

Economic & Labour Market Review

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The Director of ONS is also the National Statistician.

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In brief

Regional GVA using the production approach

For the first time, it is possible to produce a regional GVA time series at constant prices. This follows the compilation of regional Gross Value Added (GVA) using the production approach which will allow for a series of regional GVA data that can be deflated. Details of the methodology followed were described in an article published in 2007 (see More Information for a reference and link to this paper).

First experimental results were obtained in 2008. These use the Annual Business Inquiry 2 (ABI2) as a major source for GVA, turnover, and production data for the majority of industries.

Initial results raised issues of data quality. In particular some industries showed an unexpected bias towards production in the London region. It has not yet proved possible to establish whether such effects are genuine, reflecting the true geographical distribution of a business's production units, or whether they are artificial effects of regional estimation methodology. It is a crucial data quality parameter for the GVA(P) project that any differences between regions reflected in the final figures are genuine.

The ABI2 is a sample survey collecting data at enterprise level only. A modelling procedure is applied to the returned data to apportion them between the constituent local units; these apportioned values are then weighted to produce the published estimates. The model has been investigated and tested and it has been established that it is robust to amendments. This suggests that the current method makes good use of the available data and that, without additional local level data, there seems to be no amendment to the model that would lead to a better apportionment.

For this reason, further development of the regional GVA (P) project await the production of first estimates using local unit turnover data from the Business Register and Employment Survey (BRES) project. This new survey, which was piloted in 2008 and is currently being implemented UK-wide, should improve the ABI2 apportionment methodology. It will allow a more accurate apportionment of data to local units based on information returned by the respondents.

It is expected that the new regional estimates, based on an apportionment methodology that uses BRES data, when available, will give insight into the data quality issues that currently affect the experimental GVA(P) data and will lead to their resolution.

Current plans are that an improved experimental GVA(P) data series, based on the 2009 first full BRES collection, will be produced in 2011. In the interim, further exploration of the data quality issues may be possible - informed by the results of the 2008 BRES pilot. This may enable us to publish some initial estimates in 2010.

More information

Murphy J, Till D and Marais J (2007) 'Allsopp regional GVA(P) project: methods development of regional GVA on a production basis', ONS

This article can be accessed via the following page:

www.ons.gov.uk/about-statistics/development-programmes/allsopp-programme/index.html

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Pension Trends update

Low paid employees are far less likely to belong to pension schemes than higher paid employees, according to analysis from Pension Trends. The findings were published as part of Pension Trends Chapter 7: Private Pension Scheme Membership on 28 May 2009

In 2008, the analysis found that for full-time employees in the UK:

- 21 per cent of men and 32 per cent of women with gross weekly earnings of less than £300 were members of an employer-sponsored pension scheme, while
- 76 per cent of men and 82 per cent of women on gross weekly earnings of £600 and over belonged to an employer-sponsored pension scheme.

The proportion of women full-time employees with an employer-sponsored

pension scheme was greater than for men in all earnings bands. This is in part because there are a higher proportion of women than men employed in the public sector, where participation in employer pension schemes is higher than in the private sector.

The analysis, published in Pension Trends, uses data from the Annual Survey of Hours and Earnings (ASHE). Employer-sponsored pension schemes in ASHE include occupational pension schemes, group personal pensions and stakeholder pension schemes.

The ASHE data shows that in 2008:

- 1.7 million male full-time employee jobs were paid at less than £300 per week, and 1.3 million of these (79 per cent) had no employer-sponsored pension scheme.
- 1.9 million female full-time employee jobs were paid at less than £300 per week, and 1.3 million of these (68 per cent) had no employer-sponsored pension scheme.

The Pensions Act 2008 contained measures designed to increase pension participation by employees, especially low earners. These measures will be implemented from 2012, and future editions of Pension Trends will record their impact.

More information

www.statistics.gov.uk/pensiontrends/

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UK Environmental Accounts

The level of greenhouse gas emissions created by the UK economy fell 4.4 per cent in 2007. The findings, published in the latest UK Environmental Accounts are based on the level of greenhouse gas emissions created per unit of output (emissions intensity) by the UK economy (excluding households).

Emissions intensity in the electricity, gas and water supply industry decreased 3.0 per cent in 2007 with emissions falling despite growth in the sector, reflecting

the continuing switch away from coal to other forms of electricity generation such as natural gas combustion. Emissions intensity fell by 3.7 per cent in transport and communications, 2.7 per cent in manufacturing and 2.1 per cent in agriculture. These four industry sectors accounted for over 80 per cent of emissions of greenhouse gases by the UK economy.

Much of the period 1990 to 2007 has seen strong economic growth in the UK. Allowing for this growth, there have been substantial improvements in emissions intensity across the non-household sector with 2007 levels of emissions per unit of output 46.9 per cent below those in 1990.

Overall, falls in emissions intensity have more than offset growth so overall emissions dropped. Between 1990 and 2007, greenhouse gas emissions fell 12.6 per cent, with a 16.7 per cent fall in emissions from UK companies and the public sector.

Emissions from the household sector (which accounts for approximately a fifth of total emissions) have increased 6.3 per cent since 1990 but the trend has started to reverse in the last three years with a 2.6 per cent fall in 2007, mainly driven by a fall in energy consumed for domestic heating.

The Environmental Accounts 2009 was published on the National Statistics website on 12 June 2009. It also contains updates on atmospheric pollutants other than greenhouse gases, energy consumption, environmental taxes and general waste arising in the UK.

Also available are a series of online datasets providing greater industry sector detail, for example, emissions of greenhouse gases by 93 industries. These can be accessed via the 'Focus on Environmental Accounts' page.

The December 2009 update of the Environmental Accounts 2009 will feature new statistics on material productivity, oil and gas reserves and expenditure on environmental protection.

More information

www.statistics.gov.uk/focuson/environmental/

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Total public sector output and productivity

The latest estimates of Total Public Service productivity covering the decade from 1997 to 2007 have been published – the first time a single indicator for Total Public Service has been calculated since 2003. The estimates were published on 9 June 2009 by the ONS Centre for the Measurement of Government Activity (UKCeMGA).

The study showed that after four consecutive years of falling Total Public Service productivity between 2002 and 2005, productivity grew in both 2006 and 2007. In 2002, 2003, 2004 and 2005, total productivity growth was negative, with annual rates of -1.3 -1.5, -0.3 and -0.4 per cent respectively. In 2006 productivity returned to positive growth of 0.8 per cent, followed by 0.6 per cent in 2007 – the most recent year for which figures are available.

In the period 1997 to 2007:

- the output of Total Public Service rose by 33.6 per cent, an annual average growth of 2.9 per cent
- total GDP also grew by an annual average of 2.9 per cent
- the volume of inputs used to provide these services grew by 38.0 per cent over the period, an annual average of 3.3 per cent
- as a result the Total Public Service productivity index fell over the period by 3.2 per cent, an annual average of 0.3 per cent

The study reviewed productivity across health care, education, social care, social security administration and public order and analysed the output, inputs and productivity for each public service. It found between 1997 and 2007:

- productivity grew over the period in social security administration by 10.3 per cent, an annual average rate of 1.0 per cent
- education productivity fell by 3.2 per cent, an annual average fall of 0.3 per cent
- adult social care productivity fell by 4.3 per cent, an annual average fall of 0.4 per cent
- health care productivity fell by 4.3 per cent, an annual average fall of 0.4 per cent (though productivity rose in 2006 and 2007)
- public order and safety (includes the fire services, courts, probation

and prisons but excludes police) productivity fell by 16.6 per cent, an annual average fall of 1.8 per cent

- the largest fall in productivity was in children's social care, which fell by 20.9 per cent, an annual average fall of 2.3 per cent
- for police, defence and 'other', productivity was unchanged by definition, since output is assumed to equal input for these collective services.

More information

The full article is available at www.ons.gov.uk/about-statistics/ukcemga/publications-home/publications/index.html.

A shorter summary version will be published in ELMR later in the year.

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Social Trends

The 39th edition of Social Trends was published on 15 April 2009. This annual ONS publication draws together statistics from a wide range of government departments and other organisations to paint a broad picture of contemporary UK society, and how it has changed over the years. The underlying theme of Social Trends 39 is households, families and children. This edition provides various data on the labour market and the economy, as well as other social statistics.

The labour market chapter provides data on headline labour market measures between 1971 and 2008 together with data on specific groups such as those aged 50 and over, and those in employment in the UK who were born outside the UK. Data are also provided on labour market activity by household and family characteristics. For example, lone mothers with a child aged under five were less likely to be working than those who had a partner in 2008 quarter two (35 per cent compared with 63 per cent), although employment rates for lone parents have generally risen since 1998.

The labour market chapter also covers patterns of employment and shows that managers and senior officials were most likely to work full-time for both men and women. The occupations most likely to be followed on a part-time basis among men were sales and customer services, and among women, elementary occupations such as catering assistants and bar staff. Other statistics in the chapter include

trends in employee jobs, working hours, industrial relations at work and economic inactivity.

Data on the broader UK economy are also provided. Gross Domestic Product (GDP) per head more than doubled in real terms in the UK between 1971 and 2007, however there were also indications of the recent economic downturn, such as the fall in residential property transactions in the UK from 142,000 in April 2007 to 52,000 in November 2008 and the fall in lending secured on dwellings from £31.0 billion in 2006 quarter four to £4.4 billion in 2008 quarter three. Earning data (including the gender pay gap) as well as data on income distribution, inequality, and low income across the UK, and various aspects of pension provision are included in this edition. Expenditure patterns among UK households and families are also covered.

In its entirety, Social Trends takes a wide look at society, with further chapters covering subjects as diverse as population, education, health, crime and justice, Lifestyles and more.

More information

www.statistics.gov.uk/socialtrends39
www.palgrave.com/products/title.aspx?PID=314932

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The impact of the recession on the labour market

The *impact of the recession on the labour market* was published by the Office for National Statistics (ONS) on 14 May 2009. ONS Chief Economist, Joe Grice launched the publication at a cross government seminar at the Royal Statistical Society, London. Alan Manning, Professor at the London School of Economics and Nigel Meager, Director at the Institute of Employment Studies attended the seminar to provide commentary on the topics covered in the publication.

The publication contains six chapters commentating on labour market statistics since the onset of recession in 2008. Each chapter looks at different aspects of the UK labour market using a number of sources, including the Labour Force Survey (LFS) and the Jobcentre Plus administrative system.

The first two chapters concentrate on the changes in labour market statistics in the first three calendar quarters of the recession and comparisons with two previous recessions. The analyses in the first chapter show that the levels of redundancies, vacancies, and claimant count all changed direction before the first quarter of negative economic growth. The second chapter shows that the path of the unemployment rate in the first three quarters of this latest

recession has been similar to that of the 1980s recession.

The third chapter focuses on the changes in the labour market by region up to the three months to March 2009. The analyses show that across several labour market indicators the changes have been most pronounced in the West Midlands region.

Analysis in the fourth chapter by sex shows that up to the three months to March 2009 the changes in rates of employment, unemployment and redundancies have been larger for men than women. This analysis is followed by the fifth chapter which focuses on the impact of the recession according to age. This chapter shows that the percentage point increase in unemployment rate has been higher for younger age groups in the year to March 2009.

The final chapter presents analysis by household for the period up to December 2008. It shows that of the increase in workless households, couple households without dependent children had the largest increase over the year.

More info

www.statistics.gov.uk/ccf/article.asp?id=2187

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UPDATES

Updates to statistics on www.statistics.gov.uk

12 May

Index of production

5.3% quarterly fall in total output

www.statistics.gov.uk/cci/nugget.asp?id=198

UK trade

Deficit narrowed to £2.5 billion in March

www.statistics.gov.uk/cci/nugget.asp?id=199

13 May

Average earnings

Pay growth continues to fall

www.statistics.gov.uk/cci/nugget.asp?id=10

Unemployment

Rate rises to 7.1%

www.statistics.gov.uk/cci/nugget.asp?id=12

14 May

Travel and tourism

Visits to the UK up 2%

www.statistics.gov.uk/cci/nugget.asp?id=352

19 May

Inflation

January: CPI down to 2.3%; RPI down to -1.2%

www.statistics.gov.uk/cci/nugget.asp?id=19

21 May

Public sector

April: £7.0 billion current budget deficit

www.statistics.gov.uk/cci/nugget.asp?id=206

Retail sales

Annual growth in volumes of 2.6%

www.statistics.gov.uk/cci/nugget.asp?id=256

22 May

GDP growth

Economy contracts by 1.9% in Q1 2009

www.statistics.gov.uk/cci/nugget.asp?id=192

Index of services

1.2% three-monthly fall into March

www.statistics.gov.uk/cci/nugget.asp?id=558

5 June

Producer prices

Factory gate inflation falls to -0.3%

www.statistics.gov.uk/cci/nugget.asp?id=248

FORTHCOMING RELEASES

Future statistical releases on www.statistics.gov.uk

10 June

Index of production – March 2009**UK trade – April 2009****MM19: Aerospace and electronics cost indices – March 2009**

11 June

New orders in the construction industry – April 2009**SDQ7: Assets and liabilities of finance houses and other credit companies – Q1 2009****Financial statistics – June 2009**

12 June

Environmental accounts 2009

15 June

MQ10: UK trade in goods analysed in terms of industry

16 June

Consumer price indices – May 2009

17 June

Labour market statistics – June 2009**Public sector employment – Q1 2009**

18 June

Digest of engineering turnover and orders – April 2009**Public and private breakdown of labour disputes****Public sector finances – May 2009****Retail sales – May 2009****Internet retail sales – May 2009****SDM28: Retail sales – May 2009****New orders in the construction industry additional monthly data – April 2009**

22 June

Focus on consumer prices – May 2009

23 June

Public sector finances supplementary and quarterly data – June 2009**Pension trends**

24 June

Average weekly earnings (experimental) – April 2009**Regional trends**

25 June

Investment by insurance, pension funds and trusts – Q1 2009**Population trends**

30 June

Consumer trends – Q1 2009**Quarterly national accounts – Q1 2009****UK economic accounts – Q1 2009****Distributive and service trades – April 2009****Business investment Q1 2009****Occupational pension scheme survey 2008 results**

1 July

Index of services – April 2009**Productivity – Q1 2009****Profitability of UK companies – Q1 2009**

Economic review

June 2009

Graeme Chamberlin

Office for National Statistics

SUMMARY

Latest data reports a contraction in the UK economy for the third successive quarter. Output in the first quarter of 2009 was 1.9 per cent lower than in the previous quarter, and 4.1 per cent lower than the same quarter in 2008. Manufacturing and the other production industries have made the largest contributions to the fall in output, with other notable contributions coming from the construction, distribution, hotels and catering, and the business and financial services sectors. New data on the expenditure measure of Gross Domestic Product shows that inventories and investment spending have driven the downturn despite positive offsetting contributions from net trade and government spending. The labour market has weakened further with unemployment rising to 7.1 per cent in March. Inflation in the Consumer Prices Index has fallen to 2.3 per cent as energy and food price inflation continues to moderate.

GROSS DOMESTIC PRODUCT

GDP falls for the third consecutive quarter

The UK Output, Income and Expenditure release, published by the Office for National Statistics (ONS) at the end of May, is the second estimate of Gross Domestic Product (GDP) for 2009 quarter one. The first vintage – the GDP Preliminary Estimate – is timely being published only 23 days after the end of the

reference period but, as a result, is based only on limited information available. Data is available only for the output side of the economy and forecasts and imputations are required to plug gaps, especially for the third month of the quarter. Therefore the latest vintage gives both a more comprehensive and broader description of recent economic activity. In particular it is possible to start analysing the relationship between the demand (expenditure) and supply (output) sides of the economy.

Latest data confirm the preliminary

estimate. GDP fell by 1.9 per cent in the first quarter of 2009 and by 4.1 per cent compared to the same quarter last year (Figure 1).

Three consecutive quarters of negative growth marks the most severe downturn since the recession of the early 1980s, with the output loss since 2008 quarter two already exceeding that of the early 1990s recession. Furthermore, the contraction still appears to be gathering pace indicating that a recovery is still some way away.

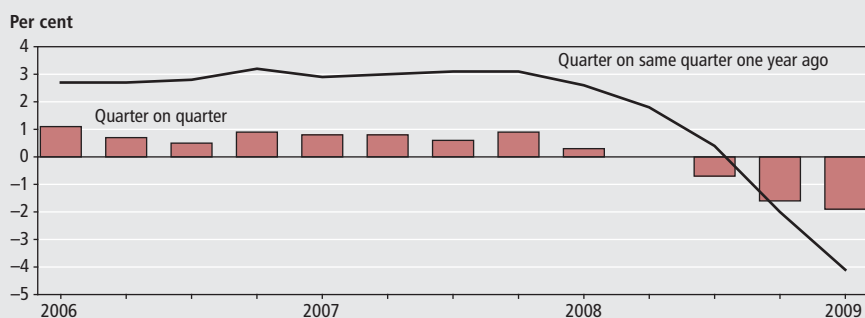
Manufacturing leads the fall in output

Looking at the supply side of the economy, the largest contribution to falling output in the last year has come from the manufacturing industries (Figure 2). In the last quarter manufacturing output fell by 5.5 per cent and is now 13.1 per cent lower compared to the first quarter in 2008. Despite only representing 14 per cent of the economy it has accounted for approximately 1.9 percentage points of the 4.1 per cent contraction in total output in the last four quarters. Along with the extraction and utilities industries, the production industries together have generated nearly half the downturn. Manufacturing's sharp decline largely reflects the global nature of the current downturn with all of the world's major economies entering a synchronised recession. As manufactured goods are highly weighted in trade flows, demand is far more sensitive to global conditions than other components of UK output. This also partly explains why the current downturn has been more severe than the previous recession in the early 1990s which was more localised to the UK rather than generic across the global economy.

Construction has also punched above its weight in leading the downturn. In terms of output levels the industry is about 6 per cent of the total, but has pulled down GDP growth by 0.5 percentage points in the last year. Much of the 8.6 per cent fall in output has been driven by the private house-building sector where new orders have been depressed by falling prices and tighter lending conditions.

Services make up the major share of the UK economy, approximately three-quarters of total output. Latest quarter-on-quarter

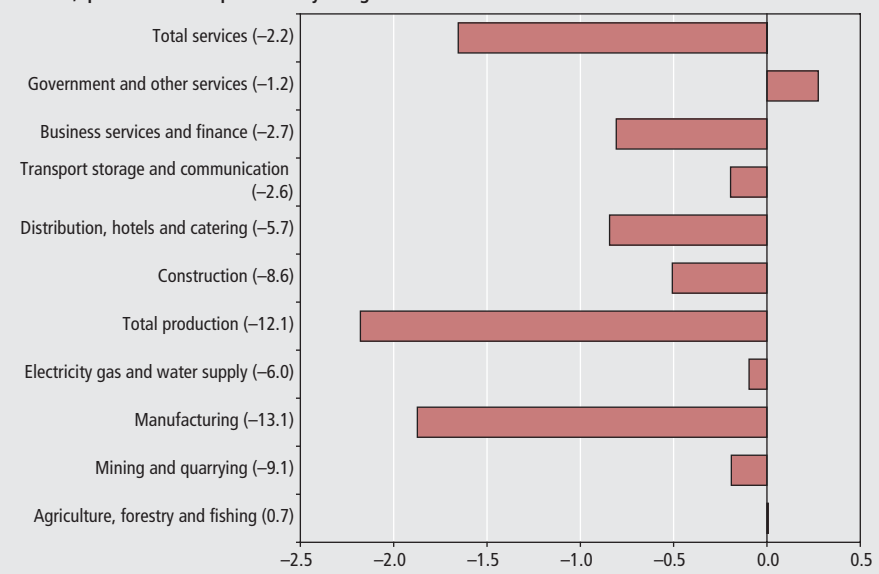
Figure 1
GDP growth



Source: ONS Output, income and expenditure

Figure 2
Contributions to GDP growth by industry output, 2009 Q1¹

Per cent, quarter on same quarter one year ago



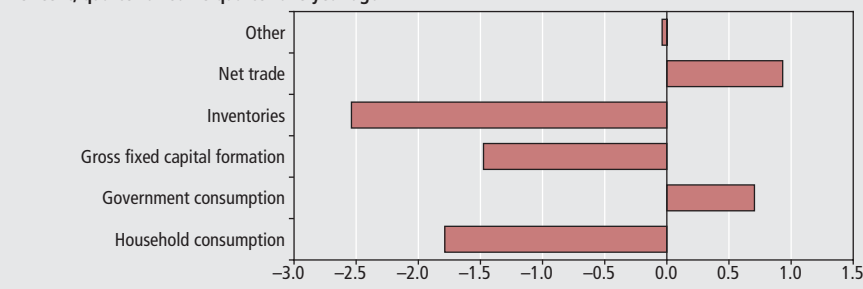
Note:

Source: ONS Output, income and expenditure

¹ Actual four quarter growth rates for each industry are shown in brackets.

Figure 3
Contributions to GDP growth by category of expenditure, 2009 Q1

Per cent, quarter on same quarter one year ago



Source: ONS Output, income and expenditure

data show a 1.2 per cent fall, and a total 2.2 per cent fall compared to the same quarter a year earlier. Therefore, the overall contribution to the downturn is relatively modest given the size of the sector — only 1.6 percentage points of the total 4.1 per cent fall in GDP since last year.

However, aggregate figures for the services sector do mask some more diverse trends between different industries. Hardest hit have been the distribution, hotels and catering industries where output has fallen by 5.7 per cent in the last four quarters dragging GDP growth down by 0.8 percentage points. A similar contribution has come from the financial and business services sector. Although the four-quarter fall in output was lower at 2.7 per cent, its share of total output is much higher at almost a third of the entire economy, hence its larger impact on the overall contraction. Transport, storage and communication industries fell by 2.6 per cent but, as a

fairly small part of the economy, its relative contribution was modest.

Offsetting these have been the performances of the more public sector orientated industries. In the first quarter of 2009 output of government and other services was 1.2 per cent higher than in the previous year. Without this, the decline in GDP would have been even more pronounced, with growth lower by 0.3 percentage points on a four-quarter basis.

Inventories and investment: the major causes of falling expenditure

GDP can also be measured from the demand side of the economy using the expenditure approach.

Figure 3 shows the relative contributions of each component of total expenditure to the

4.1 per cent fall in GDP over the last four quarters.

In the last four quarters household consumption spending, which is the largest component of total expenditure, has fallen by 2.8 per cent, pulling down GDP growth down by nearly 1.8 percentage points. The biggest downward contributions though have come from gross fixed capital formation (GFCF) and inventories.

GFCF, commonly referred to as investment, has also fallen sharply since the recession began. In the latest quarter GFCF fell by 3.8 per cent and is now 8.3 per cent lower than in the first quarter of 2008. Presently a breakdown of these figures is not available but, in previous quarters, business investment and new dwellings had been the main drivers.

Inventories are the stocks of finished and semi-finished goods and raw materials held by firms to meet future orders and production plans. Rapid decumulation in these stocks has accounted for the majority of the fall in total expenditure. This also helps to explain the abrupt fall in the output of the production industries as firms seek to meet orders through stocks rather than production. Many business surveys have also reported that despite recent trends firms continue to have high stock adequacy levels, suggesting that further falls in inventories could be likely.

Although a miniscule component of the level of total expenditure, inventories are by nature quite volatile and can represent a significant part of changes or growth rates, especially over the economic cycle. It is fairly expected that as an economy moves into downturn firms, anticipating lower future production, will cut back their stocks of inventories. So the latest trends mainly reflect the pessimistic outlook of firms. However, when the UK and rest of the world starts to recover, firms may rebuild inventory holdings equally sharply to meet higher expected future orders. Therefore inventories tend to move both more dramatically and ahead of other expenditure components in the course of an economic cycle.

Positive contributions to growth have been made by two categories of spending. First, government final consumption spending has grown consistently over the last four quarters and is now 3.5 per cent higher than last year. Part of the increase might reflect the workings of automatic stabilisers with government spending on transfer payments tending to rise systematically as the economy weakens. Furthermore, government

departmental spending is set by three-year Comprehensive Spending Reviews, hence even the more discretionary parts of government spending may have been fairly immune to the overall downturn. And policy makers may also be reluctant to cut spending at a time when demand in the economy is weak. The outlook for government spending though is not so robust. As the recession takes its toll on the public finances, with current budget deficits predicted until the financial year 2015/16 during which time public sector net debt will double as a proportion of GDP, future retrenchments in spending could be likely.

Second, net trade, which is the difference between exports and imports, also made a positive contribution to expenditure growth in the last four quarters. Without this the rate of GDP contraction would have been greater by 0.9 percentage points. This is only good news to a certain extent. While exports add to GDP, imports detract, so net trade can add to GDP as long as imports fall faster than exports, which happen to be the case in this instance. Exports have fallen by 11 per cent reflecting the world-wide nature of the current recession; net trade therefore has not improved as a result of stronger foreign demand for UK output. Imports on the other hand have fallen by 12.8 per cent. While the larger fall in imports than exports is welcome in terms of GDP accounting and in improving the UK's balance of trade position, it does in a way reflect a more pronounced fall in domestic spending and perhaps a greater need for rebalancing in the UK than other nations.

It is difficult to isolate any potential benefits of sterling's exchange rate depreciation on net trade. Given that the UK's net trade position has improved it could be construed as evidence of a relative competitiveness effect working in the UK's favour. However, evidence from business surveys suggest that, in terms of export orders, any benefit from sterling's depreciation has been swamped by the fall in foreign demand stemming from the global downturn. Still, it does not refute the notion that export performance may have been even worse had it not been for the help from the exchange rate although this counterfactual is near impossible to measure or assess.

The Output, Income and Expenditure release provides the first evidence for measuring GDP on the demand side of the UK economy for 2009 quarter one, but the data content and the available detail improves at the publication of the third vintage of GDP data. This is the Quarterly

National Accounts release, published by ONS in late June, where further detail of components of household spending and GFCF are made available along with the sector and financial accounts and balance of payments.

INDEX OF PRODUCTION

Engineering industries the largest contributor to falling manufacturing output

The Index of Production is published monthly and current data is available up to March 2009. Analysing the latest monthly figures shows that manufacturing output growth between February and March 2009 was flat, bringing to an end 12 consecutive monthly contractions. This is the first evidence that the rate of decline in the manufacturing sector, which has so far been the main driver of the downturn, is moderating. Similar results have also been found in business surveys of the UK manufacturing sector by the Confederation of British Industry (CBI) and the Purchasing Managers Index (PMI). However it should be acknowledged that monthly data can be volatile and it is too soon to say with confidence that this is a reversal of recent trends.

Further detail on the contributions to GDP growth by various manufacturing industries can also be calculated and are presented in **Figure 4**. Clearly the biggest contribution has come from the engineering industries, which is not out of line with the corresponding data on business investment or construction output. In the three months to March output was 18.7 per cent lower than in the same three months of 2008 as a consequence of strong falls in the production of machinery and equipment, optical and electrical equipment

and transport equipment. Manufactures of basic metals and fabricated products have also contracted significantly by 19.4 per cent over the same period, likely as a result of weaknesses in the construction and automobile industries.

INDEX OF SERVICES

Mixed patterns of growth across individual service sector industries

As the largest component of UK output interest lies in a breakdown of the activity of individual industries within the sector. The Index of Services is also published monthly with most recent data pertaining up to March 2009. This allows a further breakdown of the contribution to GDP growth than published in the Output, Income and Expenditure release. As **Figure 5** shows, once the data has been disaggregated, service sector activity has been quite mixed.

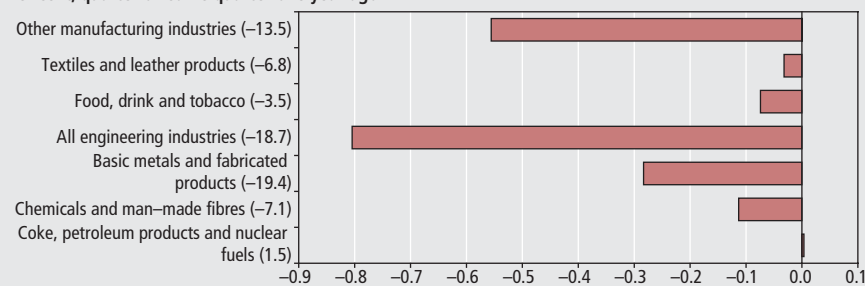
The largest single contribution to the downturn has come from the other business activities category. This includes a myriad of business services including accountancy, legal services, management consultancy, human resources and architecture among others. In the three months to March 2009 output was 8.6 per cent lower than in the corresponding period of 2008, accounting for approximately 0.8 percentage points of the 4.1 per cent fall in GDP between the first quarters of 2008 and 2009. Given that most of these activities are classified as the more discretionary parts of business spending, and are also sensitive to overall business volumes, it is unsurprising they have fared rather poorly in the current recession.

Other service sector industries where growth was poor were motor trades, wholesale and distribution trades, hotels and restaurants, land transport, auxiliary

Figure 4

Contributions to GDP growth by manufacturing industries, 2009 Q1¹

Per cent, quarter on same quarter one year ago



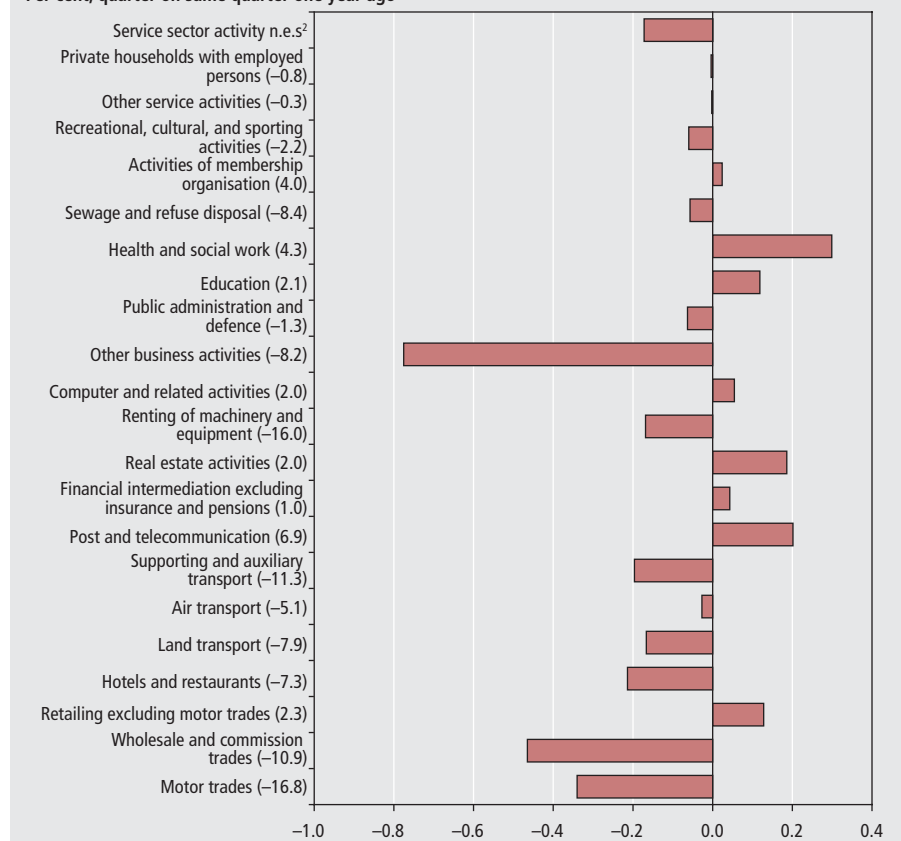
Note:

1 Actual four quarter growth rates for each industry are shown in brackets.

Source: ONS Index of production

Figure 5
Contributions to GDP growth by services industries, 2009 Q1¹

Per cent, quarter on same quarter one year ago



Notes:

- 1 Actual four quarter growth rates for each industry are shown in brackets.
- 2 Other services not elsewhere specified (n.e.s.) include the financial intermediation relating to insurance and pensions, services auxiliary to financial intermediation and research and development.

Source: ONS Index of services

transport services and renting of machinery and equipment. Motor trades have clearly suffered as a result of restricted credit and a weakening labour market putting pressures on household finances. Hotels and restaurants have probably been affected by the same factors leading to more cautious consumers. Transport activities have been hit by weak freight and cargo activity, corresponding in part to the contraction in manufacturing output. And renting of machinery and equipment would be expected to follow similar trends to overall manufacturing and construction output and business investment.

Figure 5 also shows that a number of service sector industries have bucked the trend and recorded positive growth in the last year. Retailing has performed well, in line with recent trends in retail sales that have been more robust throughout the recession than overall household consumption spending. Post and telecommunications has been a growth industry for several years, in part driven by bursts of new technologies which the current recession hasn't yet reversed.

Despite the downturn in the housing market real estate activities have grown by 2 per cent making a positive contribution of 0.2 percentage points to GDP growth in the last four quarters. This has predominately been driven by letting of dwellings, where activity has been brisk of late, largely as a consequence of slow turnover in property sales. But it must also be noted that this industry includes the implicit rents that owner-occupiers pay to themselves for living in their own properties, a national

accounting convention designed to improve the international consistency of GDP estimates when the mix of renting and owner-occupation differs across countries. As these implicit rents are both large and relatively stable it reflects on the measured output of the industry.

Output of education, health and social work has also exhibited positive growth in the last year, further evidence that the public sector has shown greater immunity to the downturn than its private sector counterpart. Between them these industries added around 0.4 percentage points to GDP growth.

