	100.4	100.4	100.5
2003 Q4	286,177	253,976	102.4	102.3	101.7	101.5	101.6	100.9	100.7
2004 Q1	288,912	256,106	103.3	103.1	101.9	102.2	102.2	101.1	100.9
2004 Q2	295,066	262,094	105.5	105.5	103.2	103.1	103.2	102.3	102.3
2004 Q3	297,941	264,732	106.6	106.6	103.0	103.5	103.5	102.9	103.0
2004 Q4	302,377	269,002	108.2	108.3	105.4	104.1	104.2	103.9	104.0
2005 Q1	303,996	270,082	108.7	108.7	104.1	104.4	104.4	104.2	104.1
2005 Q2	307,306	273,158	109.9	110.0	105.4	104.8	104.9	104.9	104.8
2005 Q3	308,515	273,676	110.4	110.2	103.5	105.4	105.4	104.7	104.5
2005 Q4	314,159	279,713	112.4	112.6	104.1	106.1	106.2	106.0	106.1
2006 Q1	318,656	283,557	114.0	114.2	104.7	107.0	107.2	106.5	106.5
2006 Q2	322,143	286,232	115.2	115.2	105.9	107.8	108.0	106.9	106.7
2006 Q3	329,052	292,438	117.7	117.7	106.1	108.5	108.6	108.5	108.4
2006 Q4	333,722	296,644	119.4	119.4	106.3	109.5	109.6	109.0	109.0
2007 Q1	338,708	300,744	121.2	121.1	106.8	110.4	110.5	109.8	109.6
2007 Q2	345,384	307,024	123.5	123.6	108.5	111.3	111.4	111.0	111.0
2007 Q3	349,600	311,363	125.1	125.4	108.1	112.0	112.1	111.6	111.8

Percentage change, quarter on corresponding quarter of previous year[4]

2001 Q1	5.0	5.3	5.1	5.4	3.3	2.9	2.9	2.1	2.2
2001 Q2	4.6	5.0	4.6	5.0	3.2	2.3	2.1	2.3	2.8
2001 Q3	4.1	4.5	4.2	4.6	3.1	2.4	1.9	1.8	2.6
2001 Q4	4.8	5.2	4.7	5.2	3.7	2.0	1.6	2.7	3.6
2002 Q1	4.5	4.6	4.5	4.6	3.0	1.6	1.3	2.8	3.5
2002 Q2	5.3	5.6	5.3	5.7	3.0	2.1	1.7	3.1	4.0
2002 Q3	5.9	6.1	5.9	6.1	4.1	2.2	1.9	3.6	4.1
2002 Q4	5.2	5.3	5.3	5.4	4.4	2.4	2.2	2.8	3.0
2003 Q1	5.4	5.6	5.3	5.6	3.6	2.5	2.4	2.9	3.1
2003 Q2	5.5	5.6	5.4	5.5	2.8	2.4	2.5	3.0	3.0
2003 Q3	6.1	6.1	6.1	6.1	1.7	2.8	2.9	3.1	3.2
2003 Q4	6.7	6.7	6.8	6.7	3.6	3.4	3.6	3.3	3.1
2004 Q1	5.8	5.6	5.8	5.5	2.5	3.4	3.4	2.2	2.0
2004 Q2	6.5	6.4	6.5	6.4	4.3	3.8	3.9	2.5	2.4
2004 Q3	5.7	5.7	5.6	5.6	3.0	3.1	3.1	2.5	2.5
2004 Q4	5.7	5.9	5.7	5.9	3.6	2.6	2.6	3.0	3.3
2005 Q1	5.2	5.5	5.2	5.4	2.2	2.2	2.2	3.1	3.2
2005 Q2	4.1	4.2	4.2	4.3	2.1	1.6	1.6	2.5	2.4
2005 Q3	3.5	3.4	3.6	3.4	0.5	1.8	1.8	1.7	1.5
2005 Q4	3.9	4.0	3.9	4.0	−1.2	1.9	1.9	2.0	2.0
2006 Q1	4.8	5.0	4.9	5.1	0.5	2.5	2.7	2.2	2.3
2006 Q2	4.8	4.8	4.8	4.7	0.6	2.9	3.0	1.9	1.8
2006 Q3	6.7	6.9	6.6	6.8	2.6	2.9	3.0	3.6	3.7
2006 Q4	6.2	6.1	6.2	6.0	2.1	3.2	3.2	2.8	2.7
2007 Q1	6.3	6.1	6.3	6.0	2.0	3.2	3.1	3.1	2.9
2007 Q2	7.2	7.3	7.2	7.3	2.5	3.2	3.1	3.8	4.0
2007 Q3	6.2	6.5	6.3	6.5	1.9	3.2	3.2	2.9	3.1

Notes:

Source: Office for National Statistics

1 "Money GDP".
2 This series is only updated once a quarter, in line with the full quarterly national accounts data set.
3 Based on chained volume measures and current price estimates of expenditure components of GDP.
4 For index number series, these are derived from the rounded figures shown in the table.