RETAIL SALES

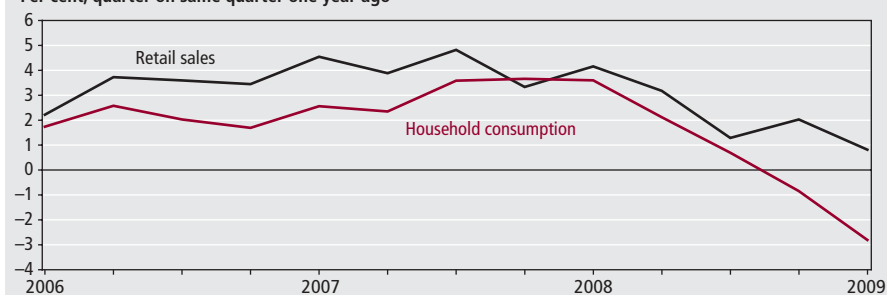
Remains more robust than household consumption despite recent revisions

The latest data release includes a number of methodological changes made by ONS to better measure retail spending activity in the UK. Most importantly chain linking has been adopted, which means that the weights used to aggregate individual items in the index are updated each year rather than using a fixed base that is updated every five years as before. Although this has no impact on value measures, the previous methodology ran the risk of substitution bias and overstating volume measures because it gave too little recognition that consumers may switch away from items where prices are rising quickly to those which are rising less fast or even becoming cheaper.

Chain linking has led to a downward revision in volumes growth but hasn't dramatically changed the recent story where retail sales have been relatively robust, especially compared to household consumption spending as a whole (Figure 6). In the first quarter of 2009 retail spending was 0.8 per cent higher compared

Figure 6
Comparing growth in retail sales and household consumption

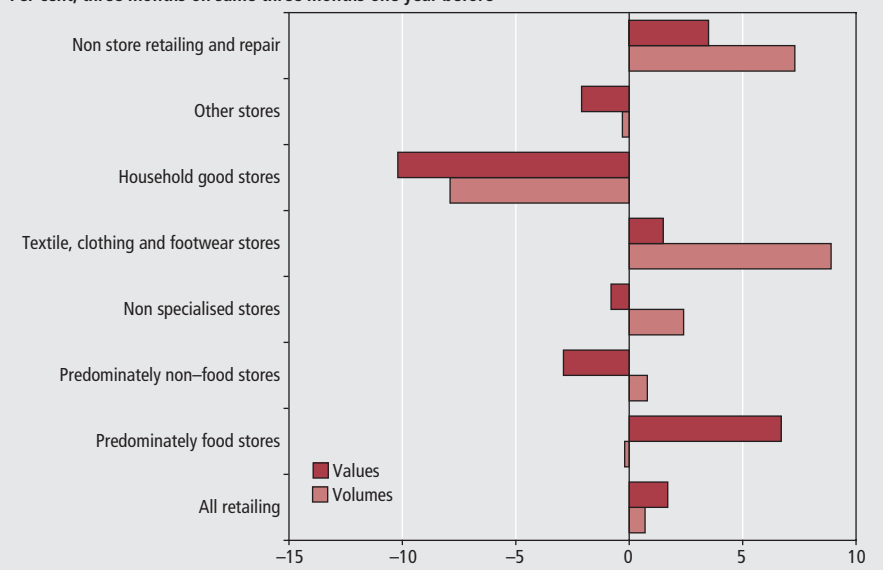
Per cent, quarter on same quarter one year ago



Source: ONS Output income and expenditure and Retail sales

Figure 7
Volume and value changes in retail sales, April 2009

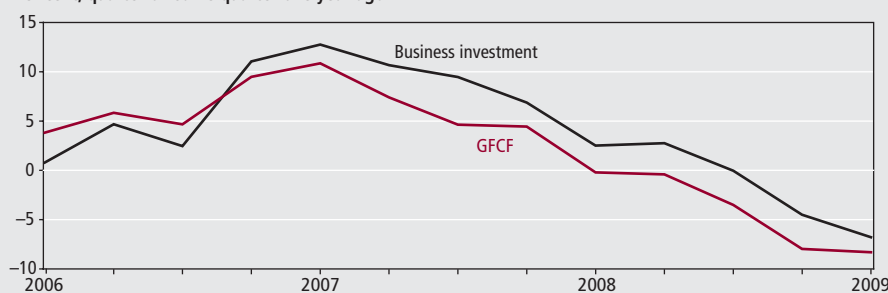
Per cent, three months on same three months one year before



Source: ONS Retail sales

Figure 8
Comparing growth in business investment¹ and GFCF

Per cent, quarter on same quarter one year ago

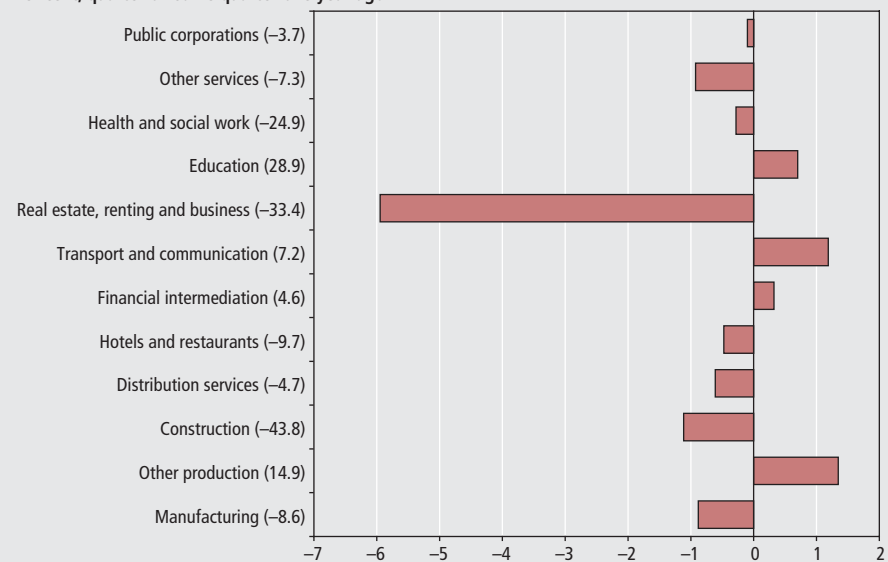


Note: Source: ONS Output income and expenditure and Business investment

¹ Business investment has been adjusted to remove the impact of reclassifications between the business and public sectors on growth figures.

Figure 9
Contributions to the contraction in business investment, 2009 Q1¹

Per cent, quarter on same quarter one year ago



Note: Source: ONS Business investment

¹ Actual four quarter growth rates for each industry are shown in brackets.

to the same quarter in 2008, whereas total household consumption was 2.8 per cent lower over the same period.

Some commentators have been surprised that retailing has remained in positive territory despite the pressures on household balance sheets brought by the recession, notably rising unemployment, more restricted consumer credit, a sharp fall in equity brought about by falling house prices and large increases in fuel and energy prices last summer depressing real incomes. However it should be noted that only a segment of total household spending occurs in retail establishments. For example, motor trades and hotels and catering, where all the evidence suggests spending has fallen considerably, are not classified as retail sales. And some households, notably those in fairly secure jobs with mortgages, may have seen their financial position improve recently due to large reductions in interest rates.

Further evidence on current retail sales trends is shown in **Figure 7** which presents growth in volumes and values of retail sales, in the three months to April 2009 relative to the same three month period a year earlier, and for the main components. An interesting trend has been the relative growth in predominately food and predominately non-food stores. In value terms predominately food stores have grown faster, while in volume terms, it is predominately non-food stores that have grown faster, in particular textile clothing and footwear, and non-store retail and repair.

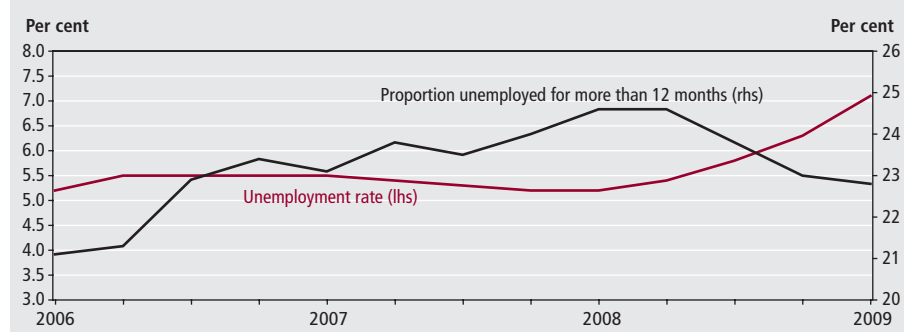
An explanation of these trends is most likely found in price movements, that is, that food prices have inflated relatively strongly and clothing and footwear prices have fallen. Therefore overall retail spending growth, in volume terms, may be driven by continued discounting in clothing and footwear categories and to a lesser extent in other predominately non-food stores. Non-store retail and repair importantly includes internet and mail order retailing, where growth has reflected a continuing shift in purchases away from the high street to online. Again volume growth has exceeded value growth implying that this sector may be supporting sales by discounting.

BUSINESS INVESTMENT

In line with gross fixed capital formation

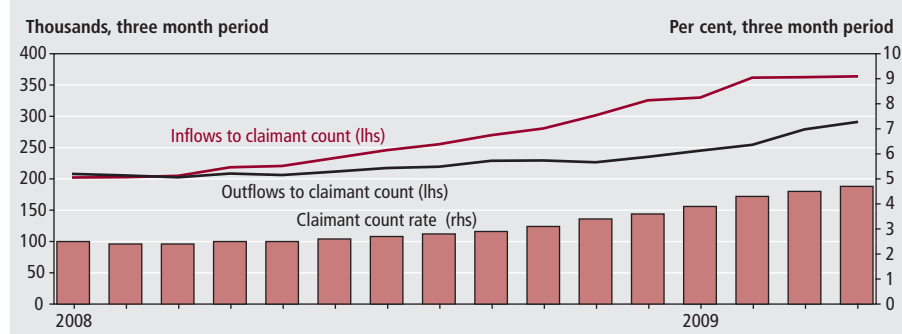
As **Figure 8** shows, trends in business investment have mirrored those in total GFCF fairly closely in recent years. Overall GFCF though has tended to

Figure 10
Unemployment rate and the proportion of more than 12 months in duration



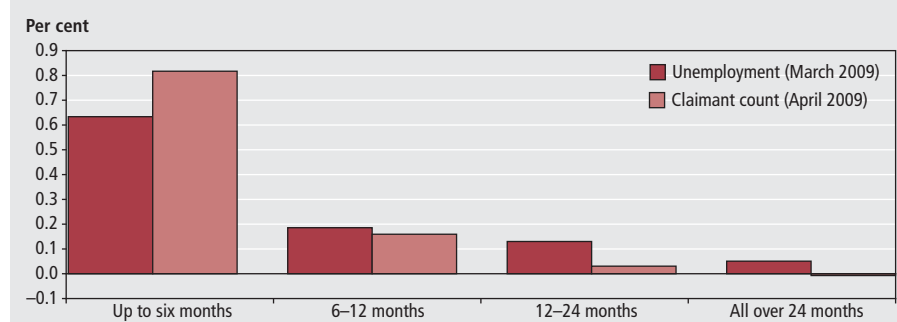
Source: ONS Labour Force Survey

Figure 11
Claimant count



Source: Jobcentre Plus administrative system

Figure 12
Composition of the annual increase in unemployment and claimant count¹ levels by duration



Note: Source: ONS Labour Force Survey and Jobcentre Plus administrative system

¹ Claimant count figures here are based on computerised claims.

fall faster in the current downturn, largely driven by investment spending on dwellings and connected with the transfer of land and dwellings, despite being offset by more robust general government investment spending.

Total business investment contracted by 6.8 per cent between the first quarters of 2008 and 2009 and a breakdown by industry contributions is shown in **Figure 9**. Real estate, renting and business has accounted for most of the fall, which has been fairly broad-based. Only the other production (driven by extraction industries), transport

and communication and education recorded positive growth rates.

LABOUR MARKET

Unemployment rate up to 7.1 per cent

In the three months to March 2009 (2009 quarter one) UK unemployment stood at 2.2 million, corresponding to a rate of 7.1 per cent (**Figure 10**). Since the same three-month period in 2008 unemployment has risen by 592,000 and from a rate of 5.2 per cent.

There has also been a sharp rise in the claimant count, that is the numbers claiming Job Seekers Allowance, over the last year (**Figure 11**). In April 2009, the claimant count was 4.7 per cent, up from 2.5 per cent in April 2008, reflecting a level increase of 710,000. As **Figure 11** also shows, the rise in the claimant count has resulted from a much sharper rise in inflows than outflows. These figures tally with the evidence on redundancies which have also shown a sharp rise in the last year. In the first quarter of 2009 the redundancy rate, that is the number of redundancies as a ratio of the number of employee jobs in the previous quarter multiplied by 1,000, was 11.3. In the same quarter of 2008 it was 4.4. During the last four quarters (2008 quarter two to 2009 quarter one) there have been 828,000 redundancies, compared to 472,000 in the preceding four quarters (2007 quarter two to 2008 quarter one).

Figure 10 also shows the proportion of total unemployment with duration of over 12 months. This ratio has fallen since the start of the recession last summer, reversing the previous upward trend, and reflecting the large increase in recently unemployed. In **Figure 12** the increase in the level of unemployment and the claimant count are disaggregated according to duration, and clearly on both measures, the biggest proportions are in the less than six months category. This is further evidence that sharply rising unemployment and claimant count has been a consequence of recent developments, reflecting the strong pass through from the downturn in output to the labour market.

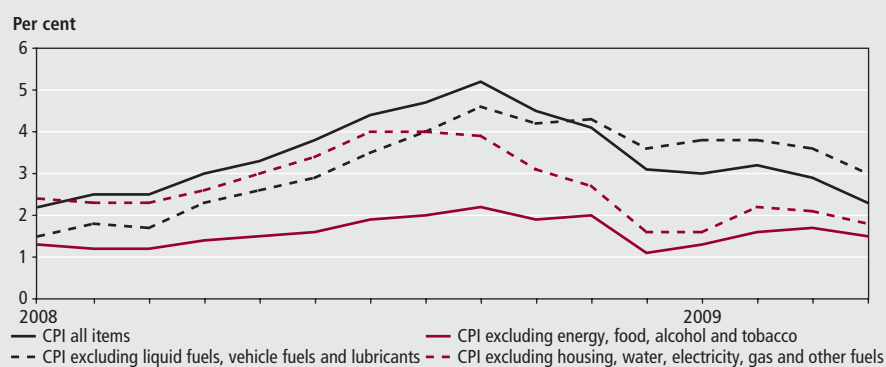
Between February and April 2009 the three-month rolling average of the level of vacancies was 455,000, compared to 686,000 in the corresponding period of 2008. Together this suggests that the weakening in the labour market is not just manifest in growing redundancies but also lower job creation as firms contend with a pessimistic and uncertain economic outlook.

PRICES AND INFLATION

CPI inflation down to 2.3 per cent

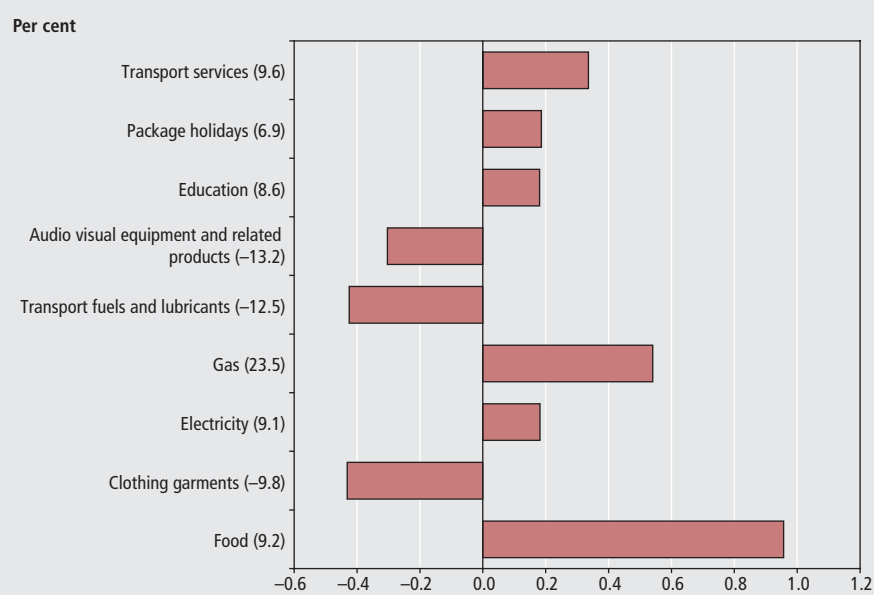
Inflation in the Consumer Prices Index (CPI) in the year to April was 2.3 per cent, down from 2.9 per cent in March. This is the lowest rate since January 2008 and represents a considerable easing from the peak rate of 5.2 per cent last September (**Figure 13**). Much of the fall in inflation in the last seven months has been driven by

Figure 13
CPI inflation and special aggregates



Source: ONS Consumer Price Indices

Figure 14
Important contributions to CPI inflation rate, April 2009

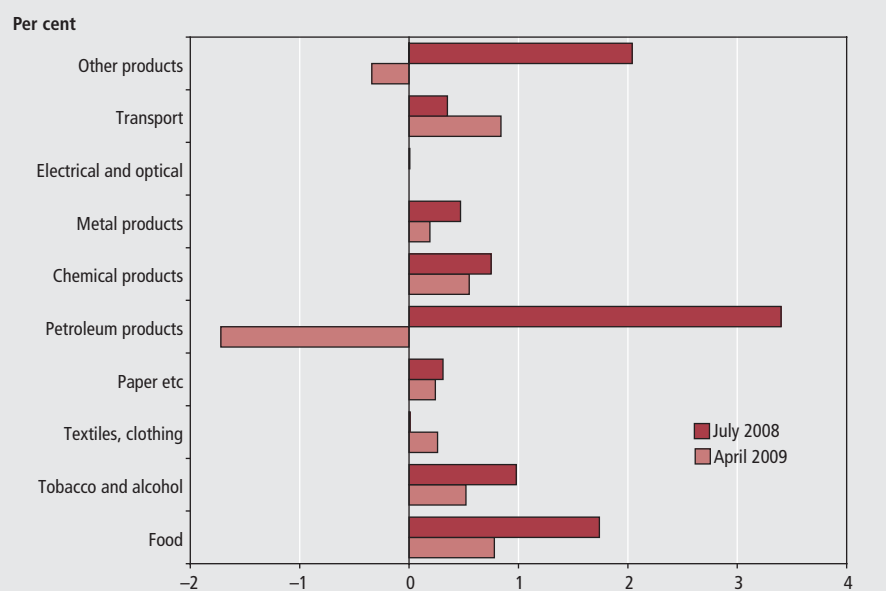


Note:

Source: ONS Consumer prices indices

1 Actual inflation rates of individual items are shown in brackets.

Figure 15
Contributions to PPI output prices inflation



Source: ONS Producer prices

falling commodity prices, particularly oil as the global economy enters recession.

ONS does not publish an explicit measure of core inflation, but it does calculate special aggregates where certain components of the CPI are excluded. Movements in oil prices have had a profound impact on the vehicle fuels and lubricants part of the CPI. CPI inflation measures excluding this component, which peaked at 28.3 per cent growth last July, were much lower in the summer and autumn of 2008. However, as the oil price has subsequently fallen excluding this measure raises CPI inflation. For example in April 2009, vehicle fuels and lubricants were 14.2 per cent lower than in the previous year, which has been responsible for a 0.7 percentage point drop in the all items CPI inflation rate.

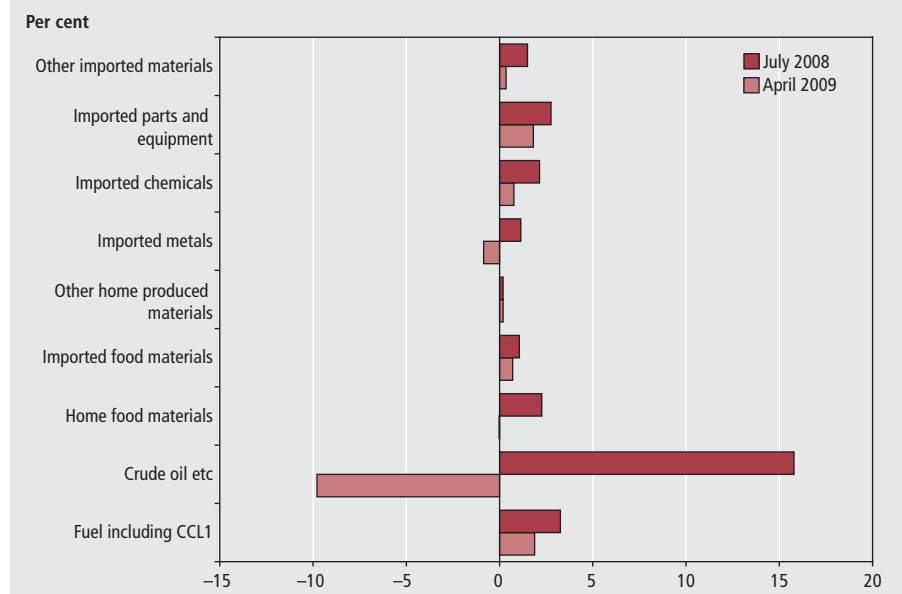
Further reductions in inflation have been generated by the unwinding of household energy (gas and electricity) and food items. Both of these showed a marked increase last year, and although both items still contribute positively to current inflation, the fact that the rate of price increases have fallen has pulled the all-items measure downwards from its peak. However, as shown in Figure 13, there is potentially further unwinding in these items to go. In April, excluding housing water, electricity, gas and other fuels CPI inflation is measured at 1.8 per cent, and excluding all energy and food sees the rate fall further to 1.5 per cent.

Some of the key contributions, positive and negative, to the current CPI inflation rate are presented in Figure 14. As mentioned previously, food, gas and electricity continue to make significant positive contributions even though these are declining. Most forecasts predicting CPI inflation rates to fall close to 1 per cent by the end of 2009 point to the unwinding of last year's food and energy prices as the main drivers. On the downward side, clothing garments fell by 9.8 per cent in the year, partly reflecting strong discounting. And audiovisual equipment recorded a fall of 13.2 per cent, although this is mainly due to the use of hedonic pricing methodologies to adjust for rapid improvements in quality.

PPI inflation falls due to movements in oil prices

Falling oil prices have also had the most important effects on producer prices. Producer Prices Index (PPI) output inflation, also known as factory gate inflation, was 1.2 per cent in April,

Figure 16
Contributions to PPI input prices inflation



Note:

1 CCL stands for climate change levy.

compared with a peak rate of 10.2 per cent in July 2008. Comparing the individual contributions of each of the main items to the index in these two periods shows that petroleum products have contributed 5.1 percentage points of the fall (**Figure 15**). Other notable contributions have come from food, which is now making a less positive contribution than before and other products where the fall has been driven by recovered secondary raw materials in line with the general fall in global commodity prices.

Corresponding analysis for PPI input prices is shown in **Figure 16** where inflation has fallen from 31.3 per cent in July 2008 to -5.0 per cent in April 2009. Once again crude oil has been the main contributor to the fall. It is also worth noting that imported materials prices have fallen despite the significant depreciation in sterling since last summer, especially against the US dollar which would exert upward pressure on import prices.

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	2007	2008	2008 Q3	2008 Q4	2009 Q1	2009 Feb	2009 Mar	2009 Apr
GDP growth – chained volume measures (CVM)									
Gross domestic product at market prices	ABMI	3.0	0.7	−0.7	−1.6	−1.9	..	..	..
Output growth – chained volume measures (CVM)									
Gross value added (GVA) at basic prices	ABMM	2.9	0.7	−0.7	−1.6	−1.9	..	..	..
Industrial production	CKYW	0.1	−2.8	−1.7	−4.5	−5.2	−0.8	−0.5	..
Manufacturing	CKYY	0.2	−2.6	−1.9	−4.9	−5.5	−0.3	0.0	..
Construction	GDQB	2.6	0.3	−1.0	−4.9	−2.4	..	..	..
Services	GDQS	3.5	1.5	−0.5	−0.8	−1.2	..	..	..
Oil and gas extraction	CKZO	−2.4	−4.6	−0.9	−2.0	−2.3	−0.6	−3.1	..
Electricity, gas and water supply	CKYZ	1.1	−0.2	−0.9	−1.3	−3.5	−3.3	−2.8	..
Business services and finance	GDQN	5.5	2.4	−0.6	−0.6	−2.2	..	..	..
Household demand									
Retail sales volume growth	EAPS	4.2	2.6	−0.3	0.5	0.4	−2.1	1.2	0.9
Household final consumption expenditure growth (CVM)	ABJR	3.0	1.4	−0.2	−1.0	−1.2	..	..	..
GB new registrations of cars (thousands) ¹	BCGT	2,390	2,112	542	338	..	140	..	..
Labour market^{2,3}									
Employment: 16 and over (thousands)	MGRZ	29,222	29,443	29,407	29,361	29,204	29,204	..	..
Employment rate: working age (%)	MGSU	74.6	74.5	74.4	74.1	73.6	73.6	..	..
Workforce jobs (thousands)	DYDC	31,471	31,661	31,520	31,318	..	..	..	..
Total actual weekly hours of work: all workers (millions)	YBUS	936.1	940.7	940.9	934.0	921.0	921.0	..	..
Unemployment: 16 and over (thousands)	MGSC	1,653	1,776	1,825	1,971	2,215	2,215	..	..
Unemployment rate: 16 and over (%)	MGSX	5.3	5.7	5.8	6.3	7.1	7.1	..	..
Claimant count (thousands)	BCJD	863.6	905.1	914.7	1,091.4	1,366.7	1,390.4	1,455.9	1,513.0
Economically active: 16 and over (thousands)	MGSF	30,875	31,220	31,232	31,333	31,419	31,419	..	..
Economic activity rate: working age (%)	MGSO	78.9	79.1	79.1	79.2	79.3	79.3	..	..
Economically inactive: working age (thousands)	YBSN	7,940	7,872	7,887	7,858	7,828	7,828	..	..
Economic inactivity rate: working age (%)	YBTL	21.1	20.9	20.9	20.8	20.7	20.7	..	..
Vacancies (thousands)	AP2Y	657	617	598	530	466	483	466	455
Redundancies (thousands)	BEAO	127	163	156	259	286	286	..	..
Productivity and earnings annual growth									
GB average earnings (including bonuses) ³	LNNC	..	..	3.3	3.0	−0.4	0.2	−0.4	..
GB average earnings (excluding bonuses) ³	JQDY	..	..	3.6	3.6	3.0	3.2	3.0	..
Whole economy productivity (output per worker)	A4YN	..	..	0.1	−1.8	..	..	..	..
Manufacturing productivity (output per job)	LOUV	..	..	..	..	..	−7.6	−8.0	..
Unit wage costs: whole economy	LOJE	..	..	2.9	4.7	..	..	..	..
Unit wage costs: manufacturing	LOJF	..	..	..	..	..	9.8	9.8	..
Business demand									
Business investment growth (CVM)	NPEL	9.9	0.1	−0.8	−1.5	−5.5	..	..	..
Government demand									
Government final consumption expenditure growth	NMRY	1.5	3.4	0.7	1.3	0.3	..	..	..
Prices (12-monthly percentage change – except oil prices)¹									
Consumer prices index	D7G7	2.3	3.6	4.8	3.9	3.0	3.2	2.9	2.3
Retail prices index	CZBH	4.3	4.0	5.0	2.7	−0.1	0.0	−0.4	−1.2
Retail prices index (excluding mortgage interest payments)	CDKQ	3.2	4.3	5.3	3.8	2.4	2.5	2.2	1.7
Producer output prices (excluding FBTP) ^{4,5}	PLLV	1.9	4.7	5.9	5.0	3.7	3.8	3.2	2.4
Producer input prices ⁵	RNNK	3.0	21.6	28.2	9.0	0.7	0.7	−0.4	−5.0
Oil price: sterling (£ per barrel)	ETXR	36.11	52.10	61.64	35.69	30.86	27.42	33.88	34.08
Oil price: dollars (\$ per barrel)	ETXQ	72.44	98.37	116.89	57.24	44.27	39.51	48.06	50.15

Seasonally adjusted unless otherwise stated									
	Source CDID	2007	2008	2008 Q3	2008 Q4	2009 Q1	2009 Feb	2009 Mar	2009 Apr
Financial markets¹									
Sterling ERI (January 2005=100)	BK67	103.5	90.9	91.6	83.6	77.1	78.3	76.4	78.4
Average exchange rate /US\$	AUSS	2.0018	1.8528	1.8918	1.5699	1.4346	1.4411	1.4174	1.4715
Average exchange rate /Euro	THAP	1.4619	1.2588	1.2586	1.1957	1.1010	1.1264	1.0867	1.1157
3-month inter-bank rate	HSAJ	5.95	2.75	6.15	2.75	1.60	1.95	1.60	1.30
Selected retail banks: base rate	ZCMG						1.00	0.50	..
3-month interest rate on US Treasury bills	LUST	3.29	0.11	0.90	0.11	0.13	0.26	0.13	0.10
Trade and the balance of payments									
UK balance on trade in goods (£m)	BOKI	-89,754	-92,876	-23,619	-22,711	-21,138	-6,834	-6,589	..
Exports of services (£m)	IKBB	149,191	165,944	40,262	44,269	43,617	13,804	13,656	..
Non-EU balance on trade in goods (£m)	LGDT	-47,768	-53,690	-14,582	-14,075	-12,597	-3,743	-3,307	..
Non-EU exports of goods (excl oil & erratics) ⁶	SHDJ	116.7	125.0	127.7	117.4	106.9	112.4	110.3	..
Non-EU imports of goods (excl oil & erratics) ⁶	SHED	131.6	132.0	134.0	127.9	116.2	118.5	109.4	..
Non-EU import and price index (excl oil) ⁶	LKWQ	104.2	116.5	116.8	126.4	132.4	132.1	133.3	..
Non-EU export and price index (excl oil) ⁶	LKVX	102.5	110.6	110.4	116.9	122.6	122.4	123.3	..
Monetary conditions/government finances									
Narrow money: notes and coin (year on year percentage growth) ⁷	VQUU	5.8	7.3	5.2	7.3	8.4	8.3	8.4	..
M4 (year on year percentage growth)	VQJW	12.6	12.9	12.1	16.3	17.8	18.8	17.8	..
Public sector net borrowing (£m)	-ANNX	33,662	65,142	13,602	31,028	20,548	8,337	18,226	8,468
Net lending to consumers (£m)	RLMH	12,915	11,577	2,083	1,861	342	128	129	..

External indicators – non-ONS statistics

		2008 Oct	2008 Nov	2008 Dec	2008 Jan	2009 Feb	2009 Mar	2009 Apr	2009 May
Activity and expectations									
CBI output expectations balance ¹	ETCU	-31	-42	-42	-43	-44	-48	-32	-17
CBI optimism balance ¹	ETBV			-60			-64		
CBI price expectations balance	ETDQ	12	1	3	-15	-13	-13	-20	-17

Notes:

Source: Office for National Statistics

- 1 Not seasonally adjusted.
- 2 Annual data are the average of the four quarters except for workforce jobs (June).
- 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 Now derived from not seasonally adjusted series.
- 6 Volumes, 2003 = 100.
- 7 Replacement for series M0 which has ceased publication.

Further explanatory notes appear at the end of the Key times series section.

Independent forecasts

May 2009

UK forecasts

The tables below supplement the Economic Review by providing a forward-looking view of the UK economy. The tables show the average and range of independent forecasts for 2009 and 2010 and are extracted from HM Treasury's Forecasts for the UK Economy.

2009

	Average	Lowest	Highest
GDP growth (per cent)	-3.8	-4.5	-2.5
Inflation rate (Q4, per cent)			
CPI	0.9	-0.2	1.8
RPI	-1.5	-3.1	1.0
Claimant count (Q4, million)	2.07	1.60	2.48
Current account (£ billion)	-30.1	-75.7	-11.0
Public Sector Net Borrowing (2008-09, £ billion)	176.2	98.8	207.0

2010

	Average	Lowest	Highest
GDP growth (per cent)	0.4	-1.0	2.0
Inflation rate (Q4, per cent)			
CPI	1.6	0.5	3.6
RPI	2.4	0.1	4.4
Claimant count (Q4, million)	2.39	1.57	3.10
Current account (£ billion)	-29.6	-141.3	-3.0
Public Sector Net Borrowing (2009-10, £ billion)	183.5	104.5	240.0

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/data_forecasts_index.htm

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 Interim Report* (March 2009), published by OECD (Organisation for Economic Co-operation and Development).

2009

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	-4.0	-6.6	-4.1	-4.3
Consumer price (percentage change from previous year)	-0.4	-1.2	0.6	..
Unemployment rate (per cent of the labour force)	9.1	4.9	10.1	8.4
Current account (as a percentage of GDP)	..	..	..	..
Fiscal balance (as a percentage of GDP)	-10.2	-6.8	-5.4	-7.2

2010

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	0.0	-0.5	-0.3	-0.1
Consumer price (percentage change from previous year)	0.5	-1.3	0.7	..
Unemployment rate (per cent of the labour force)	10.3	5.6	11.7	9.9
Current account (as a percentage of GDP)	..	..	..	..
Fiscal balance (as a percentage of GDP)	-11.9	-8.4	-7.0	-8.7

Notes

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

FEATURE

Malindi Myers
Office for National Statistics

The impact of the economic downturn on productivity growth

SUMMARY

Labour productivity growth is an important indicator of how efficiently the economy is functioning, particularly in the longer term as an indicator of underlying economic growth potential, but also in the shorter term in that it reflects how efficiently the labour market is interacting with changes in output and production. In the recent economic downturn, productivity growth has fallen significantly, as it has in the previous three recessions in the mid 1970s, early 1980s and early 1990s. As with the last two recessions, productivity growth has fallen in line with the drop in output growth, in terms of both timing and depth, because of a lag in the response of businesses in reducing labour input as output and production has reduced. However, recent labour market data suggests that the labour market has been adjusting apace in recent months, and is likely to continue to do so, while production data suggests there is some plateauing out in the decline. This shift in the dynamics between the labour market and output growth would be expected to result in productivity growth picking up in the coming quarters.