Gross domestic product: by category of expenditure

Last updated: 20/12/07

£ million, chained volume measures, reference year 2003, seasonally adjusted

	Domestic expenditure on goods and services at market prices											
	Final consumption expenditure			Gross capital formation								
	Households	Non-profit institutions[1]	General government	Gross fixed capital formation	Changes in inventories[2]	Acquisitions less disposals of valuables	Total	Exports of goods and services	Gross final expenditure	*less* imports of goods and services	Statistical discrepancy (expenditure)	Gross domestic at product market prices
	ABJR	HAYO	NMRY	NPQT	CAFU	NPJR	YBIM	IKBK	ABMG	IKBL	GIXS	ABMI
2001	653,326	27,155	217,359	178,203	5,577	342	1,082,333	277,694	1,360,205	294,449	0	1,066,217
2002	676,833	27,130	224,868	184,701	2,289	183	1,116,239	280,593	1,396,862	308,706	0	1,088,108
2003	697,160	27,185	232,699	186,700	3,983	−37	1,147,690	285,397	1,433,087	314,842	0	1,118,245
2004	721,434	27,327	240,129	197,655	4,597	−42	1,191,099	299,289	1,490,388	335,703	0	1,154,685
2005	732,005	28,167	246,527	200,654	3,611	−354	1,210,610	323,749	1,534,359	359,626	1,183	1,175,916
2006	746,097	29,868	251,134	216,465	1,236	290	1,245,090	359,413	1,604,503	395,626	1,246	1,210,122
2001 Q1	161,204	6,873	53,609	44,158	1,675	−26	267,565	71,295	339,027	73,841	0	265,267
2001 Q2	162,333	6,788	53,894	44,888	1,793	202	270,071	69,333	339,452	73,937	0	265,573
2001 Q3	164,239	6,762	54,600	45,017	1,726	30	272,481	67,921	340,353	73,327	0	267,163
2001 Q4	165,550	6,732	55,256	44,140	383	136	272,216	69,145	341,373	73,344	0	268,214
2002 Q1	167,588	6,762	55,756	44,562	1,059	66	275,814	69,440	345,256	75,709	0	269,595
2002 Q2	168,803	6,756	56,288	45,610	409	48	277,926	71,533	349,504	78,367	0	271,044
2002 Q3	169,715	6,793	56,429	46,422	520	62	280,004	71,056	351,089	78,006	0	273,034
2002 Q4	170,727	6,819	56,395	48,107	301	7	282,495	68,564	351,013	76,624	0	274,435
2003 Q1	171,828	6,843	57,099	46,805	−477	−8	282,249	72,662	354,921	78,836	0	276,082
2003 Q2	174,146	6,779	57,684	46,131	−635	94	284,342	70,610	354,945	77,283	0	277,686
2003 Q3	175,140	6,790	58,445	45,964	2,223	−68	288,498	70,334	358,825	78,089	0	280,743
2003 Q4	176,046	6,773	59,471	47,800	2,872	−55	292,601	71,791	364,396	80,634	0	283,734
2004 Q1	178,197	6,830	59,969	49,353	−439	112	294,023	73,389	367,412	81,648	0	285,764
2004 Q2	180,362	6,805	59,530	49,159	1,042	−90	296,808	74,861	371,670	83,313	0	288,357
2004 Q3	181,032	6,826	60,002	49,832	1,047	−96	298,644	75,097	373,741	84,300	0	289,441
2004 Q4	181,843	6,866	60,628	49,311	2,947	32	301,624	75,942	377,565	86,442	0	291,123
2005 Q1	182,466	7,005	60,858	49,393	1,894	−158	301,458	75,952	377,410	85,898	253	291,764
2005 Q2	182,306	6,987	61,613	49,334	797	86	301,122	79,576	380,698	87,920	300	293,078
2005 Q3	183,174	7,042	61,885	50,642	853	−201	303,394	82,357	385,751	91,483	320	294,588
2005 Q4	184,059	7,133	62,171	51,285	67	−81	304,636	85,864	390,500	94,325	310	296,486
2006 Q1	184,076	7,355	62,842	52,200	483	101	307,056	93,877	400,933	102,099	377	299,211
2006 Q2	186,465	7,436	62,502	53,184	76	229	309,892	96,051	405,943	104,855	351	301,439
2006 Q3	186,828	7,509	62,718	54,636	1,037	−28	312,700	84,680	397,379	94,387	298	303,290
2006 Q4	188,728	7,568	63,072	56,445	-360	−12	315,442	84,805	400,248	94,285	220	306,182
2007 Q1	190,114	7,628	63,424	57,013	233	69	318,481	84,607	403,087	94,538	−17	308,532
2007 Q2	191,491	7,698	63,740	56,582	663	322	320,498	84,813	405,312	94,088	−98	311,126
2007 Q3	193,591	7,757	63,932	57,919	2,095	52	325,343	86,472	411,815	98,472	−153	313,190

Percentage change, quarter on corresponding quarter of previous year

	ABJR	HAYO	NMRY	NPQT			YBIM	IKBK	ABMG	IKBL		ABMI
2001 Q1	2.1	3.9	1.8	3.0			2.8	9.7	4.3	9.0		2.9
2001 Q2	2.9	0.6	1.6	5.5			3.2	3.0	3.1	6.1		2.3
2001 Q3	3.4	−1.6	2.8	3.7			3.0	1.0	2.6	3.6		2.3
2001 Q4	4.0	−3.0	3.3	−1.6			2.7	−1.6	1.7	0.7		2.1
2002 Q1	4.0	−1.6	4.0	0.9			3.1	−2.6	1.8	2.5		1.6
2002 Q2	4.0	−0.5	4.4	1.6			2.9	3.2	3.0	6.0		2.1
2002 Q3	3.3	0.5	3.3	3.1			2.8	4.6	3.2	6.4		2.2
2002 Q4	3.1	1.3	2.1	9.0			3.8	−0.8	2.8	4.5		2.3
2003 Q1	2.5	1.2	2.4	5.0			2.3	4.6	2.8	4.1		2.4
2003 Q2	3.2	0.3	2.5	1.1			2.3	−1.3	1.6	−1.4		2.5
2003 Q3	3.2	0.0	3.6	−1.0			3.0	−1.0	2.2	0.1		2.8
2003 Q4	3.1	−0.7	5.5	−0.6			3.6	4.7	3.8	5.2		3.4
2004 Q1	3.7	−0.2	5.0	5.4			4.2	1.0	3.5	3.6		3.5
2004 Q2	3.6	0.4	3.2	6.6			4.4	6.0	4.7	7.8		3.8
2004 Q3	3.4	0.5	2.7	8.4			3.5	6.8	4.2	8.0		3.1
2004 Q4	3.3	1.4	1.9	3.2			3.1	5.8	3.6	7.2		2.6
2005 Q1	2.4	2.6	1.5	0.1			2.5	3.5	2.7	5.2		2.1
2005 Q2	1.1	2.7	3.5	0.4			1.5	6.3	2.4	5.5		1.6
2005 Q3	1.2	3.2	3.1	1.6			1.6	9.7	3.2	8.5		1.8
2005 Q4	1.2	3.9	2.5	4.0			1.0	13.1	3.4	9.1		1.8
2006 Q1	0.9	5.0	3.3	5.7			1.9	23.2	6.2	18.8		2.4
2006 Q2	2.3	6.4	1.4	7.8			2.9	20.7	6.6	19.2		2.8
2006 Q3	2.0	6.6	1.3	7.9			3.4	1.5	3.0	3.0		3.0
2006 Q4	2.5	6.1	1.4	10.1			3.6	−2.4	2.3	−0.6		3.2
2007 Q1	3.3	3.7	0.9	9.2			3.7	−9.9	0.5	−7.4		3.1
2007 Q2	2.7	3.5	2.0	6.4			3.4	−11.7	−0.2	−10.3		3.2
2007 Q3	3.6	3.3	1.9	6.0			4.0	2.1	3.6	4.3		3.3

Notes:

Source: Office for National Statistics

1 Non-profit institutions serving households (NPISH).
2 This series includes a quarterly alignment adjustment.

Labour market summary

United Kingdom (thousands), seasonally adjusted

	All aged 16 and over								
	All	Total economically active	Total in employment	Unemployed	Economically inactive	Economic activity rate (%)	Employment rate (%)	Unemployment rate (%)	Economic inactivity rate (%)
	1	2	3	4	5	6	7	8	9
All persons	MGSL	MGSF	MGRZ	MGSC	MGSI	MGWG	MGSR	MGSX	YBTC
Aug–Oct 2005	47,925	30,331	28,830	1,501	17,594	63.3	60.2	4.9	36.7
Aug–Oct 2006	48,318	30,765	29,065	1,699	17,553	63.7	60.2	5.5	36.3
Nov–Jan 2007	48,420	30,787	29,090	1,697	17,633	63.6	60.1	5.5	36.4
Feb–Apr 2007	48,522	30,770	29,087	1,683	17,752	63.4	59.9	5.5	36.6
May–Jul 2007	48,624	30,833	29,178	1,656	17,791	63.4	60.0	5.4	36.6
Aug–Oct 2007	48,730	30,931	29,291	1,640	17,799	63.5	60.1	5.3	36.5
Male	MGSM	MGSG	MGSA	MGSD	MGSJ	MGWH	MGSS	MGSY	YBTD
Aug–Oct 2005	23,244	16,438	15,550	888	6,806	70.7	66.9	5.4	29.3
Aug–Oct 2006	23,466	16,679	15,697	982	6,787	71.1	66.9	5.9	28.9
Nov–Jan 2007	23,523	16,687	15,716	971	6,837	70.9	66.8	5.8	29.1
Feb–Apr 2007	23,580	16,707	15,736	971	6,873	70.9	66.7	5.8	29.1
May–Jul 2007	23,638	16,734	15,783	951	6,904	70.8	66.8	5.7	29.2
Aug–Oct 2007	23,696	16,757	15,832	925	6,939	70.7	66.8	5.5	29.3
Female	MGSN	MGSH	MGSB	MGSE	MGSK	MGWI	MGST	MGSZ	YBTE
Aug–Oct 2005	24,681	13,893	13,280	613	10,788	56.3	53.8	4.4	43.7
Aug–Oct 2006	24,852	14,086	13,368	717	10,766	56.7	53.8	5.1	43.3
Nov–Jan 2007	24,897	14,101	13,374	727	10,796	56.6	53.7	5.2	43.4
Feb–Apr 2007	24,942	14,063	13,350	712	10,879	56.4	53.5	5.1	43.6
May–Jul 2007	24,987	14,099	13,394	705	10,887	56.4	53.6	5.0	43.6
Aug–Oct 2007	25,035	14,174	13,459	715	10,860	56.6	53.8	5.0	43.4

	All aged 16 to 59/64								
	All	Total economically active	Total in employment	Unemployed	Economically inactive	Economic activity rate (%)	Employment rate (%)	Unemployment rate (%)	Economic inactivity rate (%)
	10	11	12	13	14	15	16	17	18
All persons	YBTF	YBSK	YBSE	YBSH	YBSN	MGSO	MGSU	YBTI	YBTL
Aug–Oct 2005	37,129	29,213	27,735	1,478	7,917	78.7	74.7	5.1	21.3
Aug–Oct 2006	37,401	29,554	27,882	1,672	7,846	79.0	74.5	5.7	21.0
Nov–Jan 2007	37,453	29,562	27,887	1,675	7,891	78.9	74.5	5.7	21.1
Feb–Apr 2007	37,505	29,534	27,875	1,658	7,971	78.7	74.3	5.6	21.3
May–Jul 2007	37,557	29,583	27,954	1,629	7,974	78.8	74.4	5.5	21.2
Aug–Oct 2007	37,608	29,650	28,035	1,615	7,958	78.8	74.5	5.4	21.2
Male	YBTG	YBSL	YBSF	YBSI	YBSO	MGSP	MGSV	YBTJ	YBTM
Aug–Oct 2005	19,222	16,052	15,175	877	3,170	83.5	78.9	5.5	16.5
Aug–Oct 2006	19,402	16,270	15,299	971	3,133	83.9	78.9	6.0	16.1
Nov–Jan 2007	19,446	16,279	15,316	963	3,168	83.7	78.8	5.9	16.3
Feb–Apr 2007	19,490	16,296	15,336	960	3,195	83.6	78.7	5.9	16.4
May–Jul 2007	19,534	16,308	15,368	940	3,226	83.5	78.7	5.8	16.5
Aug–Oct 2007	19,572	16,333	15,418	915	3,239	83.4	78.8	5.6	16.6
Female	YBTH	YBSM	YBSG	YBSJ	YBSP	MGSQ	MGSW	YBTK	YBTN
Aug–Oct 2005	17,908	13,160	12,560	600	4,747	73.5	70.1	4.6	26.5
Aug–Oct 2006	17,998	13,285	12,583	701	4,714	73.8	69.9	5.3	26.2
Nov–Jan 2007	18,007	13,283	12,571	712	4,723	73.8	69.8	5.4	26.2
Feb–Apr 2007	18,015	13,238	12,539	698	4,777	73.5	69.6	5.3	26.5
May–Jul 2007	18,023	13,275	12,586	689	4,748	73.7	69.8	5.2	26.3
Aug–Oct 2007	18,035	13,317	12,618	699	4,718	73.8	70.0	5.3	26.2