Key points

- Productivity growth has fallen markedly since the middle of 2008, in line with the deterioration in output growth but also exacerbated by a lag in adjustment in the labour market.
- Initial, internal estimates of productivity growth for the first quarter of 2009 suggest that growth in output per worker could be at its lowest since early 1980.
- The comparable drop in productivity growth rates with those of output growth in the second half of 2008 suggest that the labour market has been slower to adjust to the contraction of the economy, as has been the case in previous downturns. It is not unusual for businesses to delay adjusting their labour force, or labour input, as production deteriorates because of short term uncertainty of the duration of the fall in output.
- In the latter stages of 2008, productivity growth was falling at a similar pace for both output per worker and output per hour, suggesting that there had been relatively little adjustment in hours worked, which is the easier mode of reducing labour input, as opposed to reducing workers employed. But in the first quarter of 2009, labour market data suggest there has been a more marked adjustment in hours worked compared to late 2008, and compared to workers employed. This has resulted in a moderation in the drop in productivity growth on a per

hour basis, compared to productivity growth on a per worker basis.

- Although the headline labour market data suggest that the labour market has been badly hit in the recent downturn, the productivity growth rates suggest that the labour market has not adjusted to the extent that output or production has declined.
- The sectors showing the most marked declines in productivity growth rates are the production industries, including manufacturing, construction, the distribution, hotels and catering sector and transport and communication. Somewhat surprisingly, the business and financial services sector has been much more resilient in the downturn in terms of productivity growth. This partly reflects a more muted drop in output growth in this sector, but also a more timely adjustment in labour input than some other sectors.
- Once the economy begins to recover, it is likely that productivity growth will pick up relatively strongly, compared to output growth, because it takes time for businesses to replenish their labour stock, and recruit and train workers, but also because in a downturn it is the less productive firms and workers that are lost first leaving a more productive base at the start of the economic recovery.

Introduction

The UK economy has been slowing down markedly since late 2007, and particularly since mid 2008 (see

Figure 1). Gross Domestic Product (GDP) growth in the third quarter of 2007 was 3.3 per cent, compared to the same quarter a year earlier, well above what HM Treasury consider to be trend or potential growth of around 2.75 per cent. But by the second quarter of 2008, GDP growth had already dropped to 1.8 per cent, on a year on year basis, and down further to 0.4 per cent by the third quarter of 2008. For the three quarters to 2009 quarter one, output growth has been negative on a quarter on quarter basis as well as compared to the same quarter a year earlier. In the last 2 quarters the consecutive quarters of negative quarter on quarter growth mark the move into a technical recession, while the deceleration in output growth to -4.1 per cent in the first quarter of 2009 on a year earlier marks the most significant drop in output growth since 1980.

A drop in GDP growth will inevitably have a knock-on impact on productivity growth, and it has, but the timing of this feed-through to productivity growth also depends on what happens in the labour market. Although GDP growth can come down relatively quickly, and sometimes abruptly, businesses tend to delay laying off workers or reducing hours worked i.e. reducing the amount of labour utilised. While hours worked tend to come down more quickly than numbers of people employed, there still tends to be a lag compared with a slowing in GDP growth. The responsiveness of businesses to reduce the amount of labour employed or utilised depends on a number of factors, including the ease with which businesses can recruit suitably qualified and experienced workers, the costs to the business of redundancy and of recruitment, induction and training of new staff, and the like. Generally an existing employee will be more valuable, and productive, to a business than a new recruit because of the experience and 'know-how' that person will have compared to a new recruit, so businesses will tend to hang on to existing labour if they can – known as 'labour hoarding'.

Figure 2 compares GDP growth with productivity growth, based on both the Gross Value Added (GVA) per hour worked and per worker measures. The movement of GDP growth and productivity growth over the last 19 years suggests that there is very little lag in the responsiveness of productivity growth to changes in GDP growth. This suggests a relatively responsive, or flexible, labour market to changes in output growth – if the labour market was relatively rigid, so that it was hard to recruit suitably qualified and experienced staff and

to reduce hours or lay off workers when output declined, then productivity growth rates would tend to decline ahead of falls in output growth in a downturn, but rise ahead of increases in output growth as the economy recovers. However, it could also be argued that the chart demonstrates that the UK's labour market is not terribly flexible in that productivity growth falls when GVA growth falls, rather than being a flatter trend, which would be the case if labour was reduced quickly as output growth declined. The extent to which productivity adjusts to changes in output, and labour is adjusted to changes in output, is clearly a question of degrees.

The current downturn in a longer term perspective

Over the last four decades there have been four downturns, all of which have encompassed technical recessions – 1974-75, 1980-81, 1991-92 and the current downturn. The impact of the drop in output growth on productivity growth appears to have been different during each phase.

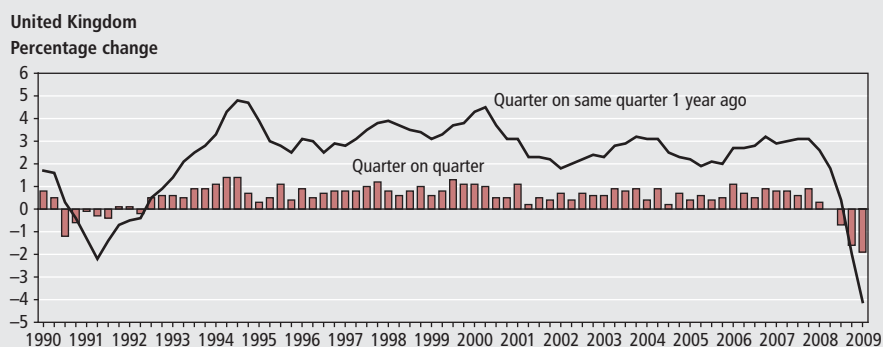
Figure 3 suggests that:

- in the 1970s, the fall in output growth was accompanied very closely by a fall

in productivity growth, and to similar proportions;

- in the downturn of the early 1980s and early 1990s, productivity growth seems to have declined before the fall in output growth suggesting that labour was continuing to be employed and recruited beyond the point when output growth had ceased to rise;
- productivity growth recovered ahead of output growth in the aftermath of the downturns in the early 1980s and early 1990s, again perhaps suggesting that labour was continuing to be shed, or at least wasn't being recruited, as output growth was beginning to recover, so that productivity growth rose ahead of output growth;
- despite the lags in responsiveness of companies to lay off and recruit labour as output growth falls and rises, the increasing gaps in the paths of productivity growth and output growth through the 1980s and 1990s coincides with significant reforms to, and therefore liberalisation of, the British labour market through the Thatcher era. It is interesting to see that despite these reforms, productivity growth still declined

Figure 1
GDP growth since 1990



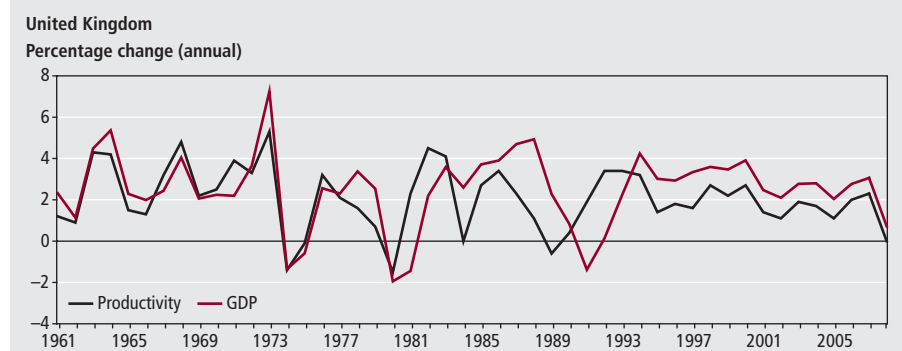
Source: ONS GDP Preliminary Estimate

Figure 2
GDP and productivity growth



Source: ONS GDP Preliminary Estimate and Productivity

Figure 3
Productivity per worker and output growth over the last five decades



Source: ONS GDP Preliminary Estimate and Productivity

markedly when the economy went into recession;

- since 1994, output growth has consistently outperformed productivity growth, in contrast to the decades before when the relationship was more variable. This coincides with increases in the employment rate, which would tend to lower productivity growth rates, but it also coincides with the ICT boom which should have boosted productivity growth rates;
- the latest downturn in output growth seems to have been closely followed by the downturn in productivity growth suggesting that businesses have not been quick to reduce labour as output growth has fallen, so pulling down productivity growth rates with output growth.

It should be noted that during a downturn, productivity growth would be expected not to fall as much as output growth in theory because it is the least productive workers that are laid off first and the more productive workers that are retained; similarly, in an upturn, productivity growth is likely to be lower than output growth because as more workers are taken on, so the skill and experience level of the incremental worker declines, and so does their productive potential.

What's driving the fall in productivity growth?

Figures 4 and 5 demonstrate that productivity growth has been coming down since mid 2008, on both the output per worker and output per hour basis. In the fourth quarter of 2008, growth in output per worker and output per hour, compared to the same quarter a year ago, dropped to -1.7 per cent and -1.8 per cent respectively. Figure 4 and Figure 5 indicate that this was driven by the dramatic drop

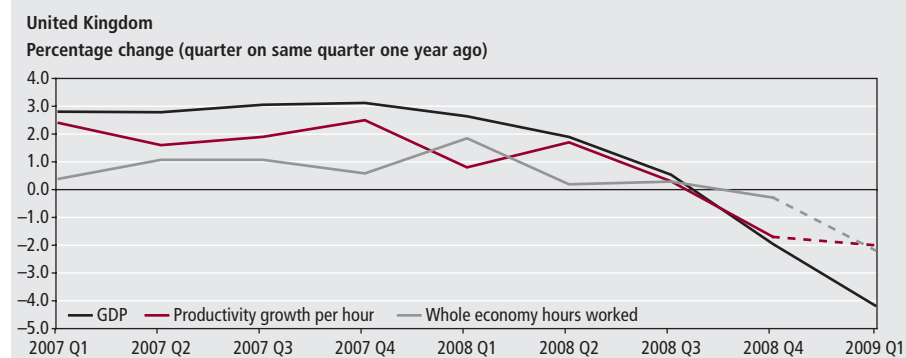
in output growth, but reinforced by the lack of adjustment to labour input. Although the growth of workers employed or hours worked declined, by -0.1 per cent and -0.3 per cent, this reduction was much less than the fall in output growth of -2 per cent for the same quarter.

Productivity growth for the first quarter of 2009 will not be published until the beginning of July, however the first release of output growth and labour market data for the first quarter suggest that productivity growth in the first quarter of 2009 is likely to have fallen further to around -2 per cent for output

per hour worked, and -3.5 per cent for output per worker. This is illustrated in Figures 4 and 5 by the dotted lines. It should be noted that these productivity growth estimates are based on preliminary output and labour market growth data, whereas by the beginning of July when the next Productivity Statistical Bulletin (formerly First Release) is published, further estimates of output growth and labour market indicators will have been released, so that the published productivity growth rates for 2009 quarter one will contain more up to date data.

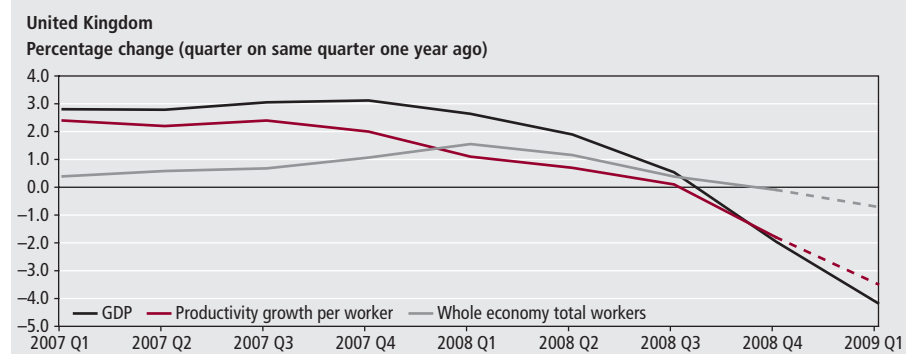
The labour market data for 2009 quarter one points to a much more marked reduction in the growth of hours worked compared to the reduction in growth of workers employed, though both have become more negative than in the fourth quarter of 2008. This reflects the absolute reduction in hours worked and workers employed in early 2009. The more notable reduction in growth of hours worked has served to limit the fall in productivity growth on a per hour basis, while the much more limited decline in growth of workers employed in early 2009 has served to exacerbate the fall in productivity growth rates, alongside the significant fall in output growth in early 2009.

Figure 4
Productivity growth per hour worked and its components¹



Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 5
Productivity growth per worker and its components¹



Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Productivity across sectors

The main economic sectors covered by the Productivity Release, with their respective weights in GDP, are:

- agriculture, forestry and fishing (1 per cent)
- production industries (mining, quarrying, manufacturing and utilities; 18 per cent)
- manufacturing (14 per cent)
- services (75 per cent)

Figure 6 and Figure 7 assess the relative productivity performance of the bigger sectors, that is excluding agriculture, forestry and fishing, relative to the whole economy. Figure 6 illustrates that the production industries (including manufacturing) have tended to have higher productivity growth rates than for the whole economy since the late 1990s, while service sector productivity growth rates have tended to be much more closely related to those of the whole economy. This partly reflects the higher capital intensity in production industries compared to service sectors, which would be expected to contribute to stronger productivity growth. In the service sector the scope for capital deepening is, by definition, much more limited because it tends to be labour itself that delivers the service. However, there is some scope for capital investment, particularly through intangible capital such as R&D, human capital development and software development, but the extent and penetration is more limited and less readily measurable. Figure 7 illustrates more clearly the impact of the economic downturn on productivity growth, with the production sector being much more badly hit than the service sector.

The significant weight of the service sector, particularly the financial and business services sector, and its relatively modest productivity growth decline compared to non-service sectors such as manufacturing and construction, has helped to support productivity growth to some extent, that is the drop in productivity growth could have been much more marked if productivity growth in the financial and business services sector had turned negative. While the decline in the productivity growth rate for the production industries has been significant (-4 per cent in 2008 quarter four on a per hour basis), its relatively modest weight (18 per cent) means its impact on whole economy productivity growth has been somewhat limited, though it still seems to have had a marked impact.

So while there have been significant drops in productivity growth by sector, much of this decline has arisen in the non-service sectors which now account for just 25 per cent of the economy. The contribution of each sector to the productivity growth slowdown, in terms of output per worker (Figure 8) and output per hour (Figure 9) are also presented. The sectors have been weighted using GVA weights, which is not entirely appropriate for productivity growth since it is made up of both GVA and labour market components, but GVA weights seem a sensible mechanism for weighting productivity growth to get an indication of which sectors are supporting and which sectors are pulling down productivity growth.

Productivity in the service sector

Since the service sector accounts for 75 per cent of the economy, and has followed the productivity growth pattern of the whole economy fairly closely, it seems incisive to look into the components of service sector productivity in a bit more

detail to assess the varying impact of the downturn on the various elements of the service sector.

Productivity growth for the components of the service sector are not published, with the exception of the distribution, hotels and catering sector, so the following analysis is based on calculated, or derived, estimates of productivity growth using GVA, Workforce Jobs (WFJ) and total hours worked estimates by sector, together with Labour Force Survey (LFS) aggregates for reconciling employment totals, as is done for the series in the Productivity First Release. The GVA estimates are published in the Quarterly National Accounts First Release, and the WFJ estimates are published in the Labour Market First Release, both of which are National Statistics releases. Total hours worked by sector is published for each quarter in Economic and Labour Market Review (ELMR) Table 6.08.

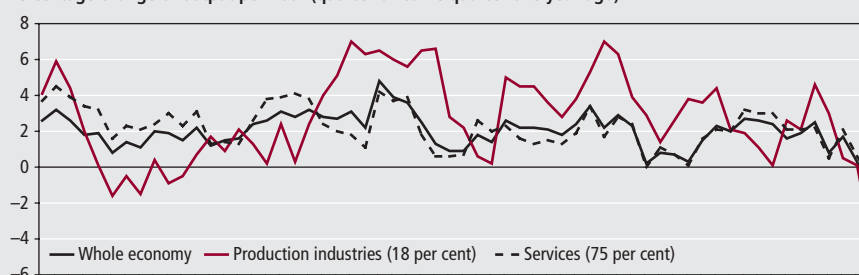
Figure 10 and Figure 11 illustrate the differing impact of the downturn on productivity growth in the main service sectors, for output per worker (Figure 10)

Figure 6

Productivity growth for the whole economy compared to the production and services sectors since 1994²

United Kingdom

Percentage change of output per hour (quarter on same quarter one year ago)



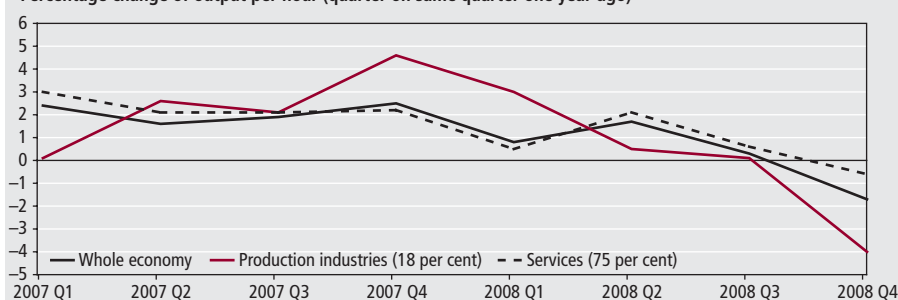
Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 7

Productivity growth for the whole economy compared to the production and services sectors since 2007²

United Kingdom

Percentage change of output per hour (quarter on same quarter one year ago)

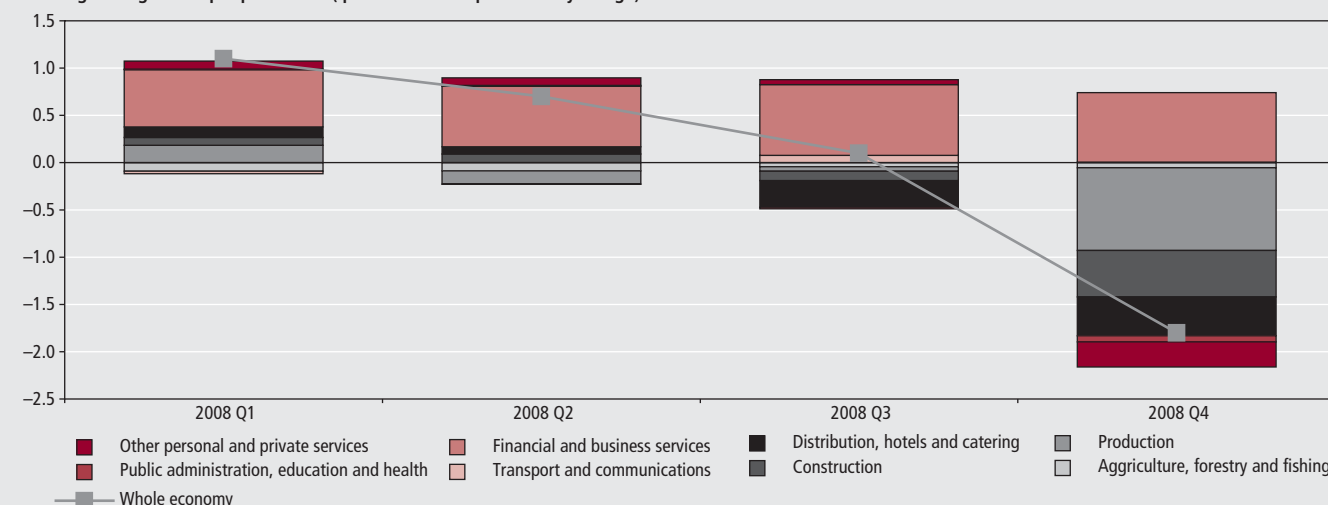


Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 8
Contributions to productivity growth by sector

United Kingdom

Percentage change of output per worker (quarter on same quarter one year ago)

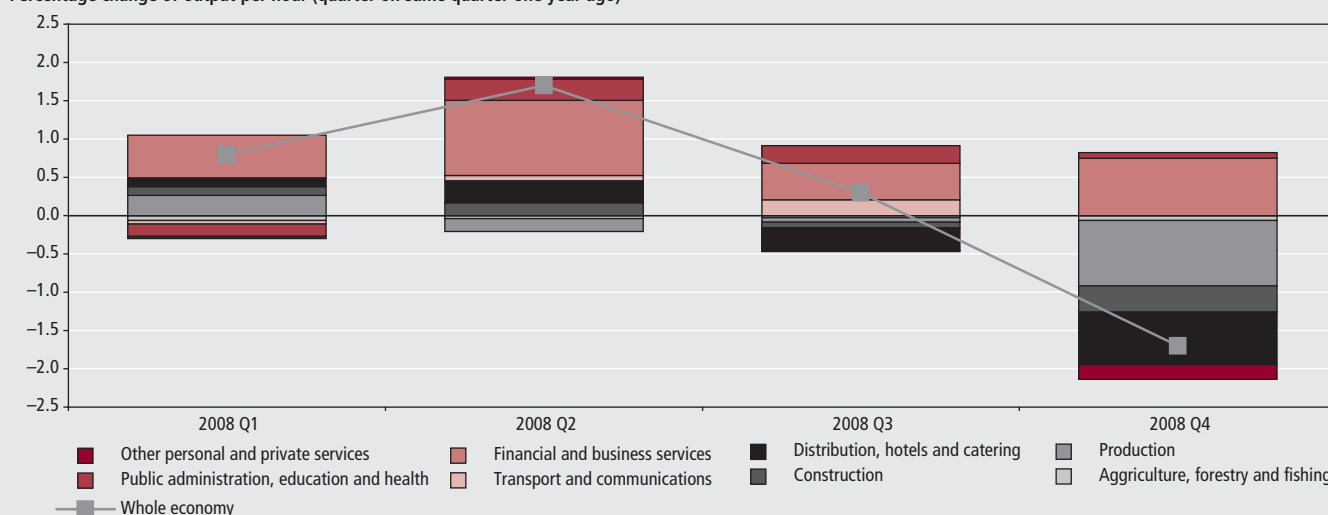


Source: ONS GDP Preliminary Estimate and Productivity

Figure 9
Contributions to productivity growth by sector

United Kingdom

Percentage change of output per hour (quarter on same quarter one year ago)



Source: ONS GDP Preliminary Estimate and Productivity

and output per hour worked (Figure 11). The figures illustrate the impact of the downturn in recent quarters, as well as offering some medium term context to the recent developments in productivity growth.

The main message emerging is that productivity growth has been relatively stable for some service sectors, such as the financial and business services sector and the public administration, education and health sector, in contrast to productivity growth for the transport and communication sector and the distribution, hotels and catering sector, both of which are perhaps more exposed to short term fluctuations in, and pressures from, exchange rates, disposable income and economic activity.

The stability of productivity growth of the financial and business services sector partly reflects the fact that output of the financial services sector is based in part on interest rate spreads, which have been unusually wide during the financial crisis and economic downturn. Similarly, output in the financial sector and public sector is partly based on the value of inputs, which results in some inherent, or methodological, stability of productivity growth.

While both measures of productivity growth offer useful insight into the efficiency of an economy and its sectors, the change in output per hour is often considered a better indicator of productivity

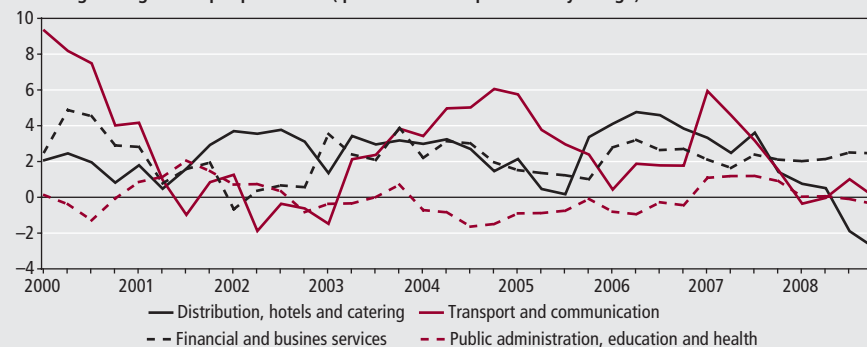
because it adjusts, or takes account of, differences in working patterns and regimes between countries and across industries. For example, workers in the distribution, hotels and catering sector are more likely to be paid by the hour, and so work a more hour-specific day, whereas workers in the financial and business services sector tend to be paid an annual salary, so the hours worked are less specified, and so workers are perhaps more likely to work a longer day because the focus is the output rather than the hours worked.

Since the recent downturn began to take hold in earnest, in mid 2007, some of these trends have been reinforced but others have shifted. For example:

Figure 10
Productivity growth across the services sector

United Kingdom

Percentage change of output per worker (quarter on same quarter one year ago)

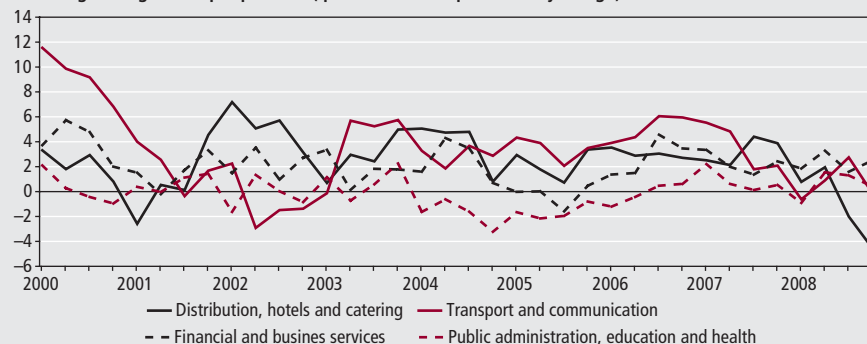


Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 11
Productivity growth across the services sector

United Kingdom

Percentage change of output per hour (quarter on same quarter one year ago)



Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

- the distribution, hotels and catering sector has suffered a significant fall in productivity growth since mid 2007, but this sector has tended to exhibit relatively volatile productivity growth rates over the last decade;
- the transport and communication sector has also shown marked falls in productivity growth rates since late 2006-early 2007, which is perhaps in keeping with its relatively volatile trend. During 2008 productivity growth rates for this sector have stabilised to some extent, but at very low rates, around zero per cent;
- the financial and business services sector has shown remarkable resilience in its productivity growth with very little decline over the last two years. This reflects a marked drop since mid-2007 in growth in workers and hours worked in the sector. Growth in the worker measure (WFJ) has fallen from 4 per cent in 2007 quarter three to -1 per cent and -2 per cent in quarter three and quarter four of 2008 respectively. Similarly, growth in hours worked for

the sector has fallen from nearly 5 per cent in 2007 quarter three to -0.3 per cent in 2008 quarter three;

- public administration, education and health sector productivity growth (based on the labour input methodology) has become slightly negative in the second half of 2008 as a result of growth in workers rising slightly faster than the growth in output. Productivity per worker growth averaged -0.2 per cent during 2008 compared to 0.9 per cent during 2007. It must be noted, however, that there are a number of measurement difficulties in reliably measuring and comparing the output of the public sector, with that of the private or market sectors of the economy. ONS is taking a lead in developing methodology to better measure the output and productivity of the public sector. Nevertheless, Figures 10 and 11 give an indication of recent developments in productivity growth compared to the trend over the last eight years.

Productivity growth for these four main service sectors for the last two years, based on both per worker and per hour measures are presented in **Figures 12 to 15**. By both measures of productivity growth, the distribution, hotels and catering sector is the only service sector where productivity growth has turned significantly negative with the economic downturn (Figure 12). For most of the service sectors, the two productivity growth measures have followed broadly similar paths, though growth in output per hour has tended to be slightly more volatile than growth in output per worker, because of the relative ease of adjusting hours worked compared to workers. Figure 14 serves to reinforce the notable exception of productivity growth over the last year in the financial and business services sector, which has remained positive and relatively stable, compared to the other three main service sectors.

This perhaps partly reflects difficulties in measuring the output of the financial sector, which is partly based on interest rate spreads.

Productivity growth in a macroeconomic policy context

Trend, or potential, growth reflects the underlying growth potential of the economy outside of, or beyond, cyclical influences. It is a key determinant of the long term growth rate of an economy, and as such is fundamental in determining the direction of living standards and the growth of per capita income. Although short term factors may influence GDP growth, and therefore living standards, such as the recent downturn, in the longer term it is this underlying potential growth of the economy that determines the wealth of a country and prosperity or living standards therein.

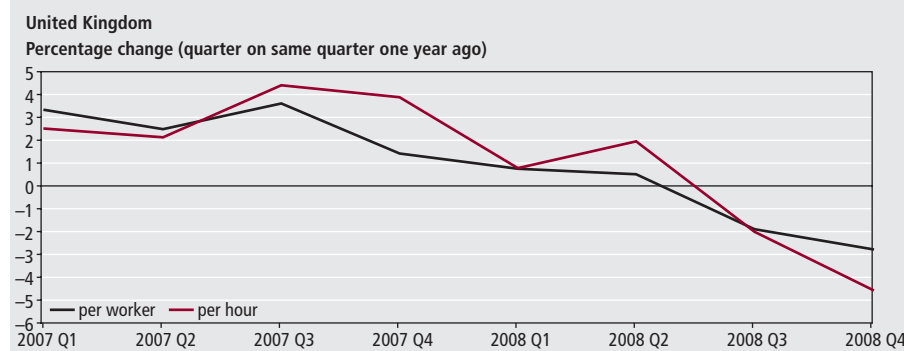
Estimates of trend growth for the past are based on the average growth rate between the beginning and end of an economic cycle, but projections of potential (or trend) growth are based on projections of four components:

- productivity growth
- average hours worked
- the employment rate and
- the adult population.

Figure 16 shows how estimates of trend growth across cycles have been attributed to productivity growth and labour input growth.

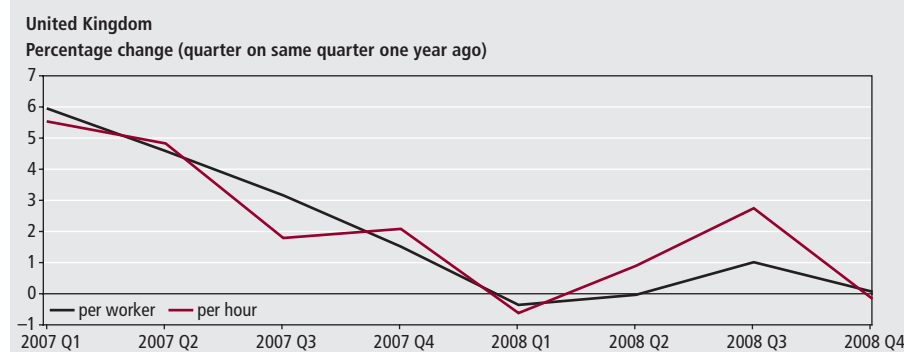
The Treasury's current projection of trend growth is 2.75 per cent, with an

Figure 12
Comparing output per worker and output per hour for the distribution, hotels and catering sector



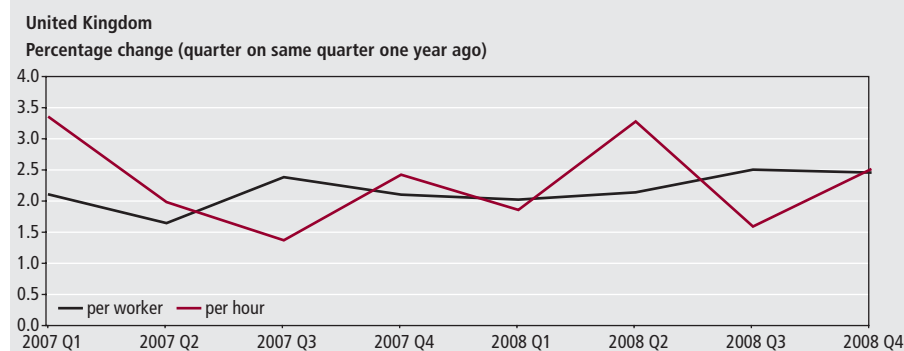
Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 13
Comparing output per worker and output per hour for the transport and communication sector



Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 14
Comparing output per worker and output per hour for the financial and business services sector



Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

inherent projection of productivity growth of just over 2 per cent. Clearly productivity growth is a fundamental element of what determines the growth potential of an economy. As such, it is an important Public Sector Agreement (PSA) target for the government in raising the rate of UK productivity growth over the economic cycle, improving competitiveness and narrowing the gap with our major industrial competitors.

In order to boost productivity growth,

the government has targeted five drivers of productivity, which are:

- skills
- investment
- innovation
- competition
- enterprise or entrepreneurship.

Given the underlying, or fundamental, contribution of productivity growth to output growth and prosperity, the recent

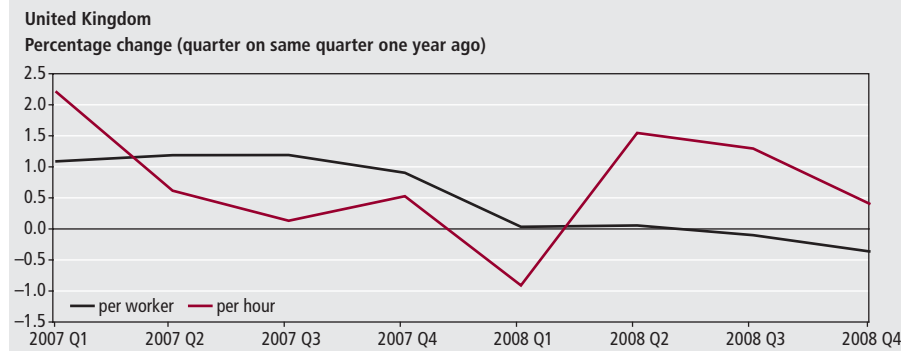
downturn is unlikely to change medium term projections of productivity growth, or potential (trend) growth. The Treasury consider that the downturn will have lowered the level of GVA or GDP but not affected the potential growth and productivity rate. However, if the downturn results in a significant restructuring of the economy, in particular of the level of 'trend' investment, skill levels or sectoral orientation, then trend productivity is likely to be influenced, and so therefore would trend growth. For the time being, however, the Treasury is maintaining its assumption of trend growth and productivity, of 2.75 per cent and just over 2 per cent respectively, but may come to assess the impact of the downturn once the economy has recovered and a full economic cycle has elapsed.

Conclusion

Productivity growth fell sharply in late 2008 and into early 2009, from an average during 2007 of just over 2 per cent for both major measures of productivity growth, to -2 per cent and -3.5 per cent for output per hour and output per worker respectively in the first quarter of 2009 (estimates based on published output and labour market data). This is due to both the rapid downturn in output growth coupled with a less proportionate downward adjustment to labour input growth, though this has gathered pace in the early part of 2009, particularly for hours worked. The apparent limited adjustment in labour input during the latter stages of 2008 was surprising given anecdotal evidence of redundancies and assumptions that the UK's labour market had increased in flexibility over the last two decades. However, the labour market data for the first quarter of 2009 suggests that the labour input adjustment has been gathering pace in recent months, particularly in terms of a reduction in hours worked, but also to a lesser extent in terms of workers employed. This would point to some 'plateauing out' of the fall in productivity growth rates during the middle of 2009.

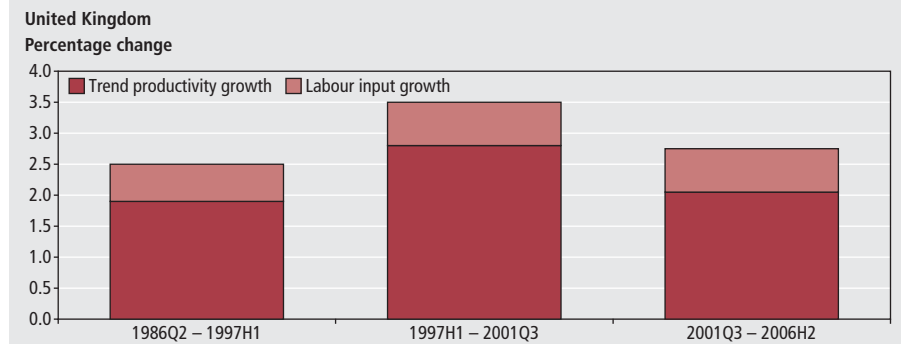
The recent decline in productivity growth is not out of kilter with previous economic downturns (early 1980s and early 1990s), when productivity growth fell to similar lows as declines in output growth. However, the timing of the fall in productivity growth compared to the decline in output growth has been slightly tighter this time, with productivity growth falling almost in synch with output growth, whereas in previous downturns productivity growth has tended

Figure 15
Comparing output per worker and output per hour for the public administration, education and health sector



Source: ONS GDP Preliminary Estimate, Productivity and Labour Market Statistics

Figure 16
Annual trend growth across each of the last three cycles³



Source: HM Treasury

to fall ahead of declines in output growth. This is due to the speed of adjustment to labour input growth. During this downturn, the relative lag in the decline in labour input growth suggests that productivity growth has fallen further than it might have done if labour input had been adjusted more rapidly.

The picture at the whole economy level masks considerable differences across the sectors. In particular, agriculture, forestry and fishing, the manufacturing and other production sectors, construction, the distribution, hotels and catering and transport and communication sectors have all experienced marked drops in productivity growth. This is somewhat unexpected, in that labour input should be relatively adjustable in these sectors. Surprisingly, the business and financial sector has shown much greater resilience in

terms of productivity growth, in good part due to a more marked labour adjustment than in many other sectors. Because of its relatively high weight in overall GVA, at 30 per cent, productivity growth in this sector has gone some way to offsetting the falls in productivity growth in the sectors listed above, which together account for 47 per cent of the economy.

The adverse impact of the downturn and financial market crisis on business investment will tend to reduce the capital intensity of future production, which in turn would be expected to lower the potential for productivity growth. So while productivity growth may recover in the near term as output growth recovers, particularly if this is ahead of the related labour input recovery, it may take longer for underlying productivity growth to recover as capital intensity ratios are restored. Conversely,

the increased competition that a downturn necessarily encompasses, both for firms and workers, will tend to push up underlying productive potential and productivity growth.

Similarly, the skill base may increase in the aftermath of the downturn, partly if people who are made redundant or are under-employed participate in more training and education. In addition, the government has committed to providing financial support for increased training for those aged 18–24 and unemployed for longer than one year. Entrepreneurialism and innovation may also increase as a result of the downturn, with some of those becoming redundant or leaving employment deciding to start up businesses, and the increased competition inherent in weaker economic activity can encourage innovation to stay ahead of competitors. Thus, the wider drivers of productivity growth may be affected by the downturn, in the medium term. However, it is difficult to determine where the balance of the impact on these underlying drivers of productivity growth will lie.

Notes

1. The peak in hours worked and workers in 2008 quarter one was due to Christmas and Easter both falling in the same quarter in 2008, in contrast to the previous year. The growth in hours worked and workers employed for 2009 quarter one are both based on labour market data for January 2009, as a proxy for the first quarter, until more up to date data is released. GVA growth for 2009 quarter one is the published preliminary estimate.
2. Manufacturing makes up 79 per cent of production industries. The remainder is extraction and utilities.
3. More information on HM Treasury's approach to estimating trend growth is provided in HM Treasury (2006) 'Trend growth: new evidence and prospects'. The Treasury's latest estimates of trend growth are set out in the 2009 Budget Report.

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FEATURE

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Labour disputes in 2008

SUMMARY

Labour disputes led to 758,800 working days being lost in the UK in 2008. In total, there were 144 stoppages of work, 94 per cent of which were in the public sector.

This article analyses the three main measures of labour disputes - working days lost, stoppages and workers involved - by industry, region, cause, size and duration. The statistics are put into context by considering estimates of working days lost per 1,000 employees and working time lost through strikes as a proportion of time actually worked.

Data are taken from a number of sources including regular centralised returns from some industries and public bodies, as well as directly from the employer or trade union involved after ONS has been notified of a dispute from press reports.

Key points

In the calendar year 2008:

- there were 758,900 working days lost through labour disputes
- there were 144 stoppages of work because of labour disputes. This compares with 142 stoppages in 2007 and 158 stoppages in 2006
- the majority of working days lost (94 per cent) were in the public sector, as were the majority of all stoppages (52 per cent).
- 99 per cent of working days lost were due to pay disputes.

Introduction

There were 758,900 working days lost in the UK in 2008 from 144 stoppages of work arising from labour disputes. The majority of these (94 per cent) being lost in the public sector. This article analyses the disputes by industry, region, cause, size and duration, and also compares the 2008 figures with previous years.

This article presents final figures on labour disputes for 2008 and analyses the figures in more depth than the provisional estimates published as part of monthly first release of Labour Market Statistics.

Annual changes

A comparison of statistics on labour disputes in 2007 and 2008 is shown in **Table 1**. There are three core components to the figures: the number of working days

lost through stoppages, the number of workers involved in those stoppages and the number of stoppages.

The 2008 total of 758,900 working days lost is lower than the 2007 total (1,041,100). But the total is higher than the average number of working days lost per year in the 1990s (660,000). However, it is considerably lower than the average for both the 1980s (7.2 million) and the 1970s (12.9 million).

The total of 144 stoppages in 2008 is marginally higher than the 2007 total of 142. There were two stoppages beginning in 2007 which continued into 2008. As well as this, there was also one stoppage that started in 2006 and continued into 2008. The number of stoppages has fallen sharply since the 1980s when the average annual number was 1,129. The average number in the 1990s was 273 per year.

There were 511,200 workers involved in labour disputes during 2008; this compares with 744,800 in 2007. The number of workers involved is higher than the average number involved in the 1990s (201,600) but below the average in the 1980s (1,040,300).

Review of 1989 – 2008

Table 2 presents labour dispute figures for the period 1989 to 2008 and **Figure 1** and **Figure 2** illustrate working days lost and the number of stoppages. The high number of days lost in 1996 was due to one very large stoppage in the transport, storage and communication group. This shows the impact that large disputes can

Table 1
Number of stoppages, workers involved and working days lost

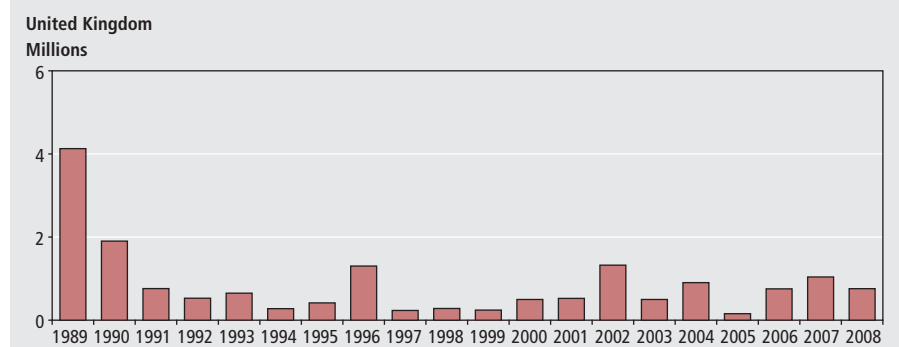
United Kingdom		
Working days lost through stoppages		
	2007	2008
In progress in year ¹	1,041,100	758,900
Beginning in year	1,034,400	757,500
Workers involved in stoppages		
In progress in year ²	744,800	511,200
Of which: directly involved	742,200	509,500
indirectly involved	2,600	1,700
Beginning in year	740,400	509,100
Of which: directly involved	739,600	507,400
indirectly involved	800	1,700
Stoppages		
In progress in year	142	144
Beginning in year	136	141

Notes:

Source: ONS Labour Market Statistics

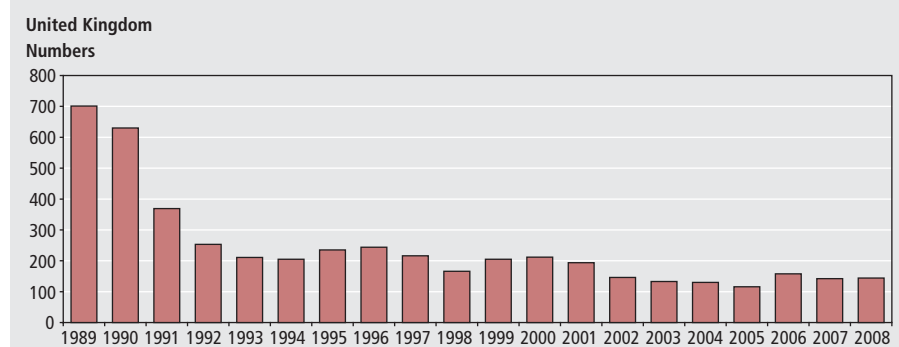
- 1 Stoppages that began in 2007 and continued into 2008 accounted for 1,200 days lost in 2008.
 2 Workers in progress figures also include workers who did not strike initially, but who joined at a later date.

Figure 1
Working days lost



Source: ONS Labour Market Statistics

Figure 2
Stoppages in progress



Source: ONS Labour Market Statistics

have on the statistics. This was also evident in 2002 when two disputes in public administration accounted for 60 per cent of the total days lost over the year.

Both Figures 1 and 2 show a substantial decline in strike activity in the 1990s. Figure 2 in particular shows that the number of strikes has been on a downward trend over the last 20 years.

The second column of Table 2 shows working days lost per 1,000 employees for each year from 1989 to 2008. This is the standard method that has been used to convert working days lost into a strike rate, taking account the size of the labour force. This also enables comparisons to be made across industries and regions that differ in size. Since the number of employee

jobs has not changed dramatically over the last 20 years, the rates for the UK as a whole show the same pattern of general decline. Occasional peaks can be seen on the working days lost series due to the reasons mentioned earlier. The 758,900 working days lost in 2008 is equivalent to 28 working days lost per 1,000 employees.

An alternative way of putting strike statistics into a wider context is to consider working time lost through strikes as a proportion of time actually worked. In 2008 an estimated 42,100 million hours were worked in the UK. Comparing this to 5.9 million hours lost through strikes shows that approximately one in every 7,100 potential working days were lost through strikes in 2008. The equivalent figure for 2007 was one in every 5,200.

Industrial Analyses

Historically, certain industries have been more prone to strike than others and breaking the strike statistics down into separate industries can reveal some interesting patterns and shift over time. However, it should be noted that comparisons between industries can also be affected by the methodology that is used for compiling the figures. For example, because small stoppages are excluded from the figures, it is more likely that industry groups with large firms will have disputes included in the statistics.

Table 3 shows labour dispute statistics for 2008 broken down into 27 industrial groups (classified according to the Standard Industrial Classification 2003). **Table 4** shows working days lost per 1,000 employees in 2007 and 2008 for the same industries.

Eighty one per cent of the working days lost in 2008 were a result of 16 stoppages in public administration and 14 per cent of the days lost were from 40 stoppages in education. There were also 28 stoppages in transport, which resulted in 24,800 working days being lost. The decline in the UK manufacturing industry is again evident with a total of only 6,900 days lost compared to 15,600 in 2007. This is a record low for manufacturing disputes.

Table 4 presents the strike rates for 2007 and 2008. The rate for the service sector has significantly decreased in 2008. The main reason for this can be found in the transport sector which has decreased significantly from 422 in 2007 to 16 in 2008. The strike rate for manufacturing continues to fall having decreased again

Table 2
Number of stoppages and working days lost

United Kingdom

Year	Working days lost (000s)	Working days lost per 1,000 employees ¹	Workers involved (000s)	Stoppages ²	Stoppages involving the loss of 100,000 working days or more
1989	4,128	172	727	701	6
1990	1,903	78	298	630	3
1991	761	32	176	369	1
1992	528	23	148	253	-
1993	649	28	385	211	2
1994	278	12	107	205	-
1995	415	18	174	235	-
1996	1,303	55	364	244	2
1997	235	10	130	216	-
1998	282	11	93	166	-
1999	242	10	141	205	-
2000	499	20	183	212	1
2001	525	20	180	194	1
2002	1,323	51	943	146	2
2003	499	19	151	133	-
2004	905	34	293	130	3
2005	157	6	93	116	-
2006	755	28	713	158	1
2007	1,041	38	745	142	4
2008	759	28	511	144	2

Notes:

- 1 Based on the (September 2008) estimates of employee jobs
2 Stoppages in progress during year

Source: ONS Labour Market Statistics

decreased from five in 2007 to two in 2008. In this sector, there was a significant fall in the rates for manufacturing of transport equipment, and food products products. Conversely, there was a significant rise in the coke, refined petroleum products industry.

Table 5 shows strike rates over time for the mining, energy and water supply industries, manufacturing and services sectors. In recent years, the services sector strike rate has tended to be higher than the rate in manufacturing. The mining, energy and water rate has tended to be erratic. It is worth noting however, that the employment in both mining and manufacturing has dropped dramatically over the last decade. **Figure 3** shows the strike rates for the manufacturing and services sectors separately for the period between 1999 and 2008. This chart depicts that the service has a larger strike rate per 1,000 employees when compared to the manufacturing industry. In all but one of the last ten years the strike rate in the service sector has been higher than that of the manufacturing sector. Although this is the case, the figures are generally high due to large strikes in the public administration and transport sectors.

Regional Analyses

Table 6 shows regional strike rates at the Government Office Region level between 2004 and 2008, with a further breakdown of the figures for 2008 by industry. The rates for 2008 are also illustrated in **Map 1**. When interpreting these figures, it is important to bear in mind that the industrial composition of employment in a region is a major influencing factor on the scale of labour disputes it experiences. Having noted this point, the region with the highest number of working days lost per 1,000 employee jobs in 2008 was the Scotland with 60. Significantly though, nine of the 12 regions saw a decrease in their strike rates compared to 2007. Northern Ireland showed the sharpest fall from 45 in 2007 to 4 in 2008. The South West, Eastern England, London and South East also showed significant decreases in 2008.

Causes of disputes

Table 7 shows stoppages in 2008 by principle cause and industry group and **Table 8** provides a time series of working days lost by cause. **Figure 4** illustrates the number of working days lost in 2008 by principle cause of dispute. In 2008,

99 per cent of working days lost were due to disputes over pay, this accounted for 67 per cent of all stoppages. The remaining numbers were split between hours worked, discipline, redundancy and trade union, with hours worked having the highest percentage. It should be noted that disputes over pay also include stoppages over feared or alleged reductions in earnings as well as disputes over pay increases.

Figure 5 shows the distribution of working days lost by cause in each year from 1999 to 2008 for four causes; pay, redundancy, staffing & work allocation and other. This shows the percentage of days lost due to disputes over pay increased further in 2008. The figures are often dominated in most years by one or two very large strikes which will, in turn, dominate all of the detailed analyses and can make comparisons over time difficult.

Disputes by duration

The statistics cover the number of days that strike action took place, not the number of days the parties involved in the dispute were actually in disagreement.

Table 9 shows the duration of the stoppages in progress in 2008 and

Table 3
Number of stoppages and working days lost: by industry, 2008

United Kingdom

Industry group (SIC 2003)	SIC class	Working days lost (000s) ¹	Workers involved (000s) ¹	Stoppages ²
All industries and services³		758.9	511.2	144
Mining, energy and water	10-14, 40, 41	0.7	0.8	1
Manufacturing	15-37	6.9	4.8	21
Services	50-99	748.5	502.6	116
Agriculture, hunting, forestry and fishing	01, 02, 05	0.1	0.1	2
Mining and quarrying	10,14	-	-	-
Manufacturing of:				
Food products, beverages and tobacco	15, 16	0.2	0.3	1
Textiles and textile products	17, 18	0.1	0.1	1
Leather and leather products	19	-	-	-
Wood and wood products	20	0.1	-	1
Pulp, paper and paper products; printing and publishing	21, 22	0.7	0.2	3
Coke, refined petroleum products and nuclear fuels	23	2.1	1.2	1
Chemicals, chemical products and man-made fibres	24	-	-	-
Rubber and plastic products	25	-	-	-
Other non-metallic mineral products	26	-	-	-
Basic metals and fabricated metal products	27, 28	1.3	0.7	6
Machinery and equipment not elsewhere specified	29	-	-	-
Electrical and optical equipment	30-33	0.6	0.4	3
Transport equipment	34, 35	1.5	1.7	3
Manufacturing not elsewhere specified	36, 37	0.3	0.2	2
Electricity, gas and water supply	40, 41	0.7	0.8	1
Construction	45	2.7	2.7	4
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	50-52	0.7	0.4	3
Hotels, restaurants, canteens & catering	55	-	-	-
Transport, storage and communication	60-64	24.8	19	28
Financial intermediation	65-67	-	-	-
Real estate, renting and business activities	70-74	0.7	0.5	7
Public administration and defence; compulsory social security	75	614.3	370.3	16
Education	80	103.4	110.3	40
Health and social work	85	1.7	0.5	4
Other community, social and personal service activities, private households with employed persons, extra-territorial organisations and bodies	90-93, 95, 99	2.9	1.6	18

Notes:

- 1 The figures for working days lost and workers have been rounded and consequently the sums of constituent items may not agree precisely with the totals.
 - 2 Some stoppages involved workers in more than one of the above industry groups, but have each been counted as only one stoppage in the totals for all industries and services.
 - 3 Stoppages in progress during year.
- Nil or negligible.

Source: ONS Labour Market Statistics

Table 4

Working days lost per 1,000 employees: by industry 2007 and 2008¹

United Kingdom

Industry group (SIC 2003)	SIC Class	2007	2008
All industries and services		38	28
Mining, energy and water	10-14, 40, 41	-	4
Manufacturing	15-37	5	2
Services	50-99	46	33
Agriculture, hunting, forestry and fishing	01, 02, 05	-	-
Mining and quarrying	10,14	-	-
Manufacturing of:			
Food products, beverages and tobacco	15, 16	8	1
Textiles and textile products	17, 18	-	1
Leather and leather products	19	-	-
Wood and wood products	20	1	1
Pulp, paper and paper products; printing and publishing	21, 22	1	2
Coke, refined petroleum products and nuclear fuels	23	-	87
Chemicals, chemical products and man-made fibres	24	-	-
Rubber and plastic products	25	-	-
Other non-metallic mineral products	26	4	-
Basic metals and fabricated metal products	27, 28	9	3
Machinery and equipment not elsewhere classified	29	-	-
Electrical and optical equipment	30-33	1	2
Transport equipment	34, 35	23	5
Manufacturing not elsewhere classified	36, 37	7	2
Electricity, gas and water supply	40, 41	-	4
Construction	45	2	2
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	50-52	-	-
Hotels, restaurants, canteens & catering	55	-	-
Transport, storage and communication	60-64	422	16
Financial intermediation	65-67	-	-
Real estate, renting and business activities	70-74	-	-
Public administration and defence; compulsory social security	75	215	422
Education	80	13	43
Health and social work	85	1	-
Other community, social and personal service activities, private households with employed persons, extra-territorial organisations and bodies	90-93, 95, 99	2	2

Notes:

1 Based on the latest (September 2008) estimates of employee jobs.
 - Nil or negligible.

Source: ONS Labour Market Statistics

Table 5
Working days lost per 1,000 employees: by industry group¹

United Kingdom

	Mining, energy and water	Manufacturing	Services	All industries and services
1999	-	14	7	10
2000	17	13	20	20
2001	141	11	22	20
2002	1	6	62	51
2003	2	18	20	19
2004	29	6	41	34
2005	34	5	6	6
2006	74	6	32	28
2007	-	5	46	38
2008	4	2	33	28

Notes:

Source: ONS Labour Market Statistics

- 1 Based on the latest (September 2008) estimates of employee jobs.
 - Nil or negligible.

Table 6
Stoppages in progress: by Government Office Region and industry group, 2008^{1,2,3,4}

United Kingdom

	United Kingdom													
	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	South West	East of England	London	South East	Wales	Scotland	Ireland	United Kingdom	
Days lost per 1,000 employees – all industries and services														
2004		33	19	37	20	23	13	11	18	16	28	160	99	34
2005		7	7	4	3	11	1	4	11	1	2	7	15	6
2006		51	43	23	18	15	8	8	10	5	51	49	30	28
2007		45	44	34	19	28	27	34	44	26	41	40	45	39
2008		54	38	24	17	22	12	7	13	7	48	60	4	28
2008 by industry group (SIC 2003)														
Working days lost (000s)														
Agriculture, hunting, forestry and fishing	-	-	-	-	-	-	0.1	-	-	-	-	-	-	0.1
Mining, quarrying, electricity, gas and water	-	-	-	-	-	-	-	-	-	-	-	0.7	-	0.7
Manufacturing	0.2	0.6	0.1	0.2	1.4	0.2	-	0.1	0.2	-	3.6	0.2	6.8	
Construction	-	0.1	-	-	-	0.1	-	-	-	-	2.5	-	2.7	
Transport, storage and communication	-	0.5	2.2	0.4	1.2	1.1	0.5	6.3	0.5	-	1.7	-	24.8	
Public administration and defence	50.7	97.3	41.6	26.8	39.3	17.1	9.9	24.3	13.2	45.6	133.7	2.4	614.3	
Education	4.8	14.0	9.2	5.2	10.0	7.8	6.1	20.1	11.3	9.3	1.1	0.3	103.4	
All other services	-	1.5	0.7	-	0.3	-	0.1	0.8	0.2	0.2	0.2	0.2	6.7	
All industries and services	55.7	114.0	53.8	32.6	52.2	26.4	16.5	51.5	25.4	55.1	143.4	3.1	758.9	
Workers involved (000s)														
Agriculture, hunting, forestry and fishing	-	-	-	-	-	-	0.1	-	-	-	-	-	-	0.1
Mining, quarrying, electricity, gas and water	-	-	-	-	-	-	-	-	-	-	0.8	-	0.8	
Manufacturing	0.1	0.3	-	0.3	1.3	0.2	-	0.1	0.1	-	2.3	0.2	4.9	
Construction	-	0.1	-	-	-	0.2	-	-	-	-	2.5	-	2.7	
Transport, storage and communication	-	0.6	0.6	0.2	0.1	0.4	0.2	3.5	0.3	-	1.3	-	19.0	
Public administration and defence	30.1	56.6	27.5	18.1	29.2	10.8	6.5	14.7	8.7	28.7	85.9	1.3	370.3	
Education	5.5	14.7	9.7	5.6	11.0	8.2	6.5	21.3	12.6	9.9	0.2	-	110.3	
All other services	-	0.7	0.3	-	0.1	-	0.1	0.6	0.2	0.2	0.2	0.2	3.1	
All industries and services	35.7	73.0	38.0	24.1	41.6	19.9	13.2	40.3	21.8	38.9	93.2	1.7	511.2	
Stoppages														
Agriculture, hunting, forestry and fishing	-	-	-	-	-	-	2	-	-	-	-	-	-	2
Mining, quarrying, electricity, gas and water	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Manufacturing	2	3	1	1	4	2	-	1	1	-	5	1	21	
Construction	-	1	-	-	-	2	-	-	-	-	1	-	4	
Transport, storage and communication	-	3	3	3	1	1	2	9	1	-	5	-	28	
Public administration and defence	2	3	4	2	4	2	2	2	2	2	4	1	16	
Education	3	9	6	5	4	5	2	13	4	2	1	1	40	
All other services	-	5	3	-	2	1	1	8	2	1	3	3	32	
All industries and services	7	24	17	11	15	15	7	33	10	5	20	6	144	

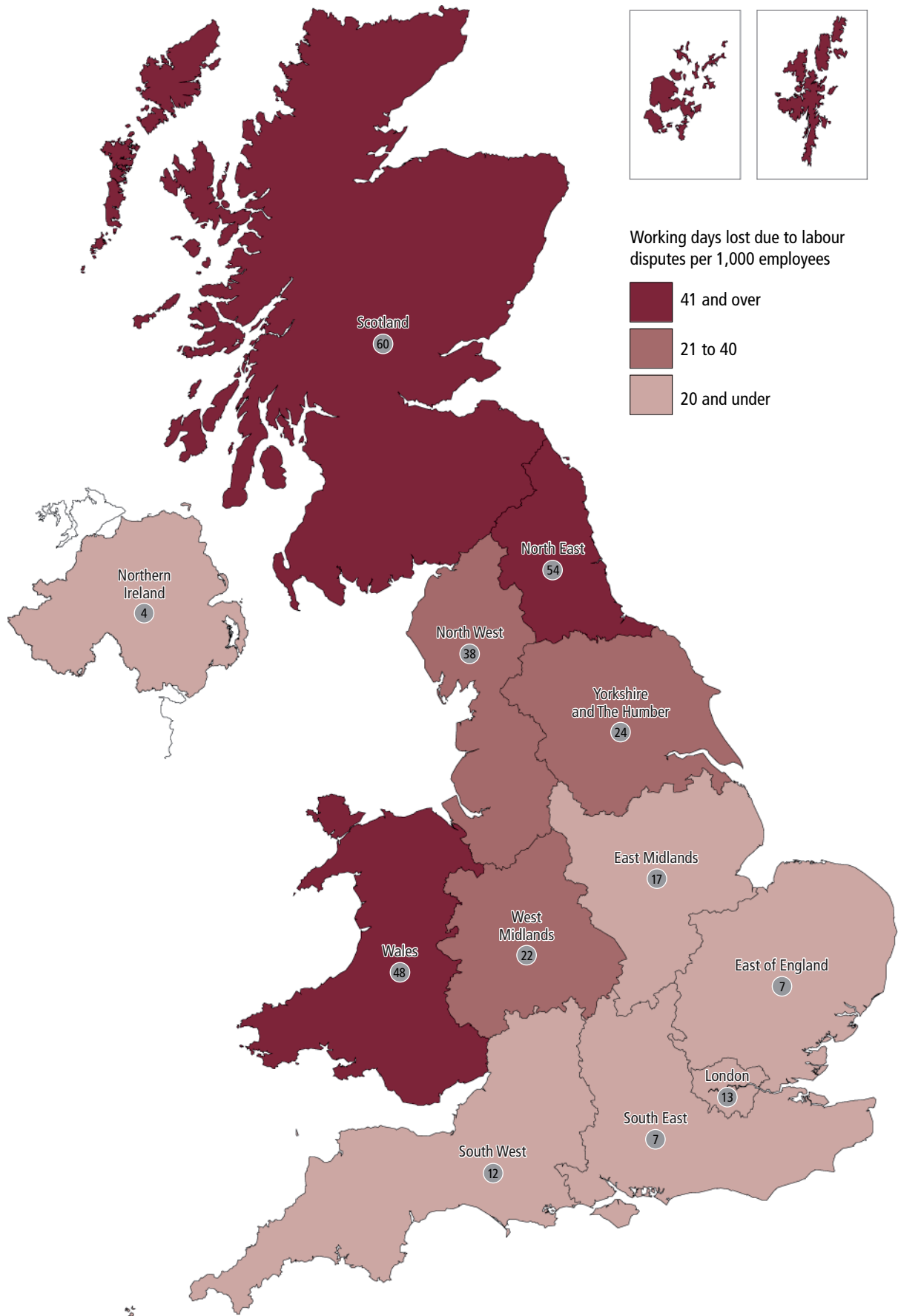
Notes:

Source: ONS Labour Market Statistics

- 1 The figures for working days lost and workers involved have been rounded and consequently the sum of the constituent items may not agree precisely with the totals.
 2 Figures for widespread stoppages which cannot be broken down to Government Office Regional level are included in the UK total but excluded from the regional figures in the table above. This accounts for 129,200 days lost in 2008.
 3 When a stoppage has been identified as covering more than one broad industry group, the actual number of working days lost and workers involved will be allocated to the specific broad industry group, however, the stoppage will be included.
 4 Based on the latest (September 2008) estimates of employee jobs.
 - Nil or negligible.

Map 1

Working days lost per 1,000 employees, all industries and services, 2008



Source: Office for National Statistics

Figure 3
Working days lost per 1,000 employees: by sector

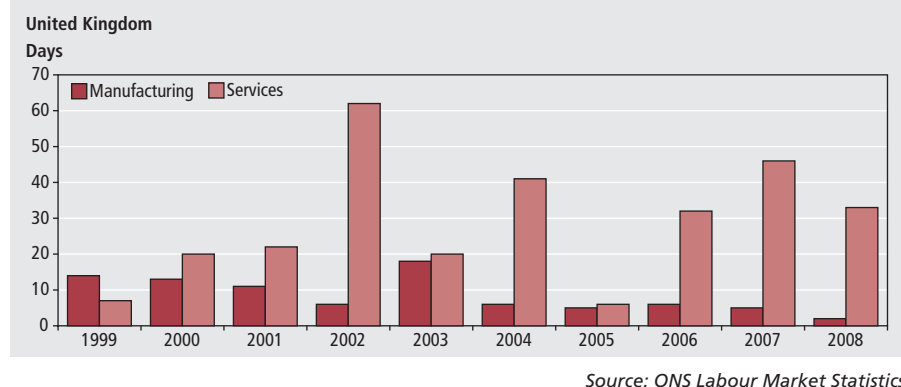


Figure 4
Working days lost: by principal cause of dispute, 2008

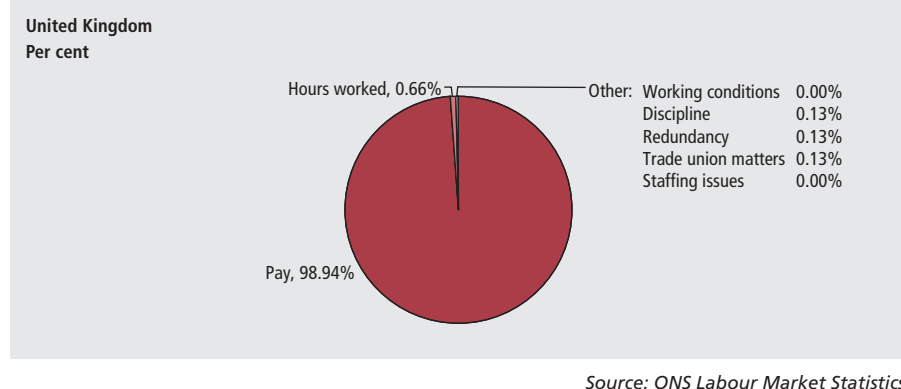


Figure 5
Working days lost by principal cause of dispute

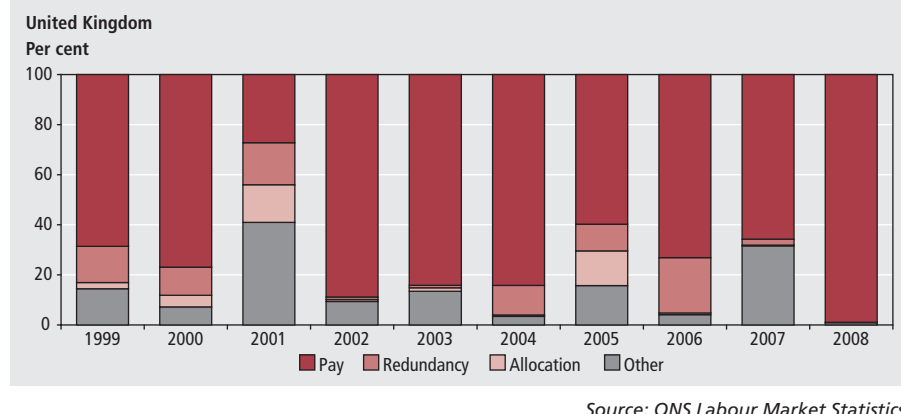
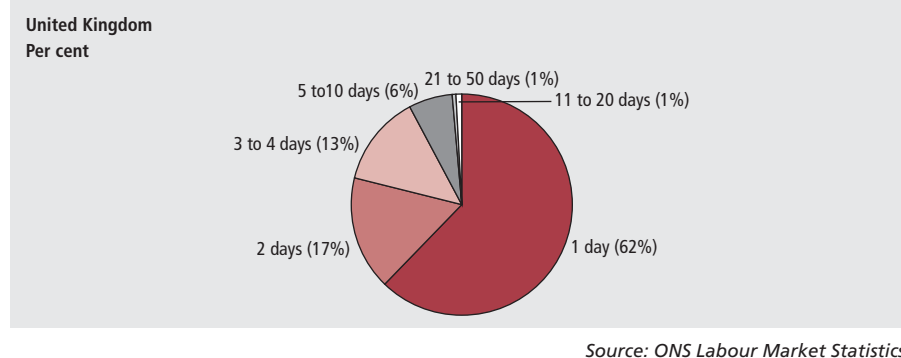


Figure 6
Proportions of stoppages in progress: by duration, 2008



this information is also displayed geographically in **Figure 6**. Some 62 per cent of stoppages lasted just one day, involved 239,400 workers and accounted for 37 per cent of the total working days lost. At the other extreme, only one stoppage lasted over 50 days, involved a total of 100 workers and accounted for 0.1 per cent of the total working days lost.