Notes:

Relationship between columns: 1 = 2 + 5; 2 = 3 + 4; 6 = 2/1; 7 = 3/1; 8 = 4/2;
9 = 5/1; 10 = 11 + 14; 11 = 12 + 13; 15 = 11/10; 16 = 12/10; 17 = 13/11; 18 = 14/10

Source: Labour Force Survey, Office for National Statistics
Labour Market Statistics Helpline: 01633 456901

Prices

Last updated: 18/12/07

Percentage change over 12 months

| | Consumer prices | | | | | | Not seasonally adjusted, except for series PLLW, RNPE and RNPF Producer prices | | | |
| | Consumer prices index (CPI) | | | Retail prices index (RPI) | | | Output prices | | Input prices | |
	All items	CPI excluding indirect taxes (CPIY)[1]	CPI at constant tax rates (CPI-CT)	All items	All items excluding mortgage interest payments (RPIX)	All items excluding mortgage interest payments and indirect taxes (RPIY)[2]	All manufactured products	Excluding food, beverages, tobacco and petroleum products	Materials and fuels purchased by manufacturing industry	Excluding food, beverages, tobacco and petroleum products
	D7G7	EL2S	EAD6	CZBH	CDKQ	CBZX	PLLU[3]	PLLW[3]	RNPE[3]	RNPF[3]
2003 Jan	1.3			2.9	2.7	2.9	1.3	0.9	1.7	−2.2
2003 Feb	1.6			3.2	3.0	3.1	1.5	1.1	2.5	−2.0
2003 Mar	1.5			3.1	3.0	3.2	2.1	1.3	0.8	−1.5
2003 Apr	1.4			3.1	3.0	2.9	1.6	1.3	−1.3	−0.6
2003 May	1.3			3.0	2.9	2.7	1.1	1.2	−0.1	−0.2
2003 Jun	1.1			2.9	2.8	2.7	1.1	1.2	0.0	−1.2
2003 Jul	1.3			3.1	2.9	2.8	1.3	1.3	0.6	−0.5
2003 Aug	1.4			2.9	2.9	2.7	1.5	1.2	1.9	0.0
2003 Sep	1.4			2.8	2.8	2.7	1.4	1.4	1.3	1.0
2003 Oct	1.4			2.6	2.7	2.4	1.5	1.3	2.5	1.2
2003 Nov	1.3			2.5	2.5	2.1	1.7	1.4	4.6	1.7
2003 Dec	1.3	1.1	1.1	2.8	2.6	2.2	1.8	1.5	2.0	0.4
2004 Jan	1.4	1.5	1.3	2.6	2.4	2.0	1.6	1.4	−0.3	0.0
2004 Feb	1.3	1.3	1.1	2.5	2.3	1.9	1.6	1.5	−0.8	−0.4
2004 Mar	1.1	1.1	1.0	2.6	2.1	1.7	1.4	1.5	0.8	−0.1
2004 Apr	1.1	1.1	1.0	2.5	2.0	1.8	1.8	1.3	2.9	−0.1
2004 May	1.5	1.4	1.3	2.8	2.3	2.2	2.5	1.4	5.6	0.6
2004 Jun	1.6	1.5	1.4	3.0	2.3	2.3	2.6	1.4	3.8	1.3
2004 Jul	1.4	1.4	1.2	3.0	2.2	2.0	2.6	1.7	3.9	1.8
2004 Aug	1.3	1.3	1.1	3.2	2.2	2.0	2.8	2.2	4.6	2.4
2004 Sep	1.1	1.0	0.9	3.1	1.9	1.7	3.1	2.3	8.1	3.6
2004 Oct	1.2	1.2	1.1	3.3	2.1	2.0	3.5	2.9	9.0	4.6
2004 Nov	1.5	1.4	1.4	3.4	2.2	2.2	3.5	3.0	6.4	4.5
2004 Dec	1.7	1.7	1.6	3.5	2.5	2.5	2.9	2.5	4.0	4.0
2005 Jan	1.6	1.7	1.5	3.2	2.1	2.0	2.6	2.6	9.7	7.5
2005 Feb	1.7	1.7	1.6	3.2	2.1	2.0	2.7	2.5	11.0	8.2
2005 Mar	1.9	2.0	1.8	3.2	2.4	2.3	2.9	2.4	11.1	7.4
2005 Apr	1.9	2.0	1.9	3.2	2.3	2.3	3.3	2.6	10.1	7.0
2005 May	1.9	2.0	1.8	2.9	2.1	2.2	2.7	2.5	7.6	6.7
2005 Jun	2.0	2.2	1.9	2.9	2.2	2.2	2.5	2.2	11.8	7.4
2005 Jul	2.3	2.5	2.3	2.9	2.4	2.5	3.1	2.2	14.1	8.7
2005 Aug	2.4	2.6	2.3	2.8	2.3	2.3	3.0	1.9	13.0	7.6
2005 Sep	2.5	2.6	2.4	2.7	2.5	2.5	3.3	2.1	10.6	5.6
2005 Oct	2.3	2.5	2.3	2.5	2.4	2.3	2.6	1.4	8.8	7.0
2005 Nov	2.1	2.3	2.1	2.4	2.3	2.3	2.3	1.3	13.5	9.6
2005 Dec	1.9	2.1	1.8	2.2	2.0	2.0	2.4	1.8	17.9	12.0
2006 Jan	1.9	2.1	1.9	2.4	2.3	2.3	2.9	1.7	15.8	10.2
2006 Feb	2.0	2.1	2.0	2.4	2.3	2.3	2.9	1.7	15.0	10.6
2006 Mar	1.8	1.9	1.7	2.4	2.1	2.2	2.5	1.9	13.0	10.0
2006 Apr	2.0	2.1	2.0	2.6	2.4	2.3	2.5	2.2	15.3	10.0
2006 May	2.2	2.3	2.2	3.0	2.9	2.8	3.1	2.4	13.6	8.6
2006 Jun	2.5	2.6	2.4	3.3	3.1	3.2	3.4	2.9	11.1	8.7
2006 Jul	2.4	2.4	2.3	3.3	3.1	3.2	2.9	2.5	10.6	8.3
2006 Aug	2.5	2.6	2.4	3.4	3.3	3.4	2.7	2.3	8.0	7.9
2006 Sep	2.4	2.6	2.3	3.6	3.2	3.3	1.9	2.2	5.4	7.4
2006 Oct	2.4	2.7	2.3	3.7	3.2	3.3	1.6	2.6	4.6	6.3
2006 Nov	2.7	3.0	2.6	3.9	3.4	3.6	1.8	2.5	3.4	4.9
2006 Dec	3.0	3.2	2.9	4.4	3.8	3.9	2.2	2.4	2.5	3.1
2007 Jan	2.7	2.9	2.6	4.2	3.5	3.7	2.2	2.5	−2.1	1.5
2007 Feb	2.8	2.9	2.6	4.6	3.7	3.9	2.3	2.7	−1.1	1.4
2007 Mar	3.1	3.1	2.9	4.8	3.9	4.0	2.7	2.8	0.7	2.4
2007 Apr	2.8	2.9	2.6	4.5	3.6	3.7	2.4	2.4	−0.9	1.9
2007 May	2.5	2.6	2.3	4.3	3.3	3.4	2.4	2.2	1.2	3.6
2007 Jun	2.4	2.5	2.2	4.4	3.3	3.3	2.5	2.1	2.4	3.3
2007 Jul	1.9	2.0	1.7	3.8	2.7	2.6	2.5	2.2	0.6	1.5
2007 Aug	1.8	1.9	1.6	4.1	2.7	2.6	2.4	2.4	1.1	2.0
2007 Sep	1.8	1.7	1.6	3.9	2.8	2.8	2.9	2.2	7.2	3.5
2007 Oct	2.1	1.9	1.8	4.2	3.1	3.0	3.9	2.3	9.0	2.8
2007 Nov	2.1	1.9	1.8	4.3	3.2	3.0	4.5	2.2	10.2	1.7