Disputes by size

Table 10 shows disputes in 2008 by size and **Figure 7** illustrates that a large proportion of days lost result from large stoppages, but very few stoppages are large. The chart shows that 87 per cent of working days lost in 2008 resulted from stoppages where more than 50,000 days were lost in total, but that only 3 per cent of stoppages were that large. There were six stoppages with more than 5,000 working days lost, these stoppages accounted for only 4 per cent of all stoppages. The highest proportion of stoppages was within the under 250 day's category, accounting for 65 per cent of all stoppages, although this category recorded one of the lowest working days lost percentage of 1.1 per cent.

Disputes by public/private sector

Figure 8 and **Figure 9** illustrate the breakdown of working days lost and the number of stoppages between the public and private sectors respectively. The figures are also shown in **Table 11**. The number of working days lost in the public sector fell from 1,000,200 in 2007 to 711,000 in 2008. The proportion of working days lost from the public sector has fallen again this year, from 96 per cent in 2007 to 94 per cent in 2008. With the 2007 percentage of 96 per cent being a high since data were recorded in 1996.

In the private sector 47,800 days were lost in 69 stoppages which accounts for only 6 per cent of all days lost in 2008. This compares to 39,000 days lost in 2007 from 52 stoppages which accounted for 4 per cent of all days lost. This was a record low.

The number of stoppages in the public and private sectors has levelled out once again this year; with 52 per cent of stoppages in the public sector and 48 per cent in the private sector. Generally, the breakdowns of stoppages between the public and private sectors have been fairly consistent. Although in 2007 the public sector dominated the strike statistics to a greater extent than the private sector.

Table 7

Working days lost, workers involved and stoppages in progress: by main cause and broad industry group, 2008

United Kingdom

	Wage disputes		Other causes							All causes
	Wage rates and earnings levels	Extra wage and fringe benefits	Total Wage Disputes	Duration and pattern of hours worked	Redun- dancy questions	Trade union matters	Working conditions and supervision	Staffing and work allocation	Dismissal and other disciplinary measures	
Working days lost (000s)¹										
Agriculture, hunting, forestry and fishing	0.1	-	0.1	-	-	-	-	-	-	0.1
Mining, quarrying, electricity, gas and water	0.7	-	0.7	-	-	-	-	-	-	0.7
Manufacturing	3.3	2.1	5.4	0.6	0.4	0.4	-	-	-	6.8
Construction	2.5	-	2.5	-	0.2	0.1	-	-	-	2.8
Transport, storage and communication	20.5	-	20.5	3.1	0.5	0.1	0.3	0.2	0.1	24.8
Public administration and defence	614.0	-	614.0	-	-	-	-	-	0.2	614.2
Education	101.4	-	101.4	1.1	-	0.4	0.4	-	0.1	103.4
Other services	5.5	0.1	5.6	0.4	-	-	-	-	-	6.0
All industries and services	747.9	2.2	750.1	5.2	1.1	1.0	0.7	0.2	0.5	758.8
Workers involved (000s)¹										
Agriculture, hunting, forestry and fishing	0.1	-	-	-	-	-	-	-	-	0.1
Mining, quarrying, electricity, gas and water	0.8	-	-	-	-	-	-	-	-	0.8
Manufacturing	2.4	1.2	3.6	0.5	0.3	0.5	-	-	-	4.9
Construction	2.5	-	2.5	-	0.1	0.2	-	-	-	2.8
Transport, storage and communication	17.1	-	17.1	1.2	0.3	0.2	0.1	0.1	0.1	19.1
Public administration and defence	370.1	-	370.1	-	-	-	-	-	0.3	370.4
Education	108.9	-	108.9	0.6	-	0.4	0.2	-	0.2	110.3
Other services	2.8	0.1	2.9	0.2	-	-	-	-	-	3.1
All industries and services	504.6	1.3	505.9	2.5	0.7	1.2	0.3	0.1	0.5	511.2
Stoppages²										
Agriculture, hunting, forestry and fishing	2	-	2	-	-	-	-	-	-	2
Mining, quarrying, electricity, gas and water	1	-	1	-	-	-	-	-	-	1
Manufacturing	14	1	15	3	2	1	-	-	-	21
Construction	1	-	1	-	2	1	-	-	-	4
Transport, storage and communication	13	-	13	7	1	2	1	2	2	28
Public administration and defence	15	-	15	-	-	-	-	-	1	16
Education	18	-	18	16	-	1	2	1	1	39
Other services	29	1	30	2	1	-	-	-	-	33
All industries and services	96	2	98	28	6	5	3	3	4	144

Notes:

Source: ONS Labour Market Statistics

- The figures for working days lost and workers involved have been rounded and consequently the sum of the constituent items may not agree with the totals.
 - The number of stoppages for the industry groups shown may not sum to the total for all industries and services as some stoppages which affect more than one broad industry group have been counted once only in the total for all industries and services.
- Nil or negligible.

Table 8

Working days lost: by main cause in all industries and services¹

United Kingdom

Thousands

Year	Wage disputes		Other Causes							All causes
	Wage rates and earnings levels	Extra wage and fringe benefits	Total	Duration and pattern of hours worked	Redundancy questions	Trade union matters	Working conditions and supervision	Staffing and work allocation	Dismissal and other disciplinary	
1998	147	19	166	2	54	2	14	16	28	282
1999	159	8	166	5	35	2	15	6	14	242
2000	376	8	383	6	56	0	11	23	18	499
2001	141	3	143	13	88	6	173	79	23	525
2002	1039	137	1176	3	14	5	110	10	7	1323
2003	280	140	420	63	5	0	2	7	2	499
2004	759	3	762	19	107	11	0	5	1	905
2005	87	8	94	7	17	6	9	22	2	157
2006	77	475	552	4	167	2	16	5	9	755
2007	676	9	684	316	25	5	1	3	6	1041
2008	748	2	750	5	1	1	1	0	0	759

Note:

Source: ONS Labour Market Statistics

- The figures for working days lost have been rounded and consequently the sum of the constituent items may not agree with the totals.

Table 9
Stoppages in progress: by duration in working days, 2008

United Kingdom

	Working days lost (000s) ^{2,3,4}	Proportion of all working days lost (per cent)	Workers involved (000s) ³	Proportion of all workers (per cent)	Stoppages in progress	Proportion of all stoppages (per cent)
Days¹						
1	277.8	36.6	239.4	46.8	89	61.8
2	363.3	47.9	222.8	43.6	24	16.7
3	100.5	13.2	40.0	7.8	10	6.9
4	3.8	0.5	1.0	0.2	9	6.3
5	9.9	1.3	7.5	1.5	4	2.8
6-10	1.9	0.3	0.3	0.1	5	3.5
11-15	0.3	0.0	0.0	0.0	1	0.7
16-20	0.0	0.0	0.0	0.0	0	0.0
21-30	0.0	0.0	0.0	0.0	0	0.0
31-50	1.2	0.2	0.1	0.0	1	0.7
Over 50	0.1	0.0	0.1	0.0	1	0.7
All stoppages	758.9	100	511.2	100	144	100

Notes:

Source: ONS Labour Market Statistics

- 1 The statistics cover the number of days that strike action took place, not the number of days the parties involved in the dispute were actually in disagreement.
 - 2 Classification by size is based on the full duration of stoppages, but the figure for days lost include only those days lost in 2008.
 - 3 The figures for working days lost and workers involved have been rounded and consequently the sum of the constituent items may not agree precisely with the totals.
 - 4 The working days lost figures are in general less than the product of the duration of each stoppage and the number of workers involved, because some workers would not have been involved throughout the dispute - see technical note.
- Nil or negligible.

Table 10
Stoppages in progress: by size of dispute, 2008

United Kingdom

	Working days lost (000s) ¹	Proportion of all working days lost (per cent)	Workers involved (000s) ¹	Proportion of all workers (per cent)	Stoppages in progress	Proportion of all stoppages (per cent)
Working days lost in each dispute						
Under 250 days	8.2	1.1	6.5	1.3	94	65.3
250 and under 500	5.3	0.7	3.6	0.7	15	10.4
500 and under 1,000	7.9	1.0	6.0	1.2	11	7.6
1,000 and under 5,000	27.2	3.6	22.7	4.4	14	9.7
5,000 and under 25,000	54.0	7.1	52.5	10.3	6	4.2
25,000 and under 50,000	0.0	0.0	0.0	0.0	0	0.0
50,000 days and over	656.4	86.5	419.9	82.1	4	2.8
All stoppages	758.9	100	511.2	100	144	100

Note:

Source: ONS Labour Market Statistics

- 1 The figures for working days lost and workers involved have been rounded and consequently the sum of the constituent items may not agree with the totals.

Table 11
Number of stoppages and working days lost: by private and public sector

United Kingdom

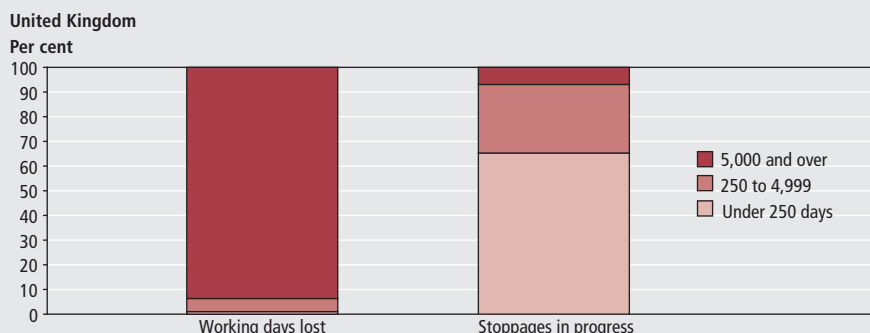
Year	Working days lost (000s)		Stoppages ¹		Strike rate		Employee jobs		
	Private	Public	Private	Public	Private	Public	Private	Public	Total
1999	172	70	102	103	9	13	19882	5207	25089
2000	136	363	99	113	7	69	20370	5288	25658
2001	128	397	83	111	6	74	20609	5378	25987
2002	200	1,123	85	61	10	205	20600	5485	26085
2003	130	369	87	46	6	65	20505	5641	26146
2004	163	742	62	68	8	129	20587	5756	26343
2005	59	99	56	60	3	17	20758	5850	26608
2006	98	656	71	87	5	111	20916	5899	26815
2007	39	1,002	52	90	2	173	21320	5785	27105
2008	48	711	69	75	2	124	23741	5750	29491

Note:

Source: ONS Labour Market Statistics

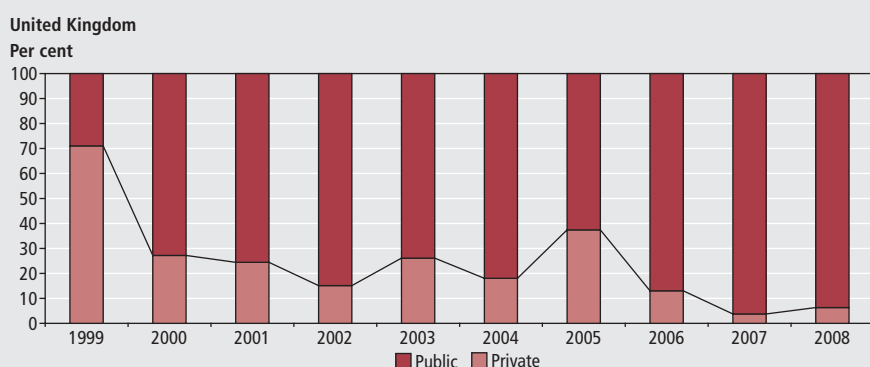
- 1 Stoppages in progress during year.

Figure 7
Proportions of stoppages in progress and working days lost: by size of dispute, 2008



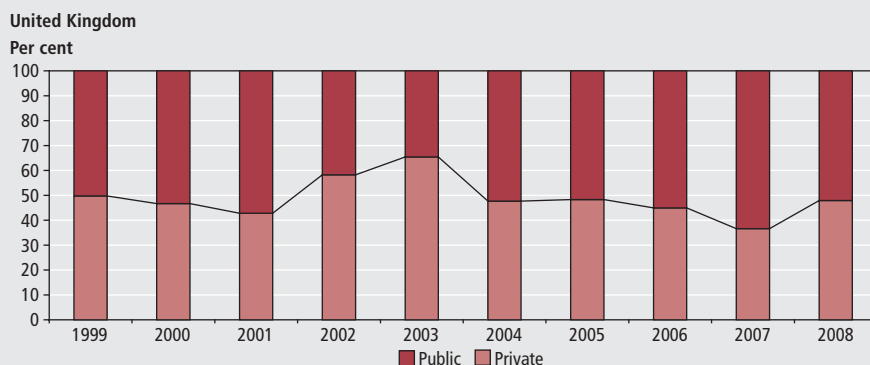
Source: ONS Labour Market Statistics

Figure 8
Working days lost: by private/public sector split



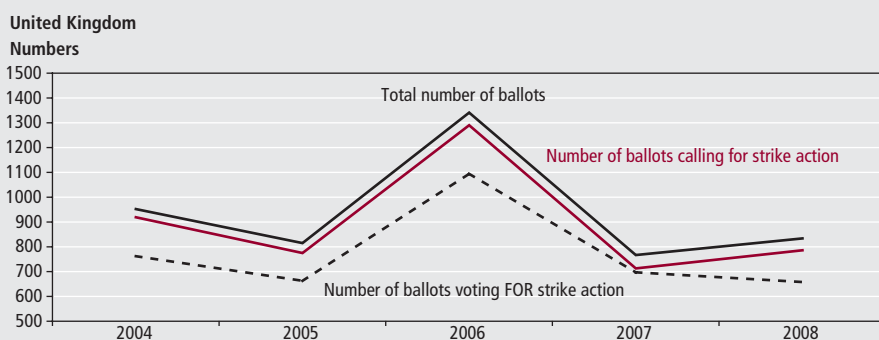
Source: ONS Labour Market Statistics

Figure 9
Stoppages: by private/public sector split



Source: ONS Labour Market Statistics

Figure 10
Ballots resulting in strike action



Source: Electoral Reform Services

Trade Union Ballots

Annual trade union ballot data for the period 2004 – 2008 is presented in **Table 12** and **Table 13**. The number of ballots¹ calling for strike action had increased steadily between 2003 and 2006, peaking at 1290 ballots in 2006, which was 96 per cent of the total number of ballots. The 2007 figures present a much lower number of ballots at 713. However the proportion of those ballots calling for strike action resulting in a 'yes' has increased considerably to 98 per cent for 2007, an increase of 13 per cent on the 2006 figure of 85 per cent.

The number of ballots calling for action 'short of a strike' in 2007 remained stable, with 583 (76 per cent of total ballots) compared to 579 in 2006. The proportion of those ballots resulting in a 'yes' vote has shown an increase this year, after falling steadily over the previous four year period.

The five year time series for trade union ballots is illustrated **Figure 10**. It can be seen that the trend for ballots voting for strike action closely follows the trends for the number of ballots calling for strike action and the total number of ballots. Nevertheless, there is still a notable difference in the number of ballots calling for strike action and those resulting in a 'yes' vote.

Notes

1. As the majority of ballots include options for both 'strike action' and 'action short of strike action,' the total number of ballots does not equal the total of these options added together.

CONTACT

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Table 12
Trade union ballots: strike action

United Kingdom

Year	Total ballots	Ballots calling for 'strike action'	Ballots voting FOR strike action	Ballots voting AGAINST strike action	Split result
2004	952	919	762	144	13
2005	815	775	663	109	9
2006	1341	1290	1094	140	57
2007	767	713	697	64	12
2008	834	786	658	123	13

Source: Electoral Reform Services

Table 13
Trade union ballots: action short of a strike

United Kingdom

Year	Total Number of ballots	Ballots calling for 'action short of a strike'	Ballots voting FOR action short of a strike	Ballots voting AGAINST action short of a strike	Split result
2004	952	756	708	41	9
2005	815	606	562	35	7
2006	1341	579	541	27	9
2007	767	583	555	19	9
2008	834	598	559	30	9

Source: Electoral Reform Services

TECHNICAL NOTE

Coverage

Information regarding labour disputes within the UK is collected by ONS from a variety of sources. Certain major industries and public bodies provide regular centralised returns but more often the information is collected directly from the employer or trade union involved after ONS have been notified of a dispute from press reports. Up until September 1996, this information was collected by the Employment Service local office network on behalf of ONS. ONS publishes figures on labour disputes each month. They appear in the *Labour Market Statistics first release table 20* and are published in *Tables 6.29 and 6.30* in the Labour Market Data section of *Economic & Labour Market Review*.

Definition of stoppages

The statistics cover stoppages of work in progress in the UK during a year caused by labour disputes between employers and workers, or between workers and other workers, connected with terms and conditions of employment. A distinction can be drawn between stoppages that started in the current year and those that started in earlier years.

The statistics exclude disputes that do not result in a stoppage of work, for example work-to-rules and go-slows; this is because their effects are not quantifiable to any degree of certainty. Stoppages involving fewer than 10 workers or lasting less than one day are also excluded unless the total number of working days lost in the dispute is 100 or more.

Stoppages over issues not directly linked to terms and conditions between workers and employers are omitted, although in most years this is not significant. For example, in 1986 one stoppage was considered to be political (a protest in the coal industry against the visit of an MP) and it was excluded from the figures. The total working days lost amounted to less than 1,000. The next known dispute to be excluded was in 1991. This involved a boycott by self-employed market traders who, after increased rent and changes to the market rules, kept their stalls closed for about 20 weeks.

The statistics include 'lock-outs', where an employer prevents their employees from working by refusing entry to the place of work, and 'unlawful', i.e. unlawfully organised strikes. However, no distinction is made between a 'strike' and a 'lock-out' or between 'lawful' and 'unlawful' stoppages. This is principally because of the practical difficulty in deciding which category a particular stoppage falls into. It was for similar reasons that a distinction between 'official' and 'unofficial' disputes was no longer made after 1981.

Working days lost

Working days lost are defined as the number of days not worked by people involved in a dispute at their place of work. In measuring the number of working days lost, account is taken only of the time lost in the basic working week. Overtime work is excluded, as is weekend working where it is not a regular practice. Where an establishment is open every day, and runs two or more shifts, the statistics will record the number of working days lost for each shift. In recording the number of days lost, allowance is made for public and known annual holidays, such as factory fortnights, occurring within the strike's duration. No allowance is made for absence from work for such reasons as sickness and unauthorised leave.

Where strikes last less than the basic working day, the hours lost are converted to full-day equivalents. Similarly, days lost by part-time workers are converted to full-day equivalents. The number of working days lost in a stoppage reflects the actual number of workers involved at each point in the stoppage. This is generally less than the total derived by multiplying the duration of the stoppage by the total number of workers involved at any time during the stoppage, because some workers would not have been involved throughout.

In disputes where employers dismiss their employees and subsequently reinstate them, the working days lost figure includes those days lost by workers during the period of dismissal.

For disputes where employers dismiss their employees and replace them with another workforce the statistics cannot assume that working days lost by the sacked workers continue indefinitely. In such cases the statistics measure the number of days lost in terms of the size of the replacement workforce. For example, where an employer initially recruits 100 workers and wishes to build up to 300, the number of working days lost on day one will be 200 and will then progressively reduce on subsequent days, eventually to zero when the new workforce reaches the target of 300.

Number of stoppages

There are difficulties in ensuring complete recording of stoppages, in particular for short disputes lasting only a day or so, or involving only a few workers. Because of this recording difficulty and the cut-off applied, the number of working days lost is considered to be a better indicator of the impact of labour disputes than the number of recorded stoppages.

Workers involved

The figures for workers involved are for workers both directly and indirectly involved at the establishment where the dispute occurred. Workers indirectly involved are those who are not themselves parties to the dispute but are laid off because of the dispute. However, the statistics exclude workers at other sites who are indirectly affected (because of a shortage of material from a supplier who is in dispute, for example). This is partially because of the difficulty in deciding to what extent a particular firm's production problems are due to the effects of a strike elsewhere or some other cause. Workers involved in more than one stoppage during the year are counted in the statistics for each stoppage in which they take part. Part-time workers are counted as whole units.

The statistics try to record the number of workers that are involved at any time in the stoppage. For example, consider a three-day strike where there were 200 workers involved on the first day; 300 on the second day, of whom 100 were involved for the first time; and 200 on the third day, of whom 50 were involved for the first time. The total number of workers involved in the dispute is 350 - the sum of all those involved on the first day, and those joining for the first time on subsequent days. However, the number of workers taking strike action for the first time during a dispute cannot always be easily ascertained. In such cases the statistics record the highest number involved at any one time (300 in the above example). Take another example, where there are 200 workers involved in a stoppage on each of days one, two and three. It may be necessary to assume that there were a total of 200 workers involved, although it is possible, but unlikely, that as many as 600 workers could have been involved. For this reason, the statistics may under-estimate the number of workers involved in a dispute. However, the estimate of the number of working days lost is unaffected by this consideration.

FEATURE

Keith Brook

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Performance and employment characteristics of the UK service industries, 1990–2008

SUMMARY

This paper describes the availability and quality of statistics to measure the performance and labour market characteristics of the UK service sector. In the present economic downturn, the need for detailed measures such as profitability, prices and productivity is of increasing importance. This paper complements an earlier ELMR paper published in January 2008, which discussed basic measures such as output and jobs. Both papers consider progress made in the development of improved service sector statistics, following a 1995 review of their scope and reliability.

Statistics on the size of service sector industries and their international trade have been reviewed in a previous Economics and Labour Market Review (ELMR) paper (see Brook 2008). This included a discussion of developments in recent years to improve key outputs in response to a 1995 review of service sector statistics. While size and growth give some indications of the performance of the service sector, other measures such as profitability, prices, productivity and investment are also important. This paper describes these measures, together with some labour market characteristics.

Box 1 lists the relevant major outputs that the Office for National Statistics (ONS) produces and publishes. With the exception of the Annual Survey of Hours and Earnings (ASHE), none of the outputs include detailed quality measures, although some have limited quality measures or a quality report. Where possible, outputs are subdivided according to the Standard Industrial Classification (SIC) 2003, although due to quality limitations few publications give more detail than at section level. The service sector is defined by SIC sections G–Q.

The SIC classification has recently been the subject of an international and UK review. The revised classification is in the process of being implemented with a planned completion date of 2011 (see Box 3 in Brook 2008), and this will give some improvements to the scope and coverage of detailed service industries.

Profitability

In both the short or longer term, the survivability of an individual business and ultimately an industry depends to a large extent on its profitability. In recent years manufacturing industries in the developed world have seen increasing pressure on their profitability and, in some cases survivability, due to competition from countries where costs are lower. In many cases the response has been to outsource production activities abroad which, together with a significant reduction in transport and communication costs, have resulted in a change in the business model of many companies. Some service industries, such as the IT sector and call centre activities, are no longer immune from these changes and are also faced with the possibility of outsourcing and competition from abroad.

The profitability of UK private non-financial corporations has been published by ONS since the 1960s with quarterly data being available for companies in service industries from 1989. **Figure 1** shows that, in terms of the percentage net rate of return, service industries have been consistently more profitable than manufacturing since 1989 and that the gap has widened since 1997. However, as might be expected, 2008 has shown a drop in profitability in the service industries as well as for manufacturing. No further industry breakdown is published within the service industries, and more detailed information is desirable, particularly as sectors perform

Box 1**Summary of major sources and frequency of outputs measuring Service sector performance characteristics**

Annual Survey of Hours and Earnings (ASHE) – annual:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=15050

Business Enterprise Research and Development, Business Monitor MA14 (BERD) – annual:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=8206

Business Investment – quarterly
www.statistics.gov.uk/StatBase/Product.asp?vlnk=171&Pos=&ColRank=1&Rank=422

Consumer Price Indices (CPI) – monthly:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=868

Foreign Direct Investment (FDI) – annual:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=9614

Gross Domestic Expenditure on Research and Development (GERD) – annual:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=418&Pos=1&ColRank=1&Rank=256

Labour market statistics – monthly/quarterly:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=1944

Producer Price indices, Business Monitor MM22 (PPI) – monthly:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=2208

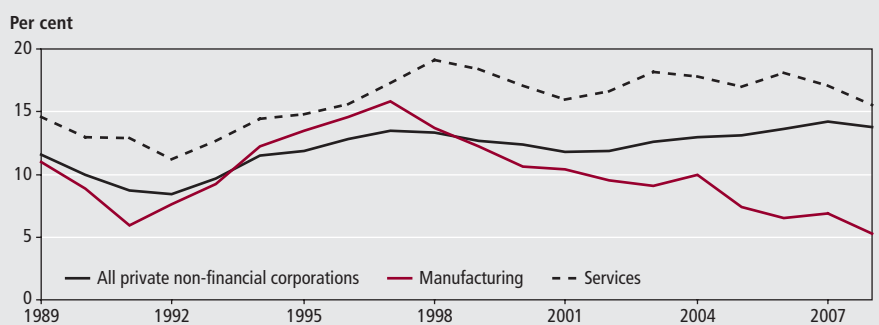
Profitability of UK companies – quarterly:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=794

Productivity – quarterly:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=7476

Services Producer Price Index, experimental (SPPI) – annual:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=7351&Pos=3&ColRank=2&Rank=272

Survival rates of business enterprises – annual:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=15186

Vacancy survey of business enterprises – monthly:
www.statistics.gov.uk/StatBase/Product.asp?vlnk=9390

Figure 1**Net rate of return of UK companies by industry**

Source: ONS Profitability of UK companies

differently in the current economic downturn.

Prices

The profitability of companies is partly affected by prices. Service price indices and growths are published as a component of the Consumer Prices Index (CPI) and, for business services, in the Services Producer Prices Index (SPPI). **Figure 2** shows the annual change in prices from 1989 for services and goods. The CPI is published monthly with services data being available from 1989, including a breakdown in terms of housing, travel and transportation, recreational and personal, communication and miscellaneous services.

Business output prices have been published on a monthly basis for manufactured goods since 1974 as part

of the Producer Prices Index (PPI) and on a quarterly basis from 1996 for services (SPPI). The SPPI is currently an experimental series with coverage limited to key industries or products (see Table 5 in Brook 2008). Developments are ongoing to include other key industries in accordance with Eurostat requirements. When completed, this will provide coverage for about 60 per cent of corporate market services.

Figure 2 shows that between 1989 and 2007, price increases for services have generally been consistently higher than those for goods, with consumer goods showing price reductions for most years between 1990 and 2002. The purchase of consumer goods includes both those produced in the UK and also imports from abroad, and the reduction in prices

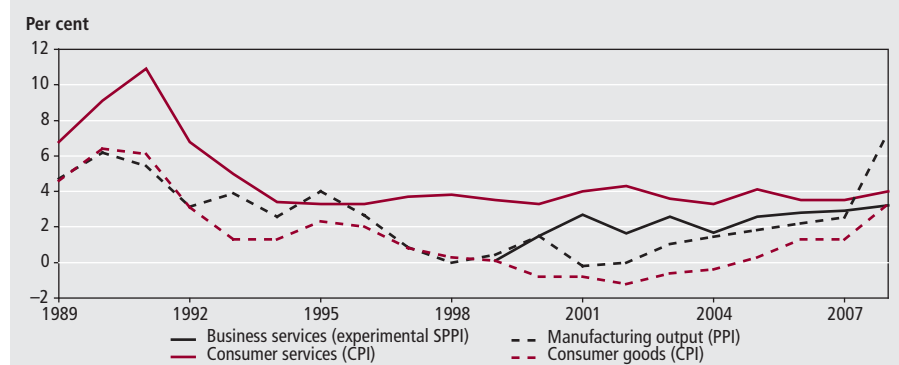
for consumer goods is likely to have been mainly driven by cheaper imports. The drop in prices for consumer goods is consistent with the drop in profitability of manufacturing enterprises since 1997 (see Figure 1), suggesting that pricing pressures may have impacted on UK manufacturers' margins.

There was a large increase in the commodity price of oil, food and other energy items in the first half of 2008 which resulted in a significant increase in the price of manufactured goods for both producer and consumer prices. In 2008, services prices experienced little change with a relatively small increase. Driven by a fall in oil prices, manufacturers' input and output prices dropped in the second half of 2008, and it is expected that price changes might remain more muted in 2009.

Productivity

Sustained growth in productivity helps to maintain the profitability of businesses and indicate the well-being of an economy. International comparisons provide some insight into comparative advantage in relation to other countries. In 2006, the department of Trade and Industry (DTI), now part of the Department for Business, Enterprise and Regulatory Reform (BERR), published a report (see DTI 2006) which includes data for a range of productivity and competitiveness indicators. In many cases international comparisons with the USA,

Figure 2
Annual change in prices for UK goods and services



Source: ONS Consumer price indices, Producer prices and Services producer price index

France and Germany are given and the report covers a number of the performance measures discussed in this paper. BERR has recently published a further report examining the key issues and policies needed to raise UK productivity (BERR 2008a).

These reports do not include any sector breakdown by industry. In 2007 ONS published a productivity handbook giving a comprehensive overview of current practice and issues to be considered when measuring and developing UK productivity outputs. Chapter 8 of the handbook (see ONS 2007) includes a discussion of how service sector productivity can be measured. ONS publish annual and quarterly productivity indices for the whole economy (SIC sections A–Q), production (C–E), manufacturing (D) and its sub-sections, with some data being available from 1960.

For the service industries, quarterly indices are published in terms of output per job from 1978 for all services (G–Q), but indices are currently only published at section level for distribution, hotels and catering (G–H) from 1997. Output per hour data are also published from 1992. The service sector outputs have only recently been given National Statistics status and were published previously as experimental series. It is desirable that the productivity outputs are extended to all sections of the service sector, even if at first they only have experimental status.

Figure 3 shows the annual change in output per job for the available service outputs together with the whole economy and manufacturing. The annual change for services (G–Q) and the whole economy (A–Q) are in close agreement, which is to be expected since the economy is dominated by the service industries, which account

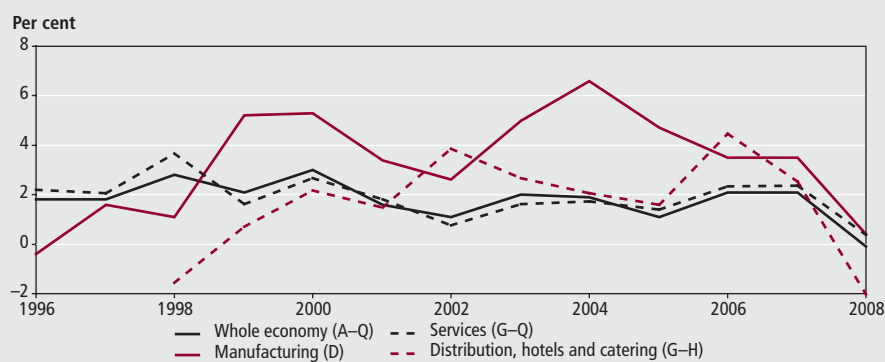
for about 75 per cent of output and 80 per cent of jobs. Productivity growth for manufacturing (D) has generally been higher than for the whole economy and services. This is probably due to the movement of production jobs abroad or the outsourcing of service related activities. As expected, growth has dropped for all outputs over the last year as the economy has slowed in terms of output and employment.

As described in chapter 8 of the ONS

handbook (ONS 2007), productivity levels in terms of output per job can be estimated to give a more detailed industry breakdown using published Gross Value Added (GVA) and Workforce Jobs (WFJ) data. It is recognised that the productivity level of individual industries may not be directly comparable, particularly with the increasing polarisation of services into knowledge-based and labour intensive industries. However, comparisons of productivity levels can provide useful insights when taking into account the known structure of individual industries. Any estimation of growths from such data needs to be treated with caution and may need to be limited to longer term trends over 5 or 10 years, rather than annual changes.

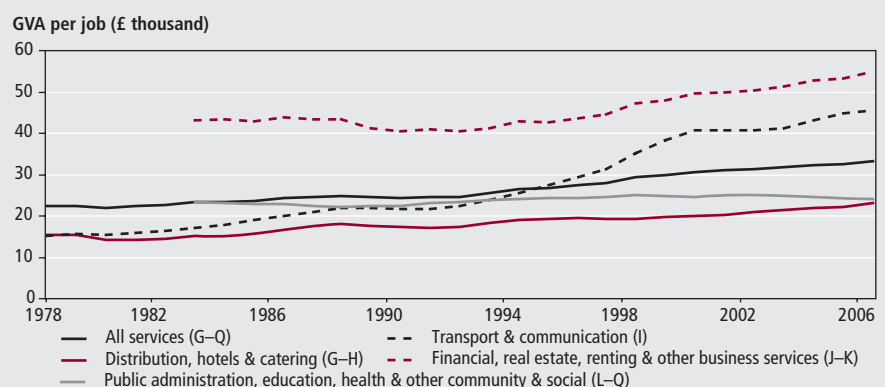
Figure 4 shows the output per job of the service industries and for four section groupings, derived from published GVA and workforce jobs data. Finance, real estate, renting and other business activities (J–K) has the highest level of productivity while transport and communication (I) has seen the highest increase in productivity. It is expected that there will be large

Figure 3
Change in Output per job



Source: Source ONS Productivity

Figure 4
Output per job in the services sector



Source: ONS Quarterly National Accounts and Workforce Jobs

differences in the productivity levels within these sections, for example within business services which include a wide range of industries with differences in labour intensity and skill levels. The estimation of productivity at a more detailed industry level will be discussed further in a future ELMR paper on financial and business services.

Investment, R&D and innovation

The level of investment by a company can give some indication of its performance, although capital intensity differs according to industry. A detailed breakdown of UK investment in the service industries, in terms of Gross Capital Formation (GCF), is published annually in the UK National Accounts Blue Book, with consistent data being available from 1997. GCF is defined as acquisitions less disposals of fixed assets, improvements in land, valuables and change in inventories. GCF is limited to domestic investment in the UK and does not include investments abroad. The latter is defined as Foreign Direct Investment (FDI), which is described in the next section. FDI is different to GCF, both in terms of its definition and financial uses within the business.

Table 1 shows that in 2006, the level of GCF in all service industries was nearly five times that of the production industries, being £126bn and £26bn respectively. In the ONS source, a substantial proportion of the total GCF has not been allocated to an industry. This was 32 per cent in 2006, £75bn out of a UK total of £233bn. The unallocated GCF includes investment in dwellings, transfer costs of land and existing buildings, and valuables. Hence it is not entirely appropriate to express GCF as a proportion of GVA within individual industries since the two measures are not consistent due to the unallocated GCF.

Within services, the highest investment in 2006 was in Financial and business services (J-K) with £31bn, only slightly higher than Distribution, hotels and catering (G-H) and Transport and communication (I) with £26bn and £25bn respectively. The GCF in these three industries was in closer agreement in 1997, varying between £17bn and £19bn and it is possible that these levels may reduce in the current economic downturn.

The level of spending on Research and Development (R&D) also provides some indication of industry performance and data is available for the UK from 1985.

Total UK spend on R&D is dominated by private business enterprises, with additional spending coming from higher education, government, research councils and private non-profit organisations, as shown in

Figure 5. In 2007 R&D expenditure by business enterprises was £16.1 billion, accounting for over 60 per cent of all spending which was £25.5 billion. This represents 1.8 per cent of UK Gross

Table 1

Gross Capital Formation in the services industries

£ billion					
Industry	SIC	1997	2000	2003	2006
All industries	A–Q	142.9	172.4	190.6	232.5
Production	C–E	31.7	30.0	23.6	26.4
All services	G–Q	76.0	102.4	108.9	125.6
Distribution, hotels & catering	G–H	18.3	20.4	19.4	26.4
Transport, storage & communication	I	17.3	26.6	23.6	24.9
Finance & business services	J–K	19.4	31.8	34.2	30.7
Public administration & defence	L	7.0	6.1	11.1	12.0
Education, health & social work	M–N	5.6	6.9	9.4	13.3
Other social & personal services	O–Q	8.5	10.7	11.0	18.2
Not allocated to industries ¹		29.9	36.6	51.0	75.2

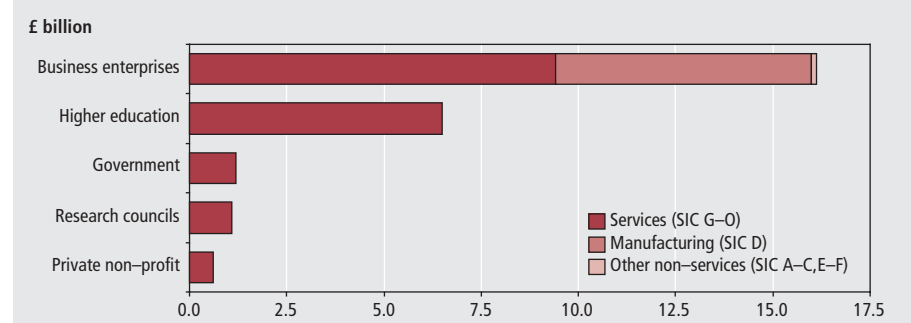
Note:

Source: ONS Blue Book

¹ Includes investment in dwellings, transfer costs of land and existing buildings, and valuables.

Figure 5

Gross domestic expenditure on R&D in the UK, 2007



Source: ONS Business Enterprise Research and Development (BERD) and Gross Expenditure on Research and Development (GERD)

Table 2

Expenditure on R&D performed in UK businesses, 2007¹

		£ million				
Industry	R&D product	1995	2000	2005	2006	2007
All	Total	9,120	11,510	13,730	14,560	16,110
	Services	1,670	1,900	2,950	3,430	3,780
	Manufacturing	7,130	9,230	10,560	10,930	12,110
	Other non-services	320	370	230	210	230
Services	Total	3,190	5,360	7,130	8,140	9,420
	Services	1,290	1,650	2,860	3,320	3,630
	Manufacturing	1,860	3,570	4,130	4,700	5,680
	Other non-services	40	140	150	120	110
Manufacturing	Total	5,720	5,990	6,520	6,340	6,580
	Services	380	250	90	100	150
	Manufacturing	5,270	5,660	6,430	6,230	6,430
	Other non-services	70	80	-	10	10
Other non-service	Total	210	160	80	90	120
	Services	-	-	10	10	-
	Manufacturing	-	-	-	-	10
	Other non-services	210	160	70	80	110

Notes:

Source: ONS BERD

¹ Data are rounded to the nearest £10 million. '-' denotes a value of less than £10 million.

Table 3
Patterns in innovation in services

	Supplier dominated	Innovation in services	Client-led innovation	Innovation through services	Paradigmatic innovation
Retailing	Scanning registers/stock replenishment systems	New shop formulae/new franchise schemes	Green or "organic" product/home delivery	Retail consultants introducing new formulae or marketing strategies	E-commerce
Transport and logistic services	On board computers	New logistic concepts mostly streamlining value chains and adding information to it	Outsourcing of transport and "light" production/assembly	Shippers offering clients tracking and tracing facilities and so contribute to reductions in stocks	Containerisation, e-commerce
Financial services	New distribution channels based on technical platforms (SMS alerts, new mobile devices), back office automation	New (customised) financial services concepts, multi channel management	Green banking, products covering various stages in life e.g. starter mortgage or estate planning	Financial constructions e.g. sale and lease back	Multi-functional smart cards (including non-financial functions)

Source: See Table 1.1 in DTI(2007)

Domestic Product (GDP), which is slightly below a government target of 2 per cent.

Figure 5 shows that in 2007, over half of the source of business spending was from service industries, with the majority of the remainder being from manufacturing industries. However, as shown in Table 2 a significant proportion of the business R&D expenditure by service industries, which includes the R&D industry as part of business services (SIC 73), was on R&D for manufacturing products.

Scientific R&D is one of a number of different kinds of intangible investments. Some investments such as computer software, databases, mineral exploration and copyright and license costs are already treated as intangible investments in the UK National Accounts. Other potential intangibles, not currently included, are the development of new architectural and engineering designs, branding and organisational structures. However, there is currently no international consensus on how to measure such intangibles. In 2007, the UK Treasury published a report of an investigation into such measures and their potential impact on UK productivity (see HMT 2007).

The former DTI also investigated wider measures of innovation within the service industries (see DTI 2007). Five main types of innovation were identified:

- reliance on external innovation – 'supplier dominated'
- intensity of in-house innovation – 'innovation in services'

- degree of interaction with consumer – 'client-led'
- extent to which service firms support other firm's innovation – 'innovation through services'
- substantive innovations marking a step change – 'paradigmatic innovation'

Table 3, reproduced from the DTI report, shows examples of these types of innovation in retailing, transport and logistic services, and financial services. The paper includes a discussion on the challenges of defining innovation and the extent to which it can be measured within the sector. A joint report has recently been published by BERR and the Department of Innovation, Universities and Skills (DIUS) giving a framework for government to assist businesses by encouraging and facilitating innovation in services (see BERR 2008b).

Foreign Direct Investment

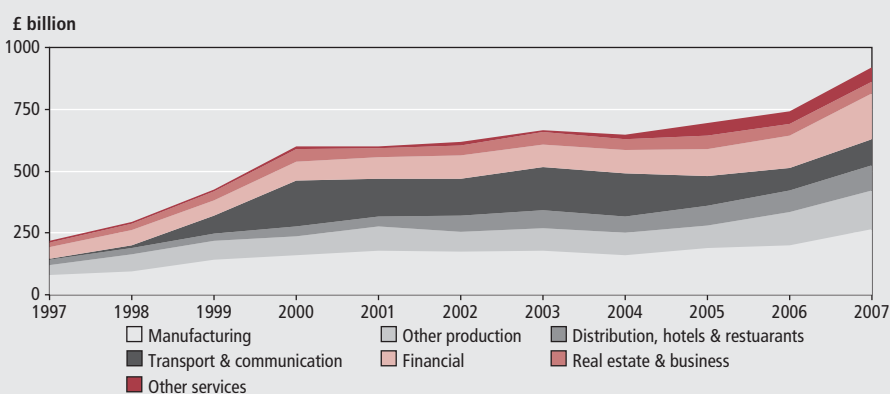
FDI gives a measure of flows of investment into the UK by international firms (inward FDI) and out of the UK by UK-owned businesses making acquisitions abroad (outward FDI). Only investments that produce a lasting interest in an enterprise are included where the investor's purpose is to have an effective voice in the management of the enterprise. By international agreement this is taken as equivalent to holding 10 per cent or more of the share capital in the direct investment enterprise.

Investment figures are published on a net basis, that is, they consist of investments less dis-investments by a company. Acquisitions or disposals in a given year or sector can be volatile and a single large merger in one year can give the impression that there has been a substantial decline in subsequent years. The net cumulative stock provides a more stable picture. The industry classification is defined by the activity of the firm that is being invested in, so inward FDI is classified by the UK industry, and outward FDI by the industry of the foreign affiliate. However, a recent analysis by ONS on behalf of BERR indicated that the majority of acquisitions occur within the same industry sector in both countries.

Figure 6 shows that UK FDI increased steadily between 1997 and 2000 for outward FDI, and in Figure 7 since 2001 for inward FDI. Activity then dropped off following the burst of the dot-com bubble in late 1999 / early 2000. Following little growth in stock until 2004, both outward and inward FDI have grown in the three years to 2007.

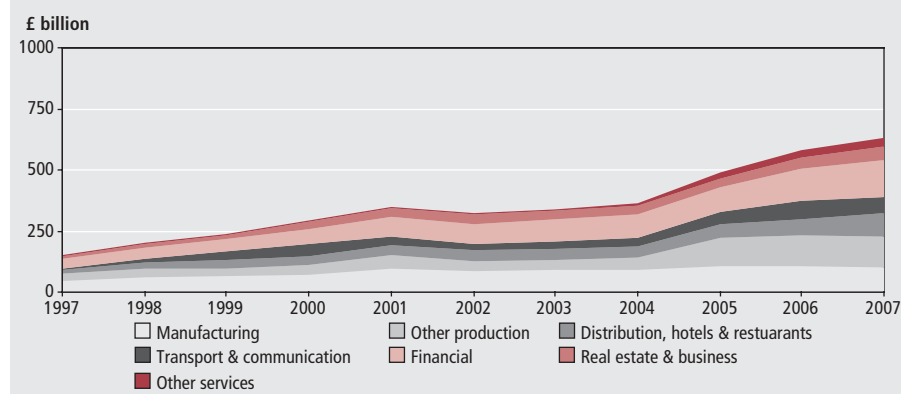
Both service and non-service industries have seen growth in FDI over the last ten years. Outward FDI in the service

Figure 6
Outward FDI by industry



Source: ONS Foreign Direct Investment

Figure 7
Inward FDI by industry



Source: ONS Foreign Direct Investment

industries totaled nearly £100 billion in 1997, 45 per cent of all outward FDI, and this has increased to nearly £500 billion in 2007, now 54 per cent of the UK total. Within services the highest acquisitions were in the transport and communications sector between 1997 and 2004, but this has decreased in recent years. Since 2004 the highest acquisitions have been in financial services with other services also showing some growth.

Inward FDI in the service industries was nearly £80 billion in 1997, 51 per cent of all inward FDI, and this has increased to over £400 billion in 2007, 64 per cent of the UK total for all industries. Within services, the largest share has been in the financial services sector until 2005 but has been in transport and communication in 2006 and 2007.

Preliminary estimates for 2008, which do not include a sectoral breakdown, indicate that these investment levels have been maintained with outward and inward FDI increasing to £1,036bn and £674bn respectively at the end of 2008, compared with £919bn and £630bn at the end of 2007.

Foreign Affiliates Statistics

Published FDI data includes a measure of annual remittances derived from the net stocks but this is not a comprehensive measure of activity. Wider measures of activity such as turnover, employment and external trade are not available for FDI activity. However, Foreign Affiliates Trade statistics (FATS) are being developed by the UK in accordance with a Eurostat regulation (see Eurostat 2007) which requires member states to report inward and outward FATS data, starting from a reference year of 2007.

A foreign affiliate is defined as a business

enterprise resident in the compiling country over which an institutional unit not resident in the compiling country has control, or an enterprise not resident in the compiling country over which an institutional unit resident in the compiling country has control. Control implies the ability to determine the strategy of an enterprise, to guide its activities and to appoint a majority of directors. This ability can be exercised by a single investor who, directly or indirectly, holds a majority of the voting power or shares (more than 50 per cent), whereas FDI only requires a 10 per cent stake.

For the UK, inward FATS are being derived from data collected in the Annual

Business Inquiry (ABI). The ABI is sampled from the Inter-Departmental Business Register (IDBR), which includes the foreign ownership attribute of each business.

Work is in hand to improve the quality and reliability of this key attribute and it is planned that inward FATS data will be produced for the UK towards the end of 2009, with data being available from the 2007 reporting year. This will include a number of attributes such as turnover and employment, including a split by industry.

These same attributes also need to be derived for outward FATS but measurement is more difficult since data needs to be collected for activity outside of the UK.

A new survey is being developed by ONS and work is currently in hand to develop a questionnaire and address population and sampling issues. Pilot surveys are planned for 2009 and 2010 with the first full survey being planned for 2011 for reporting year 2010.

Employment characteristics

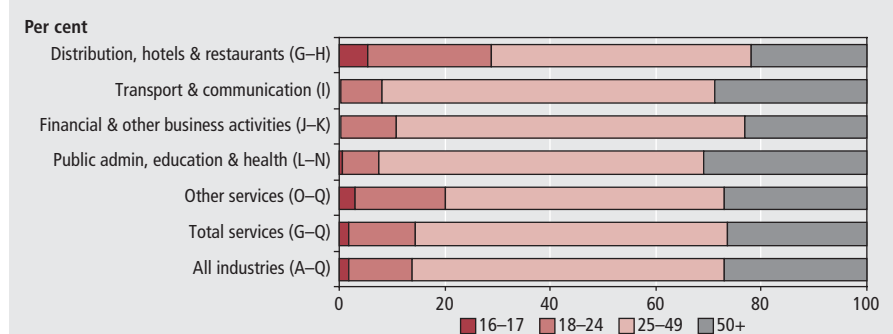
Variations in employment characteristics can arise within different industries for a number of reasons. On the supply side, the UK labour market has evolved and become more flexible in recent decades. On the demand side, different industries have increasingly specialised requirements from

Table 4
Composition of service sector employment, 2008 Q2

	Percentages				
	Female	Part-time	Temporary	Self-employed	Professional occupation
Distribution, hotels & restaurants (G-H)	50	40	4	10	34
Transport & communication (I)	24	13	3	13	36
Financial & other business activities (J-K)	43	19	4	16	81
Public admin, education & health (L-N)	69	33	8	5	68
Other services (O-Q)	53	35	10	26	54
Total Services (G-Q)	54	30	6	11	59
All industries (A-Q)	46	25	5	13	54

Source: ONS Labour Force Survey

Figure 8
Age distribution of service sector employment, 2008 Q2



Source: ONS Labour Force Survey

Figure 9
Highest qualification distribution of service sector employment, 2008 Q2

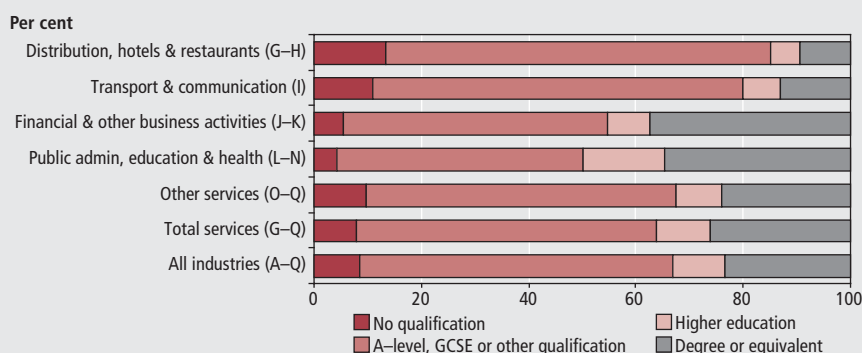


Figure 10
Service sector employment of non-white ethnicities

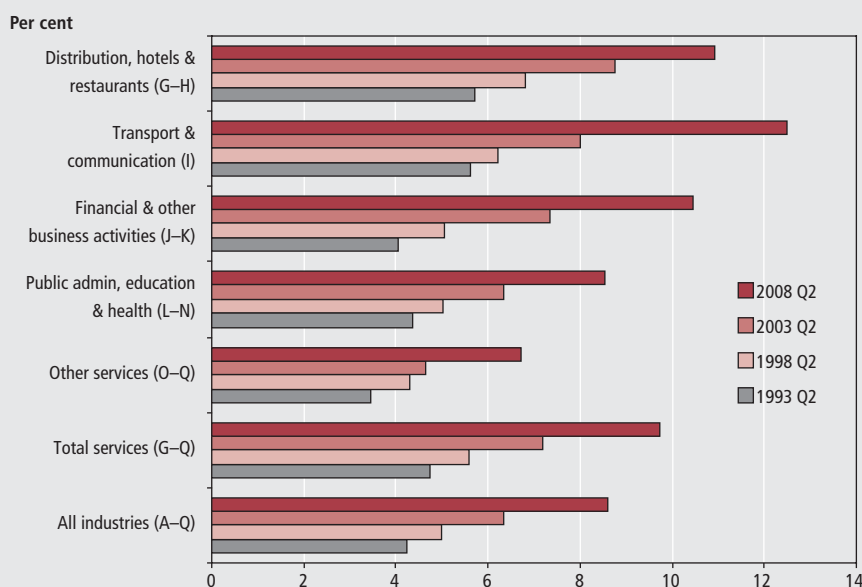
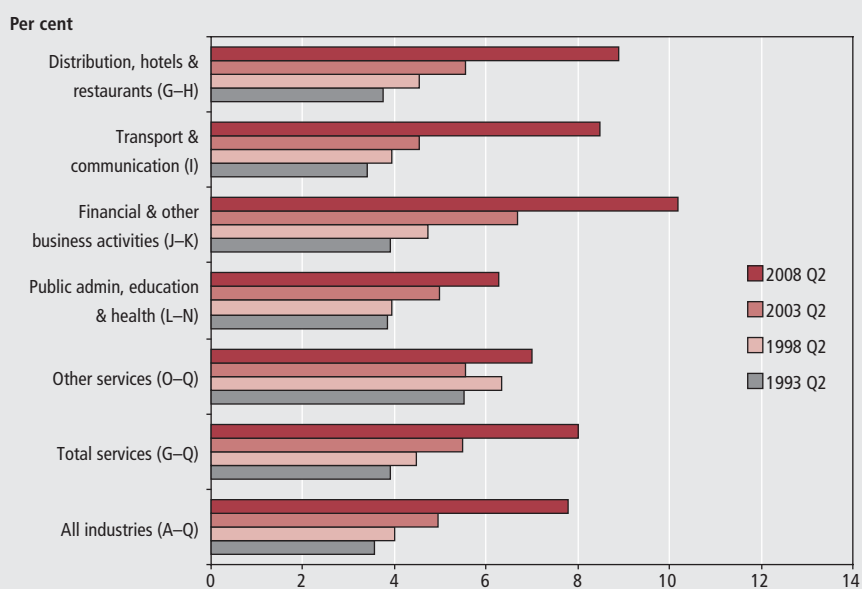


Figure 11
Service sector employment of non-UK nationals



the labour force, for example in terms of skills.

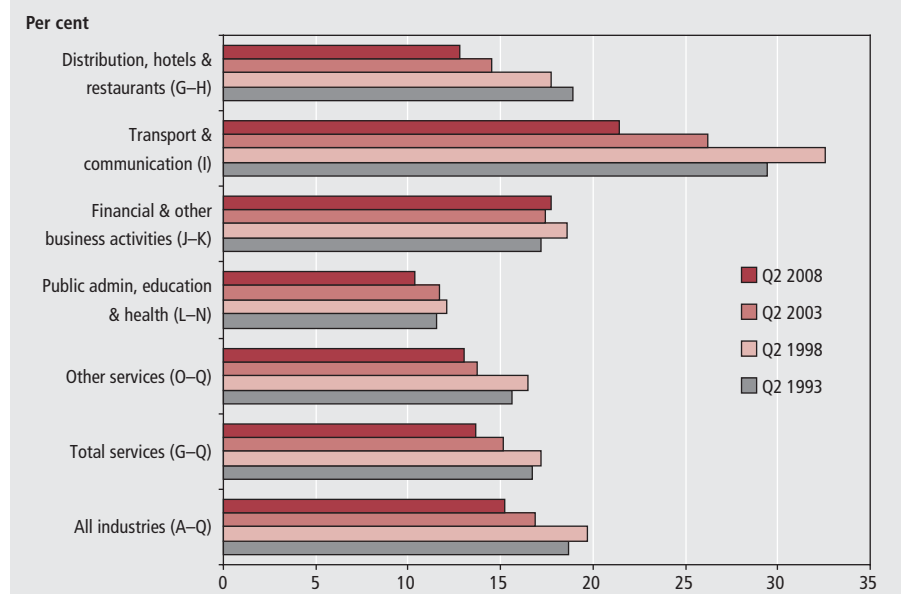
It is possible to determine employment characteristics on an industry basis using data from the quarterly Labour Force Survey (LFS), which is a household rather than a business survey. Although the survey questionnaire has changed and evolved over time, there is reasonable continuity from 1992 for many of the key variables.

Table 4 shows the percentage employed in the service industries in 2008 quarter 2 for five key characteristics. Total services has a higher proportion of female, part-time, temporary and professional occupation workers than the all industries category. However, self-employment is slightly below the rate for all industries. Within the service industries, these characteristics vary considerably. The transport and communication industry has the lowest rates for female and part-time working. Public administration has the highest female rate, and distribution, hotels and restaurants the highest part-time rate. Temporary working and self-employment are highest in other services; and professional occupations are highest in financial and other business activities.

Figure 8 shows the age and **Figure 9** the highest qualification distributions of employment within the service industries. There is little difference between the age distribution for all industries and total services, but differences exist within services, notably the 16-17 age group is primarily limited to distribution, hotels and restaurants which includes fast-food outlets, and other services which includes leisure activities. Public administration has the highest proportion employed aged 50 or over. This industry, together with transport and communication also has the lowest proportion employed aged 18-24, possibly due to a greater degree of job security and higher retention rates. In terms of highest qualification, Financial and other business activities and public administration have the highest proportion employed with a degree or equivalent, while distribution, hotels and restaurants and transport and communication have the lowest.

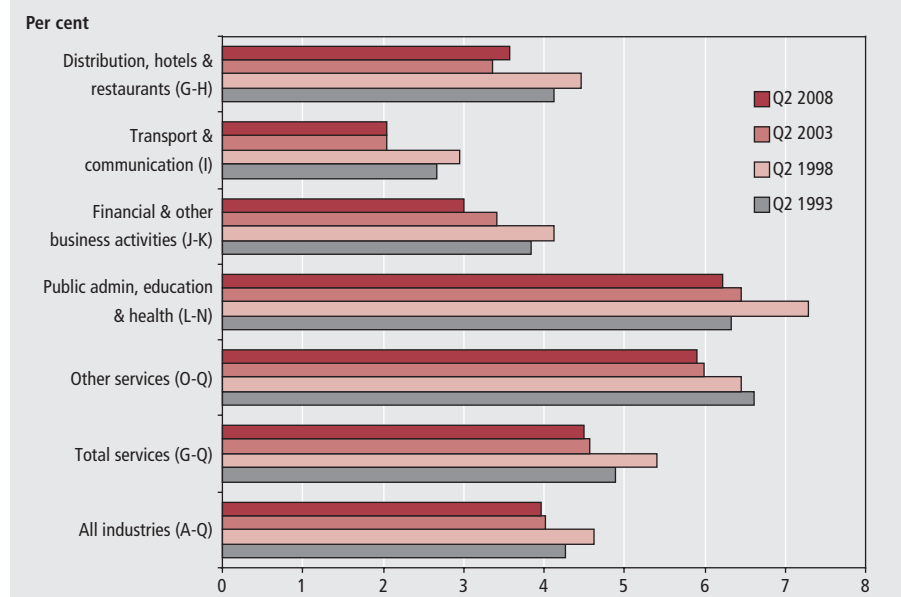
Figure 10 shows that there has been a relatively large increase in the percentage employed who are from non-white ethnic groups over the 15 year period between 1993 and 2008. These increases are consistent throughout all of the service industries with the highest rates, in excess of 10 per cent in 2008, occurring in three

Figure 12
Proportion of service sector workers with usual hours over 48 hours per week



Source: ONS Labour Force Survey

Figure 13
Proportion of service sector workers with a second job



Source: ONS Labour Force Survey

industry groups - distribution, transport and communication and financial and other business activities. This growth is due to immigration and second generation children becoming working age. The increases observed in the financial and other business activities and in public administration may indicate that skill levels are increasing among the non-white ethnic groups.

Figure 11 also shows the increase in non-UK nationals employed in the service industries. The rate is highest in financial and other business activities at more than

10 per cent in 2008. The lowest rate is in public administration, education and health at just over 6 per cent in 2008. Many non-UK nationals come from a range of ethnic backgrounds and countries, including the Americas, Australia and both western and eastern European countries. This can be investigated further from the LFS using detailed nationality and country of birth data.

In October 1998, the European Union introduced a Working Time Directive to limit the number of hours an individual can work to an average of 48 hours per

week (see www.berr.gov.uk/whatwedo/employment/employment-legislation/working-time-regs/index.html and www.berr.gov.uk/whatwedo/employment/employment-legislation/working-time-regs/index.html). In the UK an individual can opt-out through a voluntary agreement. Figure 12 shows that between 1993 and 1998, there was an increase in the percentage of employees who worked more than 48 hours per week in their main and any second job, being just over 17 per cent in total services in 1998. Hours worked include any regular paid and unpaid overtime. Between 1998 and 2008, the rate dropped to 14 per cent. These rates are slightly below those for all industries which exhibits a similar trend. Within the service industries, transport and communication had the highest rate in 2008 at 21 per cent, down from a peak of 33 per cent in 1998. Public administration had the lowest rate in 2008 at 10 per cent.

Working long hours may be partly due to an individual holding two or more jobs. Figure 13 shows that the percentage of employees who hold a second job has followed a similar pattern to that of working long hours, with increases between 1993 and 1998 and reductions between 1998 and 2008. The industry is defined in terms of the employee's first job and the industry of the second job is not shown, although this is recorded in the LFS. The service industries with the highest and lowest rates are almost opposite to that for working long hours, with public administration and other services both recording the highest rate at about 6 per cent in 2008 and transport and communication having the lowest rate at 2 per cent.

Earnings and hours worked

Earnings and hours worked data are measured by the Annual survey of Hours and Earnings (ASHE). ASHE is a business survey which uses a 1 per cent random sample of all employees registered for pay as you earn (PAYE) with Her Majesty's Revenue and Customs (HMRC). ASHE replaced the New Earnings Survey (NES) in 2004 and introduced a number of major improvements including imputation for non-response and weighting to UK totals based on the LFS. Supplementary sources were also introduced to improve the estimates for those on low incomes, who are under-represented in ASHE since they may not be registered for PAYE.

Median has replaced average earnings

Table 5
Gross hourly pay for all employee jobs, 2008¹

		£ and percentages					
Section	Industry	Full-time				Part-time	
		All employees	Per cent change 2007/08	Male	Female	Male	Female
G-Q	Services	12.0	4.0	12.9	11.1	7.1	7.5
G	Wholesale & retail trade	9.2	3.3	10.0	8.1	6.1	6.1
H	Hotels & restaurants	7.0	2.2	7.3	6.7	5.6	5.6
I	Transport & communication	11.2	3.7	11.3	11.1	8.9	9.0
J	Financial intermediation	16.5	6.6	21.3	12.5	10.9	10.0
K	Real estate, renting & business activities	13.1	3.6	14.4	11.5	7.3	7.8
L	Public administration & defence	13.5	5.5	14.9	11.6	13.0	9.7
M	Education	14.6	3.2	15.7	13.8	11.7	8.2
N	Health & social work	12.0	3.7	14.0	11.3	10.0	8.8
O	Other social & personal	10.6	3.5	11.1	9.7	7.2	7.0
P	Private households	9.1	15.3	10.9	9.0	9.2	7.7
Q	Extra-territorial	17.0	*	16.9	*	*	6.7
A-Q	All industries	12.0	4.3	12.6	10.9	7.3	7.5

Notes:

1 * sample size too small to provide estimates

Key CV ≤ 5%

CV > 5% and ≤ 10%

CV > 10%

Source: ONS Annual Survey of Hours and Earnings

Table 6
Median total hours of weekly paid work for all employee jobs, 2008¹

		Hours and percentages					
Section	Industry	Full-time				Part-time	
		All employees	Per cent change 2007/08	Male	Female	Male	Female
G-Q	Services	37.5	0.0	38.2	37.0	17.2	19.1
G	Wholesale & retail trade	39.2	-0.4	40.0	37.6	17.3	19.0
H	Hotels & restaurants	40.0	0.0	40.0	39.8	16.6	16.1
I	Transport & communication	40.0	0.0	40.0	37.7	21.5	21.3
J	Financial intermediation	35.0	0.0	35.0	35.0	20.1	21.0
K	Real estate, renting & business activities	37.5	0.0	37.5	37.5	17.5	18.2
L	Public administration & defence	37.5	1.0	39.9	37.0	18.5	21.0
M	Education	36.1	0.0	37.0	35.0	15.2	18.5
N	Health & social work	37.5	0.0	37.5	37.5	18.0	20.6
O	Other social & personal	38.8	2.2	39.9	37.5	15.0	17.0
P	Private households	40.0	-0.1	38.2	40.0	*	14.2
Q	Extra-territorial	37.5	-1.1	37.3	*	*	*
A-Q	All industries	37.5	0.0	39.0	37.1	17.5	19.3

Notes:

1 * sample size too small to provide estimates

Key CV ≤ 5%

CV > 5% and ≤ 10%

CV > 10%

Source: ONS Annual Survey of Hours and Earnings

as the preferred measure for ASHE. The median is considered to be a better measure to reduce any distortion on average earnings arising from respondents with very high or low incomes, particularly where sample sizes are small for some detailed industries. **Table 5** and **Table 6** show the median gross hourly earnings and paid hours worked for employees in the service industries in 2007. This includes usual hours worked together with any paid overtime. Earnings and hours worked are shown separately for

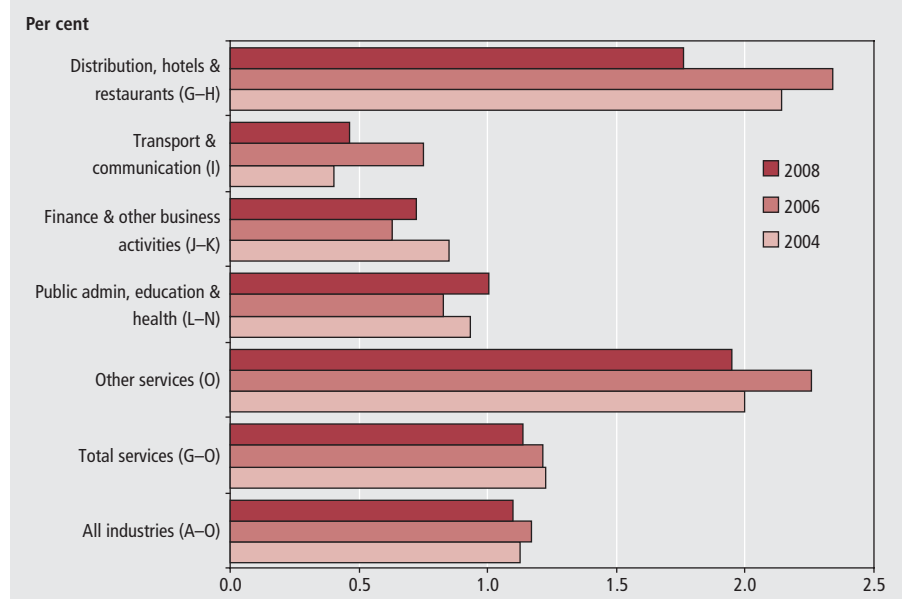
full-time and part-time employees with a male and female split. Unpaid overtime is not recorded in ASHE and data cannot be analysed for individual employees, hence the LFS is used to investigate working long hours (see Figure 12).