Notes:

Source: Office for National Statistics

1 The taxes excluded are VAT, duties, insurance premium tax, air passenger duty and stamp duty on share transactions.
2 The taxes excluded are council tax, VAT, duties, vehicle excise duty, insurance premium tax and air passenger duty.
3 Derived from these identification (CDID) codes.

Identification (CDID) codes

The four-character identification code at the top of each alpha column of data is the ONS reference for that series of data on our time series database. Please quote the relevant code if you contact us about the data.

Conventions

Where figures have been rounded to the final digit, there may be an apparent slight discrepancy between the sum of the constituent items and the total shown. Although figures may be given in unrounded form to facilitate readers' calculation of percentage changes, rates of change, etc, this does not imply that the figures can be estimated to this degree of precision as they may be affected by sampling variability or imprecision in estimation methods.

The following standard symbols are used:

- ..   not available
- -   nil or negligible
- P   provisional
- –   break in series
- R   revised
- r   series revised from indicated entry onwards

CONCEPTS AND DEFINITIONS

Labour Force Survey 'monthly' estimates

Labour Force Survey (LFS) results are three-monthly averages, so consecutive months' results overlap. Comparing estimates for overlapping three-month periods can produce more volatile results, which can be difficult to interpret.

Labour market summary

Economically active

People aged 16 and over who are either in employment or unemployed.

Economically inactive

People who are neither in employment nor unemployed. This includes those who want a job but have not been seeking work in the last four weeks, those who want a job and are seeking work but not available to start work, and those who do not want a job.

Employment and jobs

There are two ways of looking at employment: the number of people with jobs, or the number of jobs. The two concepts are not the same as one person can have more than one job. The number of people with jobs is measured by the Labour Force Survey (LFS) and includes people aged 16 or over who do paid work (as an employee or self-employed), those who have a job that they are temporarily away from, those on government-supported training and employment programmes, and those doing unpaid family work. The number of jobs is measured by workforce jobs and is the sum of employee jobs (as measured by surveys of employers), self-employment jobs from the LFS, people in HM Forces, and government-supported trainees. Vacant jobs are not included.

Unemployment

The number of unemployed people in the UK is measured through the Labour Force Survey following the internationally agreed definition recommended by the ILO (International Labour Organisation) – an agency of the United Nations.

Unemployed people:
- are without a job, want a job, have actively sought work in the last four weeks and are available to start work in the next two weeks, or
- are out of work, have found a job and are waiting to start it in the next two weeks

Other key indicators

Claimant count

The number of people claiming Jobseeker's Allowance benefits.

Earnings

A measure of the money people receive in return for work done, gross of tax. It includes salaries and, unless otherwise stated, bonuses but not unearned income, benefits in kind or arrears of pay.

Productivity

Whole economy output per worker is the ratio of Gross Value Added (GVA) at basic prices and Labour Force Survey (LFS) total employment. Manufacturing output per filled job is the ratio of manufacturing output (from the Index of Production) and productivity jobs for manufacturing (constrained to LFS jobs at the whole economy level).