Table 5 shows that median hourly earnings for full-time employees in the service industries was £12.00 in 2008, a growth of 4 per cent compared with 2007. The highest median earnings were in financial intermediation with £16.50, which

also had the lowest median hours worked at 35 hours compared with 37.5 for all services. The lowest median earnings in the service industries was recorded for hotels and restaurants at £7.00, which together with transport and communication had the highest weekly hours worked at 40 hours.

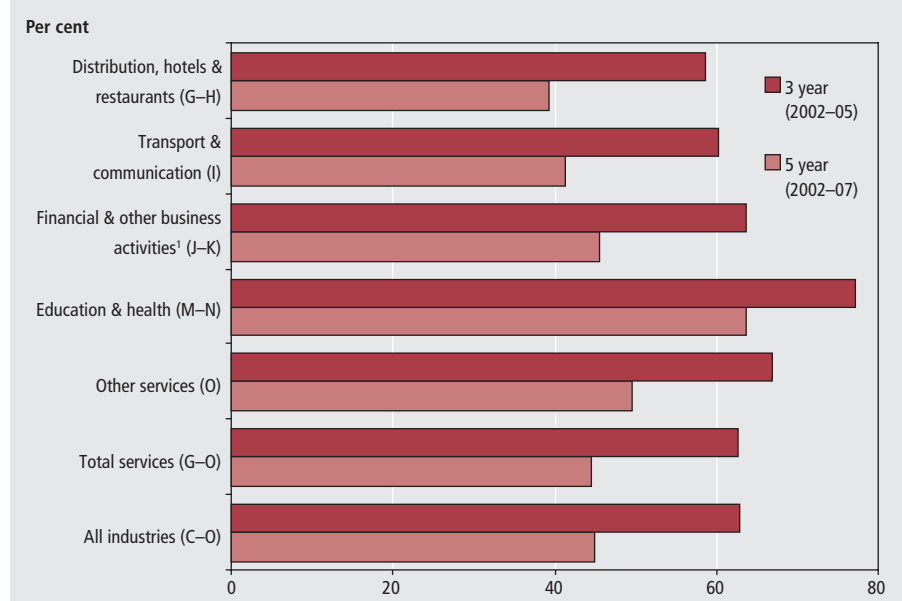
Another major improvement introduced in ASHE is the publication of quality measures in terms of the coefficient of variation (CV). These are given individually for all outputs in separate supplementary

Figure 14
Proportion of jobs paid below the National Minimum Wage



Source: ONS Annual Survey of Hours and Earnings

Figure 15
3 and 5 year survival rates of business enterprises registered in 2002



Note:

1 Excludes SIC 74.15 Managed service companies

Source: ONS Survival rates of business enterprises

tables and, in addition, outputs in the main tables are colour coded using a banded CV measure, as shown in Tables 5 and 6. This high standard for the provision and presentation of quality measures is a welcome improvement and where possible should be mirrored in some suitable format for all official statistics outputs.

The Low Pay Commission (LPC) makes extensive use of ASHE data and further analysis is undertaken on their behalf by the ONS. This supports an annual review of the level of the National Minimum wage (NMW), which was introduced in the UK

in 1999. **Figure 14** shows the percentage of jobs paid below the NMW within the service industries in 2004, 2006 and 2008. Data is not available before 2004 on a consistent basis.

In 2008, 1.1 per cent of jobs in total services were reported to be paid below the National Minimum Wage (NMW), slightly higher than the rate for all industries. These rates have changed little over the four year period. Within the service industries, other services had the highest rate in 2008 at nearly 2 per cent down from 2.3 per cent in 2006. Distribution, hotels and restaurants

recorded the second highest rate at 1.8 per cent in 2008, also down from 2.3 per cent in 2006. The remaining service industries reported rates below those for total services, with transport and communication having the lowest rate at nearly 0.5 per cent in 2008. It should be noted that the change in rates between years could be within the sampling variability of the estimates, and may not be significant.

Business survival rates, redundancies and vacancies

ONS publish business demography characteristics and from 2008 this has been extended to include registrations (births), de-registrations (deaths) and survival rates of private enterprises. Data are given at national, regional and local authority level together with an industry breakdown. A similar analysis was previously published by the former DTI until 2005 reference year. **Figure 15** shows the three and five year survival rates of business enterprises registered in 2002. For total services, the three year survival rate was 63 per cent, dropping to 44 per cent after five years in 2007. With the exception of education and health, the survival rates for the different services sectors are similar to the rates for total services. Although the survival rate may not appear high over a five year period, overall the stock in terms of the count of live business enterprises increases each year since the number of deaths is less than the number of births.

Redundancy and vacancy data are also available for the service industries, with levels and rates published quarterly. Seasonal variations are normally manifest in most industries for both series. Consistent redundancy data derived from the LFS is available from 1998 and rates for selected years since 1998, together with data for each quarter of 2008, are given in **Table 7**.

Redundancy rates within the different service industries are consistently lower for each year than for the Manufacturing and Construction industries. In 2008 quarter one, the total services rate was 3.7 redundancies per 1000 employees, compared with rates of 8.4 and 11.1 for manufacturing and construction. These rates have increased throughout the year to 7.3, 18.3 and 31.3 respectively in 2008 quarter four. Within the service industries in quarter 4 2008, Public administration, education and health had the lowest rate of 1.8 and Financial and other business activities had the highest rate of 12.8, closely

Table 7
Redundancy rates in the services sector¹

		Rate per 1,000 employees						
		Total services (G-Q)	Distribution, hotels & restaurants (G-H)	Transport & communication (I)	Financial & other business activities (J-K)	Public administration, education and health (L-N)	Manufacturing (D)	Construction (F)
1998	Q1	5.7	6.6	7.2	8.4	2.6	12.0	10.0
2000	Q1	5.5	8.9	6.7	8.1	*	14.5	15.5
2002	Q1	6.3	7.5	12.3	9.9	*	16.7	10.9
2004	Q1	4.2	5.8	7.3	7.3	*	11.9	10.8
2006	Q1	4.3	6.3	7.4	6.7	*	10.9	14.7
2007	Q1	4.7	7.3	5.8	7.3	1.4	11.9	10.9
2008	Q1	3.7	4.1	*	6.3	1.4	8.4	11.1
	Q2	4.0	5.6	7.0	5.1	1.4	7.1	9.1
	Q3	4.7	6.0	7.7	8.4	1.5	7.9	21.3
	Q4	7.3	9.6	11.6	12.8	1.8	18.3	31.3

Note:

1. The redundancy rate is based on the ratio of the redundancy level for the given quarter to the number of employees in the previous quarter multiplied by 1000.

* indicates that sample sizes are too small to provide estimates.

Source: ONS Labour Force Survey

Table 8
Vacancy rates in the services sector

		Rate per 100 employees							
		Total services (G-O)	Distribution, hotels & restaurants (G-H)	Transport & communication (I)	Financial & other business activities (J-K)	Public administration, education and health (L-N)	Other services (O)	Manufacturing (D)	Construction (F)
2002	Q1	2.5	2.9	2.6	2.3	2.2	2.7	1.7	1.8
2004	Q1	2.5	2.9	2.9	2.4	2.1	2.4	1.7	1.8
2006	Q1	2.4	2.5	2.5	2.9	2.0	2.4	1.5	1.5
2007	Q1	2.6	2.8	2.7	3.2	2.1	1.9	1.7	1.6
2008	Q1	2.8	3.1	3.0	3.2	2.3	2.6	1.7	1.8
	Q2	2.7	2.8	2.8	3.0	2.3	2.3	1.6	1.7
	Q3	2.5	2.5	2.4	2.7	2.4	2.0	1.4	1.4
	Q4	2.2	2.2	2.1	2.2	2.4	2.0	1.0	1.1

Source: ONS Vacancy Survey

followed by Transport and communication with 11.6.

A new vacancy survey was introduced by ONS in 2001 to replace estimates derived from Jobcentre vacancies, which were not fully representative. The monthly Vacancy survey of businesses is sampled from the IDBR and stratified by both industry and employment size. From a sample of 6,000 about 25 per cent are large businesses which are included as a panel, and the remaining sample is retained in the survey for either 5 or 8 months depending on the employment size. Vacancy rates are seasonally adjusted and published monthly in terms of three month averages and include a breakdown by industry. The vacancy rates are seasonally adjusted but not for redundancy rates. For comparability reasons, it is desirable that redundancy rates are also seasonally adjusted.

Table 8 shows the vacancy rate for selected years since 2002 and for each quarter in 2008. In 2008 quarter one, the

rate per 100 employees for total services was 2.8, higher than for the manufacturing (1.7) or construction industries (1.8). This pattern has been consistent for each year from 2002. Vacancy rates have dropped throughout 2008 and in 2008 quarter four were 2.2 in total services, 1.0 in manufacturing and 1.1 in construction. Within the service industries finance and other business services have recorded the highest rate in recent years, but this has now changed with public administration, education and health recording the highest rate at 2.4 in 2008 quarter four.

Conclusions

ONS has a rich set of data covering service sector performance and labour market characteristics, with consistent time-series being available for most outputs. These complement the employment, output and trade data discussed in an earlier ELMR paper (see Brook 2008). Most of the outputs discussed in this paper include publication

of high level dis-aggregates for the service industries.

A notable exception is the quarterly productivity release where currently the only dis-aggregation is for distribution, hotels and restaurants (G-H). ONS are currently investigating the feasibility of including productivity estimates for more service detail, particularly for the market sectors.

Apart from labour market data, most dis-aggregations are at a high level with sample size limitations in the relevant surveys being the main reason why more sector breakdowns are not available. In some cases it is desirable that the level of detail is improved to allow outside users and government departments to meet policy needs.

Although detailed industry dis-aggregations can be derived for many labour market characteristics, there can be uncertainty about the quality of the industry classification in the LFS, since

respondents can miss-report their industry classification. The ONS has investigated the feasibility of improving the LFS industry classification by accessing details from the IDBR to assist respondents in identifying their employer. This had limited success due to identification difficulties, limited resources and confidentiality requirements. Measures to improve LFS industry classification are still needed and should be considered further by the ONS.

ONS is currently developing FATS data in accordance with a new EU regulation. Completion of this work will be of major benefit to assist in investigating issues such as globalisation and outsourcing. Other developments to identify and measure intangible investments are also ongoing and may lead to improvements in the measurement of service sector characteristics.

The ASHE publication includes comprehensive quality measures for each output in terms of the coefficient of variation, the ratio of the standard deviation to the estimate. These are presented in a transparent way with outputs colour coded in tables and banded according to the level of quality (see Tables 5 and 6). Except for ASHE, guidance on quality is limited for the performance measures considered in this paper. The ASHE information is a good

standard that other ONS outputs should aim to adopt. Some outputs are derived from a number of sources and in such cases deriving an explicit standard error may be difficult, although using approximate variances based on a simplified sample design may be possible. Other alternatives include the use of sample sizes as a proxy for standard errors, for example for the LFS.

The performance and labour market characteristics discussed in this paper provide a much-needed source of data to allow policy and planning to be undertaken for the service sector and other industries. This is becoming increasingly important with the downturn in the UK and world economy

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FEATURE

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Developing a unit labour costs indicator for the UK

SUMMARY

This article showcases ongoing work within ONS to develop a new unit labour costs indicator for the UK by building upon the existing unit wage costs series. It begins by examining the concept of unit wage costs, describing what the series aims to measure and explaining some of the conceptual difficulties when estimating data in practice. The first issue concerns the series used to measure the labour costs of employees; wages and salaries are currently used instead of the more comprehensive compensation of employees (CoE) series. Secondly, the labour costs of the self-employed are not satisfactorily estimated by the current method. Two possible methods for the development of a unit labour costs measure are outlined; both incorporate CoE as their employee labour costs measure, but take different approaches to estimating the labour costs of the self-employed. The article concludes that the preferred model for estimating unit labour costs proxies self-employed labour costs by applying the ratio of CoE to the sum of CoE and gross operating surplus in the employed sector to mixed income, a measure of total earnings in the self-employed sector.

Introduction

The Office for National Statistics (ONS) publishes estimates of unit wage costs on a quarterly basis, as part of the Productivity Statistical Bulletin (until now called the Productivity First Release). The purpose of the unit wage costs series is to measure the labour costs incurred to produce one unit of output. In principle, it aims to capture how much firms pay in wages, social security contributions and other benefits in kind per unit of final output produced. Although not a direct measure of productivity, since productivity relates the volume of output to the volume of input used to produce that output, an inverse relationship between unit wage costs and productivity series tends to be observed – the higher the productivity of a worker, the lower the cost of labour per unit of output, and vice versa.

This article reviews the current methodology used to construct the unit wage cost series, outlining two limitations which should be addressed, relating to the measure of labour remuneration used and the returns to self-employed labour, and proposes two methodologies to incorporate better estimates of self-employed labour costs to produce a more consistent and comprehensive series. The article concludes by recommending a preferred methodology for the compilation of a new unit labour costs measure.

Measurement of unit wage costs

Unit wage costs are currently calculated as a ratio of total wages and salaries (W&S) per employee to Gross Value Added (GVA) per worker, as outlined in the Background

Notes of the Productivity Statistical Bulletin/First Release.

$$\text{Unit Wage Costs} = \frac{\text{Wages and Salaries}}{\text{LFS Employees}} \bigg/ \frac{\text{GVA at basic prices}}{\text{LFS Employment}} \quad (1)$$

The limitations in the construction of unit wage costs are:

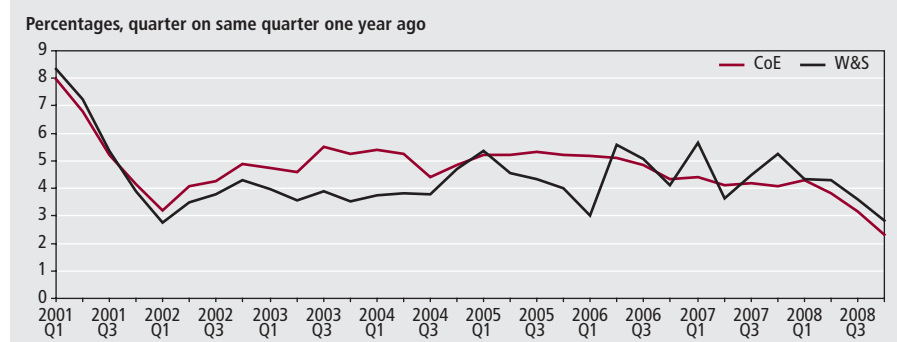
1. The use of W&S instead of compensation of employees (CoE) to measure employee labour costs
2. The treatment of labour costs for self-employed workers

The choice of measure for employee labour costs

The measure of labour costs currently used is W&S rather than CoE. According to the National Accounts Concepts, Sources and Methods Manual, compensation of employees is defined as the total remuneration payable by enterprises in cash or in kind. While this is predominantly made up of wages and salaries (approximately 85 per cent), it does include additional components not covered by W&S, such as employer pension contributions, social security payments and benefits in kind.

To give an idea of how the adoption of CoE as the numerator of a unit labour costs indicator might affect the existing series, Figure 1 presents whole economy growth rates of CoE and W&S since 2001. Over this period, the patterns of growth of the two series are clearly different; growth in CoE tended to be higher between 2002 and 2006

Figure 1
Growth in compensation of employees and wages and salaries



Source: National Accounts, Office for National Statistics

before dipping below that of W&S, and was less volatile throughout the time series. This suggests that the change in numerator could have a smoothing effect on published figures.

But the main argument for the inclusion of CoE is a conceptual one: pension contributions, social security and other benefits represent around 15 per cent of the cost of employing labour and their inclusion would provide a more complete picture of cost pressures per unit of output. Thus, it is recommended by this article that CoE be applied in the calculation of unit labour costs. This recommendation is in line with the guidance laid out in the OECD Productivity Manual (2001).

Estimating self-employed labour costs

The second conceptual limitation of the current unit wage costs series concerns the estimation of the labour costs of the self-employed. There is no direct measure of labour costs in the self-employed sector because the self-employed do not remunerate themselves specifically for their labour input, but for a service which also includes capital input embodied in their entrepreneurial effort. The combined returns to their labour and capital inputs are captured in the 'mixed income' series in the National Accounts.

The self-employed represent 13 per cent of total employment, as classified in the Labour Force Survey (LFS), with 86 per cent classed as employees and the remainder made up of HM forces, Government-supported trainees (GSTs) and unpaid family workers. With the self-employed making up such a significant proportion of the workforce, it is important that any unit wage cost indicator quantifies the labour costs of the self-employed as accurately as possible, based on the most appropriate method of estimation.

Under the current unit wage costs methodology, labour costs of the self-

employed are estimated by scaling up W&S by multiplying it by the ratio of all persons in employment to all employees (the majority of the difference between the two being the self-employed). Rearranging equation (1):

$$\text{Unit Wage Costs} = \frac{\text{Wages and Salaries}}{\text{LFS Employees}} \times \frac{\text{LFS Employment}}{\text{GVA at basic prices}}$$

$$\text{Unit Wage Costs} = \frac{\text{Wages and Salaries} \times \frac{\text{LFS Employment}}{\text{LFS Employees}}}{\text{GVA}} \quad (2)$$

The key assumption of this method is that the 'average wage', or average absolute labour cost, of the self-employed is the same as the average wage for employees. This is unlikely to be the case for several reasons:

- The distribution of hours worked differs from that for employees. According to table 7(1) of the Labour Market Statistics Statistical Bulletin/First Release, a far higher proportion of the self-employed usually work over 45 hours (31 per cent in the first quarter of 2009) compared with employees (18 per cent), which is offset by a smaller proportion working between 31 and 45 hours. This implies the average labour input (in volume terms) is greater for the self-employed
- The self-employed are generally more flexible in their working practices, tending to vary their hours and methods of work to a greater extent than employees, and taking fewer holidays
- Compared to employees, the self-employed are more strongly represented in certain industries, and less common in others. For example, a far greater proportion work in construction and agriculture, while a much smaller proportion work in public administration, health and

education. Given the significant variation in average hours worked and labour compensation that exists across industrial sectors, the differing industries in which employees and the self-employed work is likely to drive differences in their average labour costs

But most significantly, evidence from the National Accounts and the LFS shows the self-employed do earn less than the employed – a measure of average wages (W&S divided by total employees) persistently exceeds mixed income (which measures returns to both labour and capital) divided by total self-employment. This is demonstrated using annual data for 2000–08 in **Table 1**. So even in the extreme case of the returns to labour accounting for all of mixed income, average labour costs for the self-employed are still lower than those of employees. By extension, this means that the implied return to self-employed labour in equation (2):

$$\text{Wages and Salaries} \times \frac{\text{LFS self-employment}}{\text{LFS employees}}$$

must be greater than total mixed income, which is not plausible. This issue will be revisited later in the article in the discussion of the two proposed models for estimating unit labour costs.

One possible explanation for this finding may lie in the self-employed under-reporting their earnings to HM Revenue and Customs in order to lower their tax liability. ONS recognises this potential downward bias in self-employed income reporting and applies an upward adjustment to compensate, but it is possible that this adjustment is not sufficient and it is difficult to assess whether this is the case. Consequently, it is clear that the assumption of equal average labour income in the employed and self-employed sectors may not be realistic.

A further problem with the current unit wage cost construction is that the scaling ratio of employment to employees results in the double-counting of HM forces and GSTs. The difference between employment and employees includes HM forces and GSTs as well as the self-employed, but their earnings are already captured in W&S (and CoE). Hence, the equation is estimating the labour costs of some people whose wages are already being measured in the W&S series. This error may be small, given the relative size of HM forces and GSTs in total employment, but it nevertheless should be corrected.

Proposed models for the estimation of unit labour costs

The rest of this article compares two possible models to estimate unit labour

Table 1

Estimates of average labour compensation for employees and the self-employed

		£
	mixed income per self-employed person	wages and salaries per employee
2000	17485	19285
2001	18593	20303
2002	19469	20857
2003	19165	21600
2004	20126	22292
2005	20588	23047
2006	21110	23914
2007	21969	24942
2008	22392	25669

Source: Labour Force Survey and National Accounts, Office for National Statistics

costs. Both are based on CoE rather than W&S, in line with the main recommendation of this article described earlier. The two models differ in the way self-employed labour costs are estimated. This section therefore focuses on how each method proxies the labour costs of the self-employed.

Model 1: Adjust CoE to include the self-employed using the ratio of hours worked by all in employment to hours worked by all employees

This method is very similar to the existing unit wage costs methodology, but the 'scaling factor' is based on a ratio of hours rather than workers:

$$\text{Unit Labour Costs} = \frac{\text{CoE} \times \frac{\text{LFS hours worked by all in employment}}{\text{LFS hours worked by all employees}}}{\text{GVA}} \quad (3)$$

This model differs from the current unit wage costs construction in that it assumes equivalent average hourly, rather than absolute, returns to labour in the employed and self-employed sectors. It therefore overcomes the inconsistency in the published series arising from the differing working hours of the employed and self-employed. The method is also recommended by the OECD (2008), which describes the numerator of equation (3) as the 'target variable' for total labour costs.

However, it doesn't overcome the assumption that the average return to labour in the employed sector is the same as that in the self-employed sector. As a result, the implied return to self-employed labour:

$$\text{CoE} \times \frac{\text{LFS hours worked by all self-employed persons}}{\text{LFS hours worked by all employees}}$$

persistently exceeds mixed income (which is a measure of returns to both labour and capital) – an implausible result. This is shown for annual data between 2000 and 2008 in **Table 2**. Given that hours worked by the self-employed as a proportion of total hours worked is greater than self-employment as a proportion of total employment, the estimate of self-employed labour costs, and hence the discrepancy with mixed income, is in fact greater than under the current construction.

Model 2: Infer self-employed labour costs from mixed income using the ratio of CoE to the sum of CoE and GOS in the employed sector

Gross domestic product (GDP) can be measured from an income approach, where total income in the UK economy is the sum of compensation of employees, gross operating surplus and mixed income. CoE and GOS measure the returns to employed labour and capital, respectively, while mixed income captures the returns to both labour and capital for the self-employed. The basis of this model is to assume that the relative returns to labour and capital are the same for the self-employed as for the employed. This ratio can then be applied to the mixed income component to split out returns to capital and labour for the self-employed.

$$\text{CoE} + \text{Mixed Income} + \text{GOS} = \text{GDP (I)} \quad (4)$$

$$\frac{\text{CoE}}{\text{CoE} + \text{GOS}} \times \text{Mixed Income} = \text{Return to self-employed labour} \quad (5)$$

$$\text{Hence, } \frac{\text{GOS}}{\text{CoE} + \text{GOS}} \times \text{Mixed Income} = \text{Return to capital for the self-employed} \quad (6)$$

$$\text{Note that by definition, } \frac{\text{CoE}}{\text{CoE} + \text{GOS}} + \frac{\text{GOS}}{\text{CoE} + \text{GOS}} = 1 \quad (7)$$

Equivalently, (5) can be written as:

$$\frac{\text{Mixed Income}}{\text{CoE} + \text{GOS}} \times \text{CoE} \quad (8)$$

Hence, unit labour costs =

$$\frac{\text{CoE} + \left(\text{CoE} \times \frac{\text{MI}}{\text{CoE} + \text{GOS}} \right)}{\text{GVA}}$$

$$= \frac{\text{CoE} \left(1 + \frac{\text{MI}}{\text{CoE} + \text{GOS}} \right)}{\text{GVA}}$$

$$= \frac{\text{CoE} \left(\frac{\text{CoE} + \text{GOS} + \text{MI}}{\text{CoE} + \text{GOS}} \right)}{\text{GVA}}$$

$$= \frac{\text{CoE} \left(\frac{\text{GDP(I)}}{\text{CoE} + \text{GOS}} \right)}{\text{GVA}} \quad (9)$$

Therefore, the 'scaling factor' used to proxy self-employed labour costs under this method is the ratio of total income to the sum of CoE and GOS.

The crucial difference between this model and the other series lies in the assumption that the labour costs of the self-employed are equivalent to those of the employed in *relative* rather than *absolute* terms.

Assuming equal proportional returns to labour rather than an equal 'wage' (hourly or otherwise) is conceptually preferable: the CoE to GOS ratio would be the same in the employed and self-employed sectors if, hypothetically, the self-employed acted only as business owners who employed others to do the day-to-day work for them.

The model avoids the implausible result of the implied return to self-employed labour exceeding total mixed income – equation (7) shows that the weights for labour and capital in mixed income must add up to 1. The implied returns to self-employed labour as a percentage of mixed income under this model compared to the published series and Model 1 are presented for 2000 to 2008 in Table 2, and demonstrate that only under Model 2 are the returns to self-employed labour plausible. Therefore, only under this model will the identity for calculating total income (4) hold, which is important for ensuring the consistency of productivity measures with the National Accounts. The method of estimating the labour and capital shares of mixed income is also consistent with that used in the compilation of ONS estimates of multi-factor productivity (Turvey 2009).

As with Model 1, this model addresses the key issue of differing working patterns of the employed and self-employed, although it will not specifically overcome the problem of accounting for the industries in which they work (though relative

Table 2

Implied return to self-employed labour as a proportion of mixed income: models 1 and 2

		Percentages	
	Published series	Model 1	Model 2
2000	119	149	73
2001	117	147	74
2002	113	141	73
2003	119	149	72
2004	118	148	72
2005	118	149	72
2006	119	151	72
2007	120	147	71
2008	121	147	70

Source: Labour Force Survey and National Accounts, Office for National Statistics

returns to labour and capital are likely to be more similar across industries than wages). But Model 2 does tackle the issue of differing earnings of the employed and self-employed, as well as removing the problem of double-counting of HM forces and GSTs, as the measure being used to proxy self-employed labour costs (mixed income) refers only to the earnings of the self-employed.

A further advantage of this method is that all the data required to produce the series are National Statistics within the National Accounts, available on a quarterly basis in a timely fashion. In contrast, Model 1 requires hours worked data from the LFS, which would have to be extracted from LFS microdata. This would raise issues of coherence with the National Accounts data, something which also affects the current series.

Therefore, this article recommends using Model 2 to measure unit labour costs, as it represents the most credible approach to estimating the labour costs of the self-employed, and significantly improves consistency with National Accounts data.

Preliminary results

Figures 2 and 3 show how the two proposed new models for unit labour costs would differ from the published series, in terms of indices and growth rates. Figure 2 shows a significant change in the 'headline' index series as a result of the adoption of either Model 1 or Model 2, which have actually been moving very closely to each other, especially after 2004. This is borne out by the growth rates presented in Figure 3: growth in models 1 and 2 has been very similar (with the exception of a divergence in 2003 and 2004), yet distinctly different to the published series.

The similarity between figures based on models 1 and 2, but difference of both to the published series, implies that the shift from using W&S to CoE has a dominating impact on the results, compared to the

change in estimation method for self-employed labour costs.

In order to get a better indication of how each of the two proposed changes affects the growth rates of the published unit wage costs series, Figure 4 compares each of the changes with the published series separately for Model 2, the method recommended by this article. The 'CoE effect' shows the impact of replacing W&S with CoE as the measure of employee labour costs while maintaining the current method of estimating labour costs of the self-employed; the 'SE effect' demonstrates how using the preferred new method of estimating self-employed labour costs but maintaining W&S would affect growth in unit labour costs.

The chart shows a very close relationship between the 'CoE effect' line and the proposed unit labour costs series for most of the time period, indicating that the dominant force behind the differing growth rates under the proposed new methodology is the replacement of W&S with CoE. The change in the treatment of the self-employed has little impact on the series (apart from in 2003 and 2004), as evidenced in the close relationship between the 'SE effect' and 'published' line. Although the treatment of the self-employed under Model 2 is rather different to the current method, the 'level effect' on the series is removed by referencing to 2003.

Therefore, the only way in which the 'SE effect' can influence the series is if growth in mixed income as a proportion of CoE and GOS diverges from the growth in self-employment as a proportion of total employees, something which happened in 2003 and 2004. These two years saw a large increase in self-employment relative to employment, but a much smaller differential between growth in mixed income and CoE. Table 3 shows growth rates of each of the relevant series used to proxy the self-employed for the published series and Model 2 between the first quarter of 2003 and the second quarter of 2004.

During this period, growth in workers was far higher in the self-employed sector than in the employed sector, whereas the difference between mixed income and the sum of CoE and GOS was much smaller, with the latter actually growing faster in four of the six quarters. This explains the dampening effect of self-employment on Model 2, due to relatively low growth in self-employed earnings. Although not presented here, growth in hours worked by the self-employed was far higher than for employees, similar to the pattern observed for workers. The self-employed thus do not exert a downward effect on Model 1 in 2003 and 2004, which accounts for the diverging growth between models 1 and 2 seen in Figure 3.

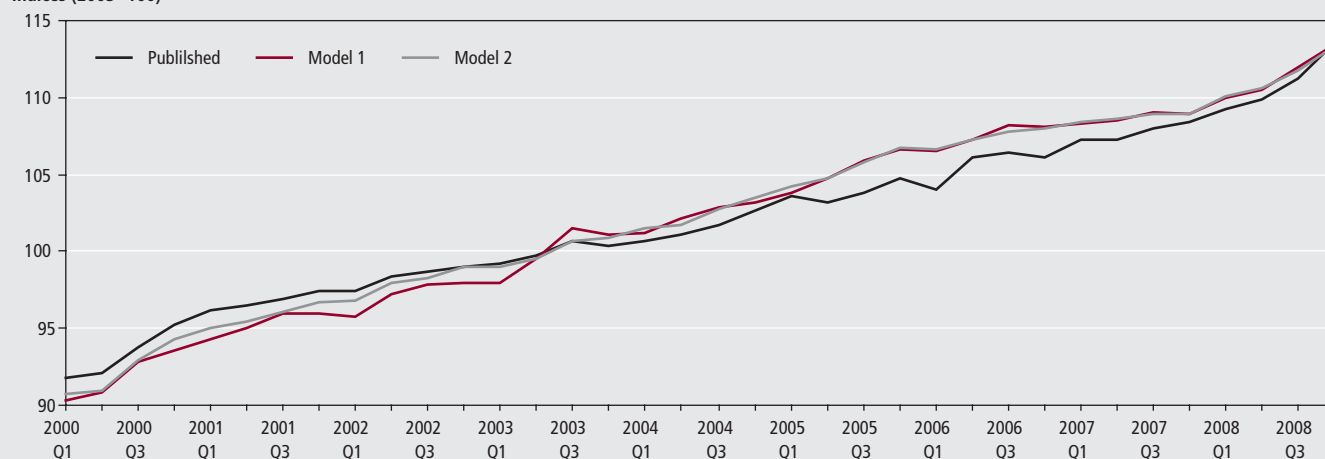
The divergence between models 1 and 2 in 2003 and 2004 demonstrates the importance of how self-employed labour costs are measured to the overall series, which might otherwise be lost if only focusing on the most recent data given the far greater impact of measuring employee labour costs using CoE. Thus, the chosen methodology for unit labour costs should be the one which represents the most credible way of estimating the labour costs of the self-employed, which this article recommends should be Model 2.

The explanation that revisions from the published series are largely driven by the move to using CoE to measure employee labour costs is consistent with the growth rates of CoE and W&S presented in Figure 1: growth in unit labour costs under Model 2 tends to be higher than the published figure between 2002 and 2006, before dropping below it, and appears to be slightly less volatile over the time series.