Redundancies

The number of people who:

- were not in employment during the reference week, and
- reported that they had been made redundant in the month of, or the two calendar months prior to, the reference week

plus the number of people who:

- were in employment during the reference week, and
- started their job in the same calendar month as, or the two calendar months prior to, the reference week, and
- reported that they had been made redundant in the month of, or the two calendar months prior to, the reference week

Unit wage costs

A measure of the cost of wages and salaries per unit of output.

Vacancies

The statistics are based on ONS's Vacancy Survey of businesses. The survey is designed to provide comprehensive estimates of the stock of vacancies across the economy, excluding those in agriculture, forestry and fishing. Vacancies are defined as positions for which employers are actively seeking recruits from outside their business or organisation. More information on labour market concepts, sources and methods is available in the *Guide to Labour Market Statistics* at www.statistics.gov.uk/about/data/guides/LabourMarket/default.asp

Directory of online tables

The tables listed below are available as Excel spreadsheets via weblinks accessible from the main *Economic & Labour Market Review* (ELMR) page of the National Statistics website. Tables in sections 1, 3, 4 and 5 replace equivalent ones formerly published in *Economic Trends*, although there are one or two new tables here; others have been expanded to include, as appropriate, both unadjusted/seasonally adjusted, and current price/chained volume measure variants. Tables in sections 2 and 6 were formerly in *Labour Market Trends*. The opportunity has also been taken to extend the range of dates shown in many cases, as the online tables are not constrained by page size.

In the online tables, the four-character identification codes at the top of each data column correspond to the ONS reference for that series on our time series database. The latest data sets for the old *Economic Trends* tables and the Labour Market Statistics First Release tables are still available on this database via the 'Time Series Data' link on the National Statistics main web page. These data sets can also be accessed from links at the bottom of each section's table listings via the 'Data tables' link in the individual ELMR edition pages on the website.

Weblink: www.statistics.gov.uk/elmr/01_08/data_page.asp

Title	Frequency of update	Updated since last month
UK economic accounts		
1.01 National accounts aggregates	M	✔
1.02 Gross domestic product and gross national income	M	✔
1.03 Gross domestic product, by category of expenditure	M	✔
1.04 Gross domestic product, by category of income	M	✔
1.05 Gross domestic product and shares of income and expenditure	M	✔
1.06 Income, product and spending per head	Q	✔
1.07 Households' disposable income and consumption	M	✔
1.08 Household final consumption expenditure	M	✔
1.09 Gross fixed capital formation	M	✔
1.10 Gross value added, by category of output	M	✔
1.11 Gross value added, by category of output: service industries	M	✔
1.12 Summary capital accounts and net lending/net borrowing	Q	✔
1.13 Private non-financial corporations: allocation of primary income account	Q	✔
1.14 Private non-financial corporations: secondary distribution of income account and capital account	Q	✔
1.15 Balance of payments: current account	M	✔
1.16 Trade in goods (on a balance of payments basis)	M	✔
1.17 Measures of variability of selected economic series	Q	•
1.18 Index of services	M	✔
Selected labour market statistics		
2.01 Summary of Labour Force Survey data	M	✔
2.02 Employment by age	M	✔
2.03 Full-time, part-time and temporary workers	M	✔
2.04 Public and private sector employment	Q	✔
2.05 Workforce jobs	Q	✔
2.06 Workforce jobs by industry	Q	✔
2.07 Actual weekly hours of work	M	✔
2.08 Usual weekly hours of work	M	✔
2.09 Unemployment by age and duration	M	✔
2.10 Claimant count levels and rates	M	✔
2.11 Claimant count by age and duration	M	✔
2.12 Economic activity by age	M	✔
2.13 Economic inactivity by age	M	✔
2.14 Economic inactivity: reasons	M	✔
2.15 Educational status, economic activity and inactivity of young people	M	✔
2.16 Average earnings – including bonuses	M	✔
2.17 Average earnings – excluding bonuses	M	✔
2.18 Productivity and unit wage costs	M	✔
2.19 Regional labour market summary	M	✔

Weblink: www.statistics.gov.uk/elmr/01_08/data_page.asp

2.20	International comparisons	M	✔
2.21	Labour disputes	M	✔
2.22	Vacancies	M	✔
2.23	Vacancies by industry	M	✔
2.24	Redundancies: levels and rates	M	✔
2.25	Redundancies: by industry	Q	•
2.26	Sampling variability for headline labour market statistics	M	✔

Prices

3.01	Producer and consumer prices	M	✔
3.02	Harmonised Indices of Consumer Prices: EU comparisons	M	✔

Selected output and demand indicators

4.01	Output of the production industries	M	✔
4.02	Engineering and construction: output and orders	M	✔
4.03	Motor vehicle and steel production	M	✔
4.04	Indicators of fixed investment in dwellings	M	✔
4.05	Number of property transactions	M	✔
4.06	Change in inventories	Q	✔
4.07	Inventory ratios	Q	•
4.08	Retail sales, new registrations of cars and credit business	M	✔
4.09	Inland energy consumption: primary fuel input basis	M	✔

Selected financial statistics

5.01	Sterling exchange rates and UK reserves	M	✔
5.02	Monetary aggregates	M	✔
5.03	Counterparts to changes in money stock M4	M	✔
5.04	Public sector receipts and expenditure	Q	✔
5.05	Public sector key fiscal indicators	M	✔
5.06	Consumer credit and other household sector borrowing	M	✔
5.07	Analysis of bank lending to UK residents	M	•
5.08	Interest rates and yields	M	✔
5.09	A selection of asset prices	M	✔

Further labour market statistics

6.01	Working-age households	A	•
6.02	Local labour market indicators by unitary and local authority	Q	•
6.03	Employment by occupation	Q	•
6.04	Employee jobs by industry	M	✔
6.05	Employee jobs by industry division, class or group	Q	✔
6.06	Employee jobs by region and industry	Q	•
6.07	Key productivity measures by industry	M	✔
6.08	Total workforce hours worked per week	Q	•
6.09	Total workforce hours worked per week by region and industry group	Q	•
6.10	Job-related training received by employees	Q	✔
6.11	Unemployment rates by previous occupation	Q	✔

Weblink: www.statistics.gov.uk/elmr/01_08/data_page.asp

6.12	Average Earnings Index by industry: excluding and including bonuses	M	✔
6.13	Average Earnings Index: effect of bonus payments by main industrial sector	M	✔
6.14	Median earnings and hours by main industrial sector	A	•
6.15	Median earnings and hours by industry section	A	•
6.16	Index of wages per head: international comparisons	M	✔
6.17	Regional Jobseeker's Allowance claimant count rates	M	✔
6.18	Claimant count area statistics: counties, unitary and local authorities	M	✔
6.19	Claimant count area statistics: UK parliamentary constituencies	M	✔
6.20	Claimant count area statistics: constituencies of the Scottish Parliament	M	✔
6.21	Jobseeker's Allowance claimant count flows	M	✔
6.22	Number of previous Jobseeker's Allowance claims	Q	•
6.23	Interval between Jobseeker's Allowance claims	Q	•
6.24	Average duration of Jobseeker's Allowance claims by age	Q	✔
6.25	Vacancies by size of enterprise	M	✔
6.26	Redundancies: re-employment rates	Q	•
6.27	Redundancies by Government Office Region	Q	•
6.28	Redundancy rates by industry	Q	•
6.29	Labour disputes: summary	M	✔
6.30	Labour disputes: stoppages in progress	M	✔

Notes

A Annually
Q Quarterly
M Monthly

More information
Time series are available from www.statistics.gov.uk/statbase/tsdintro.asp
Subnational labour market data are available from www.statistics.gov.uk/statbase/Product.asp?vlnk=14160 and www.nomisweb.co.uk
Labour Force Survey tables are available from www.statistics.gov.uk/statbase/Product.asp?vlnk=14365
Annual Survey of Hours and Earnings data are available from www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101

Contact points

Recorded announcement of latest RPI
☎ 01633 456961
✉ rpi@ons.gsi.gov.uk

Labour Market Statistics Helpline
☎ 01633 456901
✉ labour.market@ons.gsi.gov.uk

Earnings Customer Helpline
☎ 01633 819024
✉ earnings@ons.gsi.gov.uk

National Statistics Customer Contact Centre
☎ 0845 601 3034
✉ info@statistics.gsi.gov.uk

Skills and Education Network
☎ 024 7682 3439
✉ senet@lsc.gov.uk

Department for Children, Schools and Families Public Enquiry Unit
☎ 0870 000 2288

For statistical information on

Average Earnings Index (monthly)
☎ 01633 819024

Claimant count
☎ 01633 456901

Consumer Prices Index
☎ 01633 456900
✉ cpi@ons.gsi.gov.uk

Earnings
Annual Survey of Hours and Earnings
☎ 01633 819024

Basic wage rates and hours for manual workers with a collective agreement
☎ 01633 819008

Low-paid workers
☎ 01633 819024
✉ lowpay@ons.gsi.gov.uk

Labour Force Survey
☎ 01633 456901
✉ labour.market@ons.gsi.gov.uk

Economic activity and inactivity
☎ 01633 456901

Employment
Labour Force Survey
☎ 01633 456901
✉ labour.market@ons.gsi.gov.uk

Employee jobs by industry
☎ 01633 812318

Total workforce hours worked per week
☎ 01633 812766
✉ productivity@ons.gsi.gov.uk

**Workforce jobs series –
short-term estimates**
☎ 01633 812318
✉ workforce.jobs@ons.gsi.gov.uk

Labour costs
☎ 01633 819024

Labour disputes
☎ 01633 819205

Labour Force Survey
☎ 01633 456901
✉ labour.market@ons.gsi.gov.uk

Labour Force Survey Data Service
☎ 01633 455732
✉ lfs.dataservice@ons.gsi.gov.uk

New Deal
☎ 0114 209 8228

Productivity and unit wage costs
☎ 01633 812766

Public sector employment
General enquiries
☎ 01633 455889

Source and methodology enquiries
☎ 01633 812865

Qualifications (Department for Children, Schools and Families)
☎ 0870 000 2288

Redundancy statistics
☎ 01633 456901

Retail Prices Index
☎ 01633 456900
✉ rpi@ons.gsi.gov.uk

Skills (Department for Innovation, Universities & Skills)
☎ 0870 001 0336
Skill needs surveys and research into skill shortages
☎ 0870 001 0336

Small firms (BERR)
Enterprise Directorate
☎ 0114 279 4439

Subregional estimates
☎ 01633 812038

✉ **Annual employment statistics**
annual.employment.figures@ons.gsi.gov.uk

**Annual Population Survey,
local area statistics**
☎ 020 7533 6130

Trade unions (BERR)
Employment relations
☎ 020 7215 5934

Training
Adult learning – work-based training (DWP)
☎ 0114 209 8236

Employer-provided training (Department for Innovation, Universities & Skills)
☎ 0870 001 0336

Travel-to-Work Areas
Composition and review
☎ 020 7533 6114

Unemployment
☎ 01633 456901

Vacancies
**Vacancy Survey:
total stocks of vacancies**
☎ 01633 455070

ONS economic and labour market publications

ANNUAL

Financial Statistics Explanatory Handbook

2008 edition. Palgrave Macmillan, ISBN 0-230-52583-2. Price £47.50.

www.statistics.gov.uk/products/p4861.asp

Foreign Direct Investment (MA4)

2005 edition

www.statistics.gov.uk/products/p9614.asp

Input-Output analyses for the United Kingdom

2006 edition

www.statistics.gov.uk/products/p7640.asp

Research and development in UK businesses (MA14)

2005 edition

www.statistics.gov.uk/statbase/product.asp?vlnk=165

Share Ownership

2006 edition

www.statistics.gov.uk/products/p930.asp

United Kingdom Balance of Payments (Pink Book)

2007 edition. Palgrave Macmillan, ISBN 978-1-4039-9397-7. Price £49.50.

www.statistics.gov.uk/products/p1140.asp

United Kingdom National Accounts (Blue Book)

2007 edition. Palgrave Macmillan, ISBN 978-1-4039-9398-4. Price £49.50.

www.statistics.gov.uk/products/p1143.asp

First releases

- Annual survey of hours and earnings
- Foreign direct investment
- Gross domestic expenditure on research and development
- Low pay estimates
- Regional gross value added
- Share ownership
- UK Business enterprise research and development
- Work and worklessness among households

QUARTERLY

Consumer Trends

2007 quarter 3

www.statistics.gov.uk/products/p242.asp

United Kingdom Economic Accounts

2007 quarter 3. Palgrave Macmillan, ISBN 978-0-230-20565-9. Price £35.

www.statistics.gov.uk/products/p1904.asp

UK trade in goods analysed in terms of industry (MQ10)

2007 quarter 3

www.statistics.gov.uk/products/p731.asp

First releases

- Balance of payments
- Business investment
- GDP preliminary estimate
- Government deficit and debt under the Maastricht Treaty (six-monthly)
- International comparisons of productivity (six-monthly)
- Internet connectivity
- Investment by insurance companies, pension funds and trusts
- Productivity
- Profitability of UK companies
- Public sector employment
- Quarterly National Accounts
- UK output, income and expenditure

MONTHLY

Financial Statistics

December 2007. Palgrave Macmillan, ISBN 978-0-230-52595-5. Price £45.

www.statistics.gov.uk/products/p376.asp

Focus on Consumer Price Indices

November 2007

www.statistics.gov.uk/products/p867.asp

Monthly review of external trade statistics (MM24)

November 2007

www.statistics.gov.uk/products/p613.asp

Producer Price Indices (MM22)

November 2007

www.statistics.gov.uk/products/p2208.asp

First releases

- Consumer price Indices
- Index of production
- Index of services
- Labour market statistics
- Labour market statistics: regional
- Producer prices
- Public sector finances
- Retail sales
- UK trade

OTHER

The ONS Productivity Handbook: a statistical overview and guide

Palgrave Macmillan, ISBN 978-0-230-57301-7. Price £55.

www.statistics.gov.uk/about/data/guides/productivity/default.asp

Labour Market Review

2006 edition. Palgrave Macmillan, ISBN 1-4039-9735-7. Price £40.

www.statistics.gov.uk/products/p4315.asp

National Accounts Concepts, Sources and Methods

www.statistics.gov.uk/products/p1144.asp

Sector classification guide (MA23)

www.statistics.gov.uk/products/p7163.asp

Recent articles

JULY 2007

Publishing productivity measures in ONS
Dawn Camus

Following the Atkinson Review: the quality of public sector output
Martin Weale

Measuring innovation and productivity in a knowledge-based service economy
Jonathan Haskel

Multi-factor productivity analysis
Peter Goodridge

Volume of capital services: estimates for 1950 to 2005
Gavin Wallis

What is known about numbers and 'earnings' of the self-employed?
Catrin Ormerod

Services producer price index (experimental) – first quarter 2007
Ian Richardson

AUGUST 2007

Forecasting GDP using external data sources
Graeme Chamberlin

Measures of accuracy for the Index of Production
Robin Youll, Neil Parkin and Chris Hunt

Introduction of automatic occupation coding in ASHE
James Scruton

International comparisons of productivity: the current and constant PPP approach
Sumit Dey-Chowdhury

Measuring government output: issues for Children's Social Care Services
Jean Soper, Lisa Holmes and Enliz D'souza

Regional economic indicators, August 2007, with a focus on differences in sub-regional economic performance
Claire Swadkin and David Hastings

SEPTEMBER 2007

Globalisation: what are the main statistical challenges?
Karen Dunnell, Fernando Galindo-Rueda and Richard Laux

New labour productivity measures from the ABI – 1998 to 2005
Peter Goodridge

Indicators to measure trade union membership, strikes and lockouts in the UK
Derek Bird

A preliminary analysis of the difference between AWE and the AEI
Harry Duff

Mapping trends in the care workforce using SOC 1990 and SOC 2000
Antonia Simon and Charlie Owen

Methods explained: data reduction and model selection techniques
Graeme Chamberlin

OCTOBER 2007

Using administrative data for statistical purposes
Stephen Penneck

The treatment of pensions in the National Accounts
Sumit Rahman

Measuring the quality of the producer price index
John Morris and Tegwen Green

GDP(O) revisions analysis system: overview and indicative results
Hilary Mainwaring and Hugh Skipper

The effects of bonuses on earnings growth in 2007
Harry Duff

Measuring societal wellbeing
Paul Allin

Services producer price index (experimental) – second quarter 2007
Ian Richardson

NOVEMBER 2007

UK environmental accounts: air emissions and energy use
Ian Gazley

Revisions to quarterly GDP growth and its components
Ross Meader

Civil Service employment statistics 2006
Donna Livesey, Craig Taylor and Pete Jones

Using the FRS to examine employment trends of couples
Antonia Simon and Elizabeth Whiting

Regional economic indicators, November 2007, with a focus on rural and urban differences in the English regions
Claire Swadkin, Barbara Louca and Dev Virdee

DECEMBER 2007

Developing an R&D satellite account for the UK: a preliminary analysis
Fernando Galindo-Rueda

New LFS questions on economic inactivity
Katherine Kent

Volume of capital services: estimates for 1950 to 2006
Gavin Wallis and Sumit Dey-Chowdhury

Quality-adjusted labour input: estimates for 1996 to 2006
Sumit Dey-Chowdhury and Peter Goodridge

Methods explained: forecasting
John Wood and Duncan Elliott

Future articles

List is provisional and subject to change.

FEBRUARY 2008

Improvements to the measurement of government output in the National Accounts

Patterns of pay: results of the Annual Survey of Hours and Earnings 1997 to 2007

Linking ASHE and Census data

Evidence of compensational differentials in the UK

The international comparison programme: 2005 results and supporting the programme