So given the importance of differences in the growth rates of CoE and W&S in determining the growth of unit labour costs relative unit wage costs, it is necessary to examine the underlying causes of these differing growth rates. Figure 5 presents growth rates of W&S and 'social contributions' – including pension and National Insurance contributions, private health insurance and other benefits – which together form CoE, along with the proportion of CoE each accounts for. The figure shows the generally higher growth rate of social contributions relative to W&S, and hence shrinking proportion of W&S in CoE, which was driving the higher growth in CoE relative to W&S between 2002 and 2006. The two largest peaks in social contributions growth, in 2003 and late 2005 to early 2006, were caused by a significant increase in National Insurance contribution rates, and large increases in employer contributions to their pension funds to meet new, tighter accounting

Figure 2
Headline unit labour costs

Indices (2003=100)



Source: Labour Force Survey and National Accounts, Office for National Statistics

Figure 3
Growth in unit labour costs

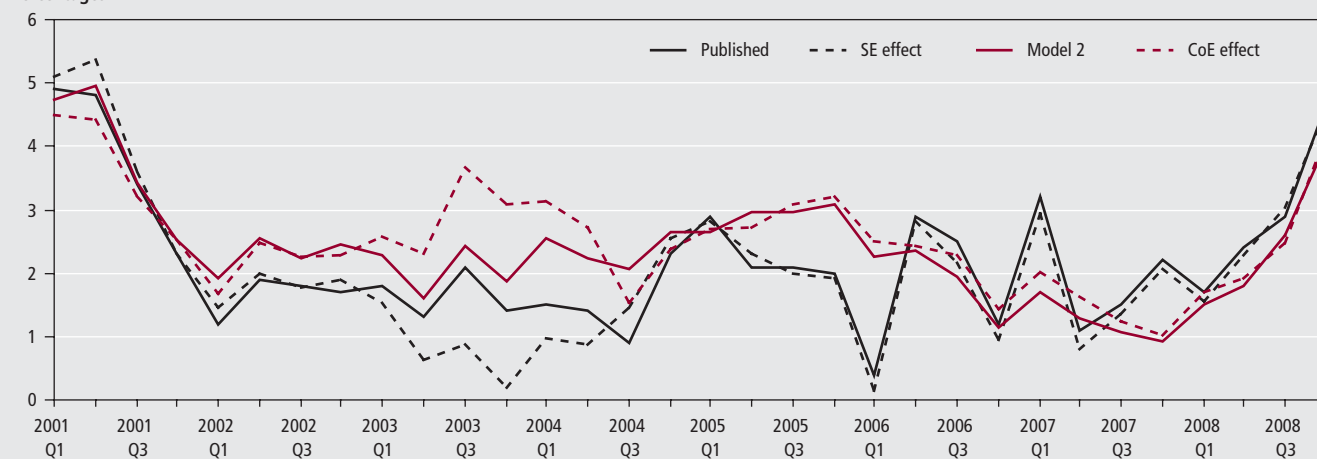
Percentages, quarter on same quarter one year ago



Source: Labour Force Survey and National Accounts, Office for National Statistics

Figure 4
Isolating the causes of revisions from published unit wage costs growth: Model 2

Percentages



Source: Labour Force Survey and National Accounts, Office for National Statistics

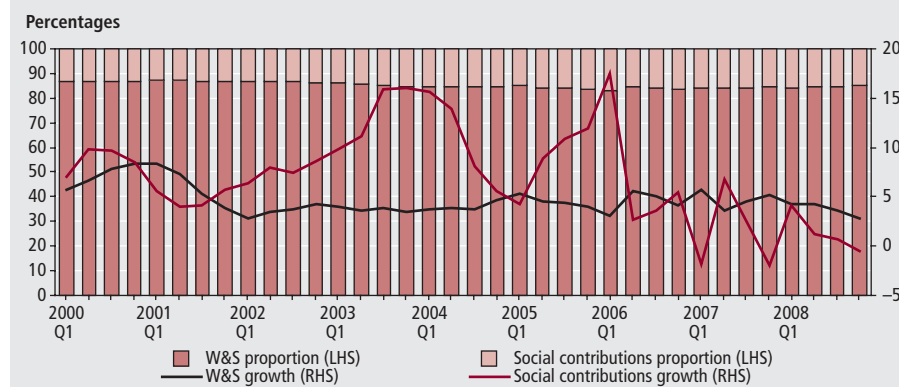
Table 3

Growth in components used to estimate self-employed labour costs

	Percentages, quarter on same quarter one year ago			
	published series		model 2	
	total employees	self-employed	CoE+GOS	mixed income
2003 Q1	0.9	3.2	5.6	3.9
2003 Q2	0.3	6.6	6.2	5.8
2003 Q3	0.0	8.7	6.2	5.2
2003 Q4	-0.5	8.8	6.2	5.7
2004 Q1	0.5	5.5	5.0	7.8
2004 Q2	0.3	3.3	5.1	5.7

Source: Labour Force Survey and National Accounts, Office for National Statistics

Figure 5

Growth in wages and salaries and social contributions and their relative sizes in compensation of employees

Source: National Accounts, Office for National Statistics

standards regarding their assets and liabilities, respectively. These undoubtedly represent significant labour costs to firms, and as such should be included in any unit labour costs indicator, which only strengthens the case for moving towards a CoE-based measure.

Conclusion

The two main conclusions from this analysis are:

- Compensation of employees should be considered for the calculation of unit labour costs, rather than wages and salaries, since the former includes a range of non-salary remunerations

and benefits that would give a more comprehensive, coherent series

- The preferred method for estimating the returns to self-employed labour, for inclusion in the unit labour cost calculations, is to apportion mixed income to self-employed labour using the ratio of CoE to the sum of CoE and GOS in the employed sector

Although it appears from recent quarters as though the choice of Model 1 or 2 makes little difference in terms of the unit labour cost figure each yields, the two measures should only retain their close relationship as long as total hours worked by the self-employed relative to hours worked by employees and

mixed income relative to the sum of CoE and GOS continue to grow in a similar pattern, something which did not occur in 2003–04 and it is not guaranteed to happen in future. In the event that the two measures do differ, the treatment of self-employed labour costs becomes much more important. Thus, the adoption of Model 2 is recommended by this article, as it represents the most credible proxy for the self-employed.

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FEATURE

Charlotte Richards and Wayne Roberts
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Regional Gross Disposable Household Income

SUMMARY

This article looks at estimates for Regional Gross Disposable Household Income (GDHI) at current basic prices, published in April 2009 by the Office for National Statistics (ONS). These data are published using the European Union Nomenclature of Units for Territorial Statistics (NUTS) regions. Data are published for the NUTS1, NUTS2 and NUTS3 levels for the period 1995 to 2007. The article includes an overview of the methodology used in the calculation of regional GDHI and concludes with ONS future plans for regional economic data.

Regional Gross Disposable Household Income (GDHI) is presented at the NUTS1, NUTS2 and NUTS3 levels.

Box 1 outlines the methodology used to derive GDHI figures and **Box 2** describes the NUTS regional classification in greater detail. GDHI for 1995, the year in which the time series using the current methodology starts, are compared with 2007 which is the latest year for which data are available.

Regional (NUTS1) Data

Total GDHI has been increasing in all NUTS1 regions at a similar rate between 2006 and 2007 (see **Table 1**). The highest

growth rates were in London and Northern Ireland, both 3.0 per cent. The lowest growth rate was in the North East with 1.9 per cent.

The UK growth rate was 2.5 per cent, which has slowed from 3.8 per cent between 2005 and 2006. This is reflected across all regions, where comparative rates between 2006 and 2007 ranged from 0.9 to 2.1 percentage points lower than in the previous period. This is illustrated by the South East where growth decreased from 3.5 to 2.6 per cent and the North East where growth decreased from 4.0 to 1.9 per cent.

GDHI per head of population for the

Table 1
GDHI: by NUTS1 Region, 2007

Region	Total GDHI (£ million) ¹	Share of UK (per cent) ¹	Growth on 2006 (per cent)	Per head (£) ²	Per head index (UK=100) ²
United Kingdom	874,031	100.0	2.5	14,317	100
North East	31,327	3.6	1.9	12,216	85
North West	89,495	10.2	2.2	13,038	91
Yorkshire and the Humber	66,789	7.6	2.6	12,901	90
East Midlands	58,376	6.7	2.6	13,268	93
West Midlands	69,646	8.0	2.2	12,941	90
East of England	85,383	9.8	2.5	15,083	105
London	135,502	15.5	3.0	17,931	125
South East	133,724	15.3	2.6	16,095	112
South West	73,462	8.4	2.6	14,187	99
England	743,704	85.0	2.6	14,556	102
Wales	37,470	4.3	2.2	12,574	88
Scotland	69,895	8.0	2.3	13,587	95
Northern Ireland	21,940	2.5	3.0	12,472	87
Extra-region ³	1,023	0.1	1.9	n/a	n/a

Notes:

- Figures may not sum due to rounding.
- £ per head and per head index exclude Extra-region.
- Parts of the UK economic territory that cannot be assigned to any particular region.

Source: ONS Regional GDHI

Box 1

Regional Gross Disposable Household Income: Definition and Methodology

GDHI is the amount of money that individuals – the household sector – have available for spending or saving. This is money left after expenditure associated with income, for example, taxes and social contributions, property ownership and provision for future pension income. It is calculated gross of any deductions for capital consumption.

The household sector includes people living in traditional dwellings, as well as those living in institutions such as retirement homes and prisons. The sector includes sole trader enterprises and Non-Profit Institutions Serving Households (NPISHs), for example, most charities and universities.

Derivation of Gross Disposable Household Income

Total GDHI is derived from the balances of the primary and secondary income accounts.

Balance of the primary income account
+ Balance of the secondary income account
= Gross Disposable Household Income

The Primary Income Account

This account shows the income received by households for their role in the production process, also property income (rent on land, dividends and interest) received and paid. The largest component of UK GDHI is Compensation of Employees (CoE), which consists of wages and salaries and employers' social contributions.

The balance of primary income is the difference between total primary resources and uses.

Total primary resources
– Total primary uses
= Balance of primary income

Primary resources consist of CoE (wages and salaries); operating surplus (mainly rental, imputed or otherwise, in the household sector); mixed income (income from self-employment); and property income receipts.

Primary uses are equivalent to property income paid.

The Secondary Distribution of Income Account

This account shows how the balance of primary income of households is modified by redistribution of payments of current taxes; payments of social contributions and receipts of benefits (other than in kind); and net other current transfers.

The balance of secondary income is derived as the difference of total secondary resources less uses.

Total secondary resources
– Total secondary uses
= Balance of secondary income

Secondary resources consist of social benefits and contributions

received (including pension payments) and other current transfers received (for example, financial gifts and non-life insurance claims).

Secondary uses consist of current taxes on income and wealth (mainly income tax and council tax), social contributions paid (employees pension and social security contributions) and other current transfers paid (financial gifts, charitable donations and non-life insurance premia).

GDHI publication and production

Regional GDHI estimates are published annually for the period 1995 to T-2 years (T being the year of publication) and are consistent with the National Accounts *Blue Book*. Component estimates are published at the NUTS2 sub-regional area and the balances of primary and secondary incomes are published for the NUTS3 local areas. This breakdown is required by Eurostat (the Statistical Office of the European Union).

The estimate of total national GDHI is allocated to regions using a variety of regional indicators. Regional GDHI estimates are initially produced at NUTS3 level and aggregated up to obtain NUTS2 and NUTS1 estimates. These estimates are made on a residence basis; in other words incomes of individuals are allocated to the region in which they live rather than where they work. The data referenced in this article are calculated using a five-year end-point moving average. These adjusted figures remove some year-on-year volatility caused by sampling and non-sampling errors in the data sources. Estimates to which this process has been applied are referred to as 'headline' estimates. The unadjusted 'raw' data are also published by ONS and are supplied to Eurostat.

Regional GDHI estimates are produced at current basic prices, so the effects of inflation are not taken into account in these data.

Data Sources

The national data are allocated to the regional level using the most appropriate indicators available and are drawn from a wide variety of survey and administrative sources. The main datasets used to calculate regional GDHI are:

- HM Revenue & Customs (HMRC) Pay-As-You-Earn (PAYE)
- HMRC wages and salaries
- HMRC self-assessment tax and Survey of Personal Incomes (SPI)
- Other HMRC taxes data
- Various benefit datasets.

Data from these datasets are used as indicators to apportion the National Accounts household accounts components. The methods used are consistent with the guidance set out in the European System of Accounts 1995 (ESA95).

All the input data are subject to a rigorous quality assurance process to ensure that they are the best indicators available.

Box 2

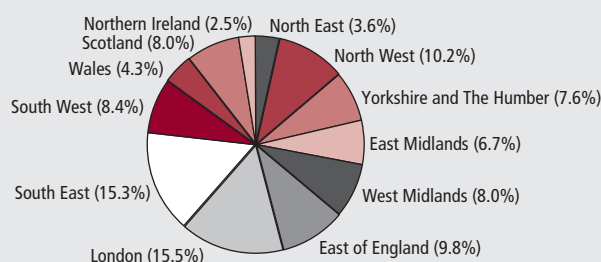
Regional Classification

The Nomenclature of Units for Territorial Statistics (NUTS) provides a uniform breakdown for the production of regional statistics for the European Union. Regional GDHI estimates are produced at three levels of NUTS in the UK. These are:

- NUTS1: the devolved administrations of Scotland, Wales and Northern Ireland and the Government Office Regions (GORs) of England
- NUTS2: 37 sub-regions – sometimes referred to as groups of counties
- NUTS3: 133 areas – generally groups of unitary authorities or districts, also known as local areas
- Extra-region GDHI is that which cannot be assigned to any region, such as the GDHI of embassies and UK armed forces stationed overseas. It also pertains to elements of activities on the continental shelf such as oil and gas extraction.

Figure 1
Share of UK GDHI: by NUTS1 Region, 2007

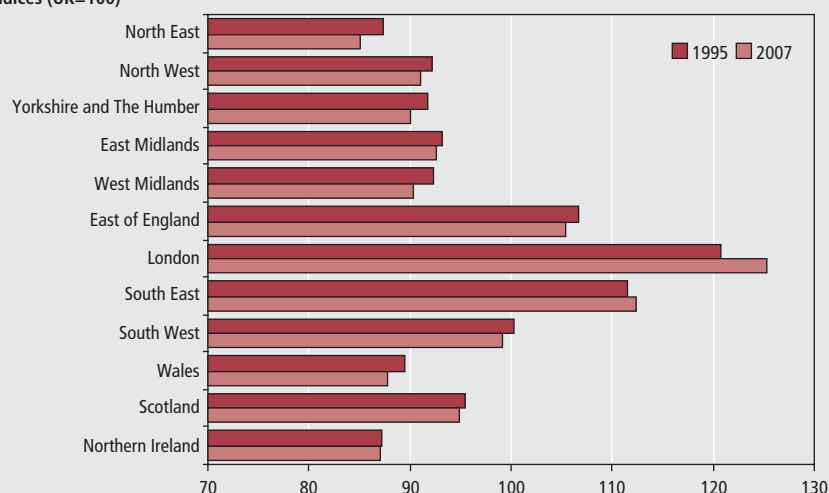
Percentages



Source: ONS Regional GDHI

Figure 2
GDHI per head indices: by NUTS1 Region

Indices (UK=100)



Source: ONS Regional GDHI

UK as a whole, excluding Extra-region, was £14,317 in 2007. London had the highest GDHI per head of £17,931. The South East and East of England were also above the UK average at £16,095 and £15,083 respectively. All other regions had a GDHI per head below the UK average. The North East and Northern Ireland had the lowest GDHI per head, with £12,216 and £12,472 respectively (see Map 1).

Figure 1 shows that London (15.5 per cent) and the South East (15.3 per cent) had the largest shares of total GDHI in 2007, while Northern Ireland (2.5 per cent) and

North East (3.6 per cent) had the smallest shares.

Figure 2 shows that London had the highest regional GDHI per head of population index in 2007, which was 25 points greater than the UK average and four points above the corresponding 1995 index. The North East and Northern Ireland had the lowest indices, 15 and 13 index points below the UK average respectively. Between 1995 and 2007, London and the South East were the only regions where per head indices rose. All the other NUTS1 regions' per head indices were either the same

between 1995 and 2007 or fell within this time period.

Sub-Regional (NUTS2) Data

Within the 37 sub-regions (mainly groups of counties) of the UK, Inner London had the highest household income per head of £20,163 in 2007, while the West Midlands had the lowest household income per head of £11,731 (see Table 2).

In 2007, 14 of the 37 sub-regions were above the UK household income per head (see Map 2), including all those within London and South East. All sub-regions within the East Midlands, North East, Wales and Northern Ireland were below the UK average.

Figures 3 and 4 compare the top five and bottom five ranked sub-regions in 2007 and 1995. There was no change in the top five sub-regional rankings. In 1995, Highlands and Islands and Northern Ireland were within the bottom five sub-regional rankings; by 2007 they had been replaced by Tees Valley and Durham and West Wales and the Valleys. The largest movement of a GDHI per head index between 1995 and 2007 was in Inner London, rising from 130 to 141.

Local Area (NUTS3) Data

The NUTS3 local areas with the highest GDHI per head in 2007 were Inner London - West with £27,838, Surrey £20,019, Buckinghamshire CC £19,458, Hertfordshire £17,869 and Outer London - West and North West £17,726. Of the 133 NUTS3 areas, 42 were above the UK average of £14,317. Nottingham with £10,336, City of Kingston upon Hull £10,495, Blackburn with Darwen £10,793, Leicester £10,855 and Stoke-on-Trent £11,167 were the NUTS3 areas with the lowest GDHI per head in 2007 (see Table 3).

Figures 5 and 6 compare the top five and bottom five ranked NUTS3 local areas in 2007 and 1995. The top five had only one minor change when comparing 1995 and 2007, with Outer London South being fifth in 1995 and Outer London - West and North West replacing it in 2007. Within

Table 2

Top five and bottom five GDHI per head: by NUTS2 Sub-Regions, 2007

Region	Per head (£) ¹	Per head index (UK=100) ¹	Total GDHI (£ million) ¹	Share of UK (per cent)
United Kingdom ¹	14,317	100	874,031	100.0
Top five GDHI per head				
Inner London	20,163	141	60,495	6.9
Surrey, East and West Sussex	17,444	122	45,987	5.3
Berkshire, Buckinghamshire and Oxfordshire	16,988	119	37,038	4.2
Bedfordshire and Hertfordshire	16,539	116	27,486	3.1
Outer London	16,461	115	75,007	8.6
Bottom five GDHI per head				
Northumberland and Tyne and Wear	12,413	87	17,387	2.0
South Yorkshire	12,323	86	16,013	1.8
West Wales and the Valleys	12,265	86	23,206	2.7
Tees Valley and Durham	11,978	84	13,949	1.6
West Midlands	11,731	82	30,547	3.5

Notes:

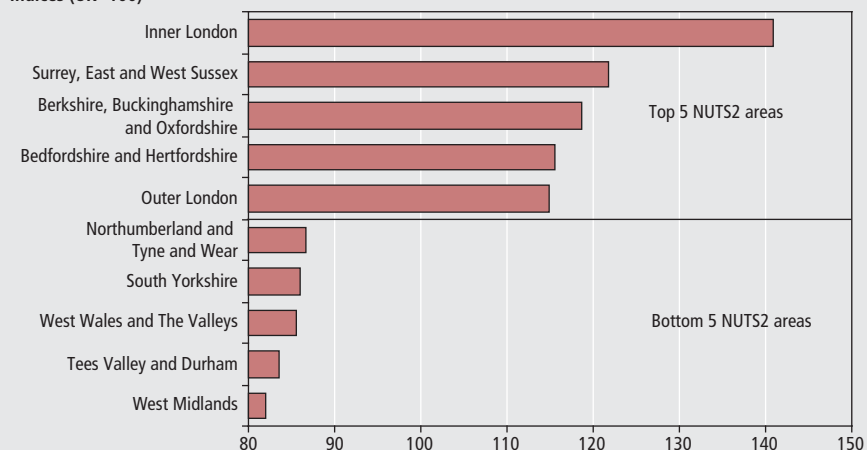
1 £ per head and per head index exclude Extra-regio, while the total £m for the UK includes Extra-regio.

Source: ONS Regional GDHI

Figure 3

Top and bottom five GDHI per head indices: by NUTS2 Sub-Region, 2007

Indices (UK=100)

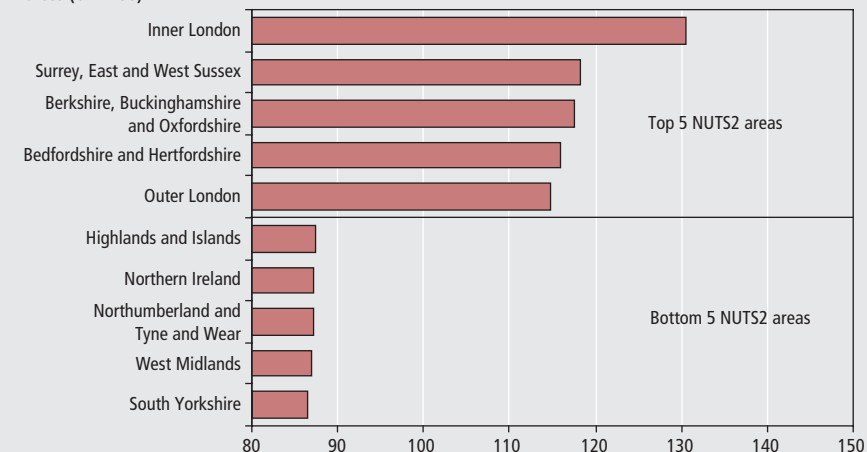


Source: ONS Regional GDHI

Figure 4

Top and bottom five GDHI per head indices: by NUTS2 Sub-Region, 1995

Indices (UK=100)



Source: ONS Regional GDHI

the bottom five ranked local areas, only City of Kingston upon Hull remained. Stoke-on-Trent, Leicester, Blackburn with Darwen and Nottingham all moved into the bottom five in 2007. The largest movement of household per head indices between 1995 and 2007 was in Inner London - West increasing from 180 in 1995 to 194 in 2007.

Composition of Households

Figure 7 illustrates the composition of household income in West Midlands and Inner London, the NUTS2 sub-regions with the lowest and highest GDHI per head respectively. These are in comparison to the 2007 UK average.

The West Midlands GDHI per head value in 2007 was 18 per cent below the UK average. This was driven mainly by the contribution of CoE to its total income, which was 20 per cent below the UK average. In comparison, Inner London's CoE per head was 69 per cent above the UK average of £12,205.

Income from Gross Operating Surplus (GOS) and Mixed Income (MI) was also above average in Inner London at £4,323 per head, 61 per cent above the UK average. In West Midlands conversely, income from GOS and MI accounted for £1,904 per head in 2007, 29 per cent below the UK average of £2,681.

In West Midlands all components were lower than their UK average counterparts. Conversely for Inner London, all components, with the exception of Other Current Transfers (OCT) Uses and Social Benefits, were above average.

Social Benefits

Social benefits are the main component of secondary resources, i.e. income for households following re-distribution. In

Table 3

Top five and bottom five GDHI per head: by NUTS3 local areas, 2007

Region	Per head (£) ¹	Per head index (UK=100) ¹	Total GDHI (£ million) ¹
United Kingdom ¹	14,317	100	874,031
Top five GDHI per head			
Inner London - West	27,838	194	30,818
Surrey	20,019	140	21,986
Buckinghamshire CC	19,458	136	9,546
Hertfordshire	17,869	125	19,050
Outer London - West and North West	17,726	124	31,390
Bottom five GDHI per head			
Stoke-on-Trent	11,167	78	2,669
Leicester	10,855	76	3,176
Blackburn with Darwen	10,793	75	1,520
Kingston upon Hull, City of	10,495	73	2,697
Nottingham	10,336	72	2,984

Notes:

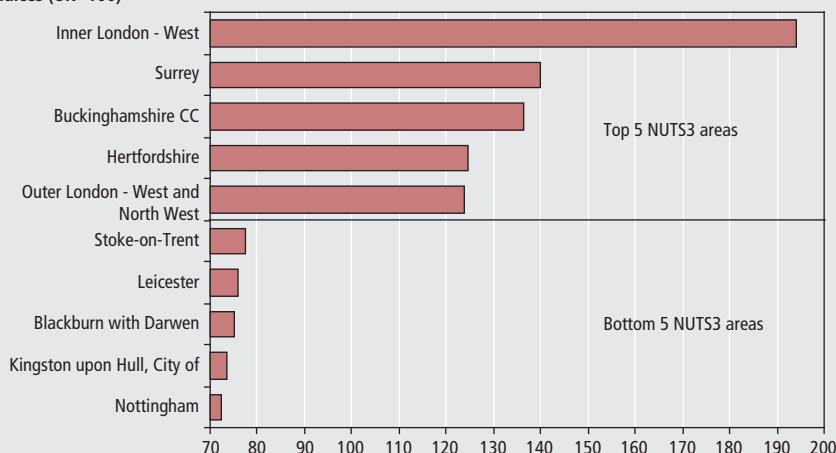
1 £ per head and per head index exclude Extra-regio, while the total £m for the UK includes Extra-regio.

Source: ONS Regional GDHI

Figure 5

Top and bottom five GDHI per head indices: by NUTS3 local areas, 2007

Indices (UK=100)

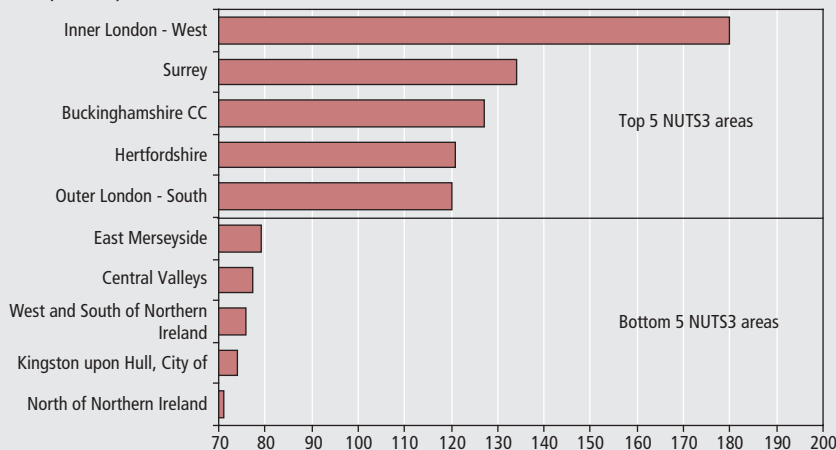


Source: ONS Regional GDHI

Figure 6

Top and bottom five GDHI per head indices: by NUTS3 local areas, 1995

Indices (UK=100)



Source: ONS Regional GDHI

2007 social benefits worth about £226 billion were distributed nationally.

Most NUTS2 sub-regions follow the UK average relatively closely. Dorset and Somerset; Surrey, East and West Sussex; West Wales and the Valleys; Merseyside and Cumbria NUTS2 sub-regions received the highest level of social benefits (mainly from private pensions) per head in 2007 (see Figure 8). These sub-regions ranged from 12 to 15 per cent above the UK average figure of £3,720 per head.

Figure 8 also shows that Leicestershire, Rutland and Northamptonshire and North Eastern Scotland received the lowest social benefits at £3,228 and £3,292 respectively, 13 and 12 per cent below the UK average.

Revisions

The GDHI estimates published in April 2009 include some revisions to earlier published estimates for the period 1995 to 2006.

The main reasons for revisions are:

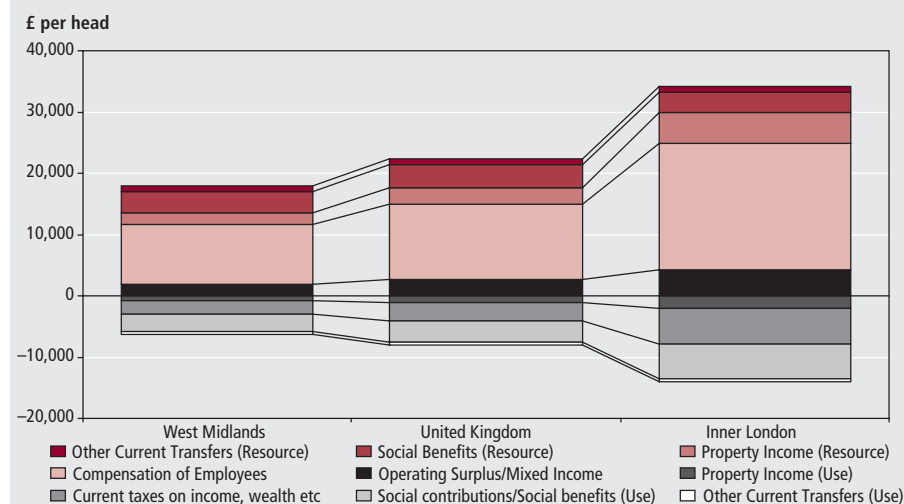
- revisions to the national data in UK National Accounts (*Blue Book* 2008), which go back to 2004 replacing provisional estimates with actual data
- further changes due to replacing estimates with actual data and methodological improvements

Future Work Plans

ONS plans to publish regional GVA for 1989 to 2008 at the NUTS1 level and 1995 to 2007 for NUTS2 and NUTS3 in December 2009. These data will be consistent with the National Accounts *Blue Book* 2009.

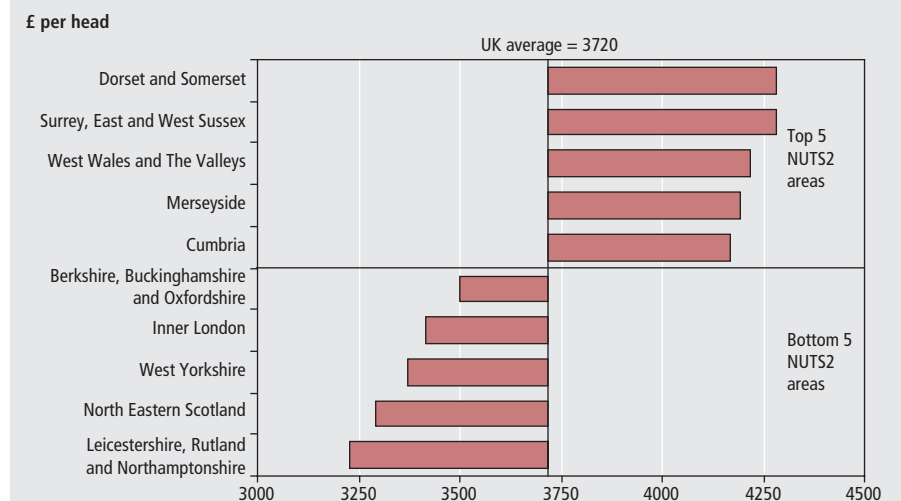
It is also planned to publish regional GDHI estimates at the NUTS1, 2 and 3 levels from 1995 to 2008 (consistent with the National Accounts *Blue Book* 2009) in Spring 2010.

Figure 7

Composition of Household Income Per Head of NUTS2 Sub-Regions, 2007

Source: ONS Regional GDHI

Figure 8

NUTS2 Top and Bottom 5 Social Benefits (Resources) Per Head, 2007

Source: ONS Regional GDHI

The ONS is currently developing experimental constant price estimates of GVA at the NUTS1 level based on the 'production' approach, to supplement the existing current price estimates based on the 'income' approach.

Notes

1. The full Regional Accounts Gross Disposable Household Income publication can be accessed on the National Statistics website at www.statistics.gov.uk/statbase/product.asp?vlnk=14651
2. The full Regional Accounts Gross Value Added publication can be accessed on the National Statistics website at www.statistics.gov.uk/statbase/product.asp?vlnk=14650

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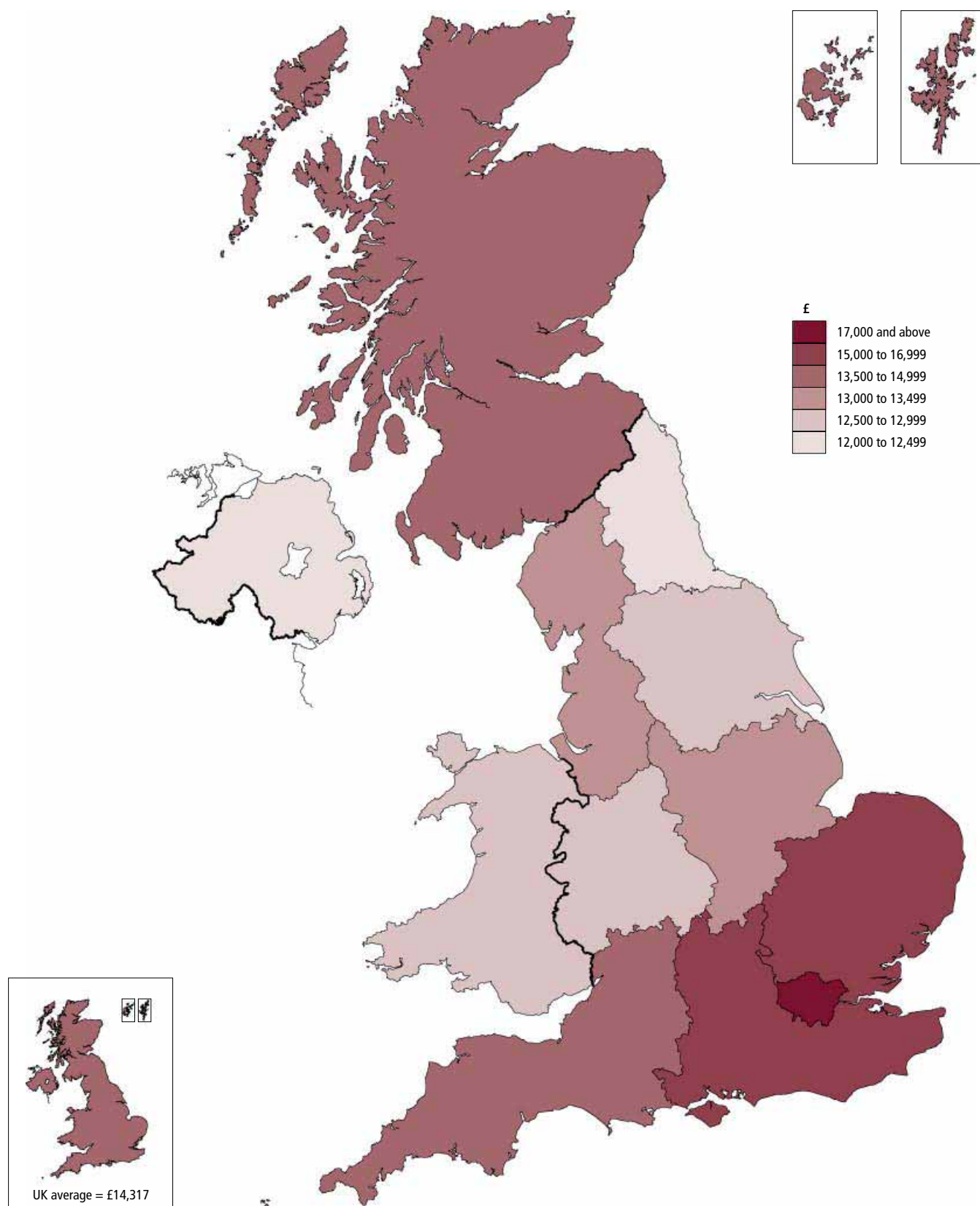
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APPENDIX

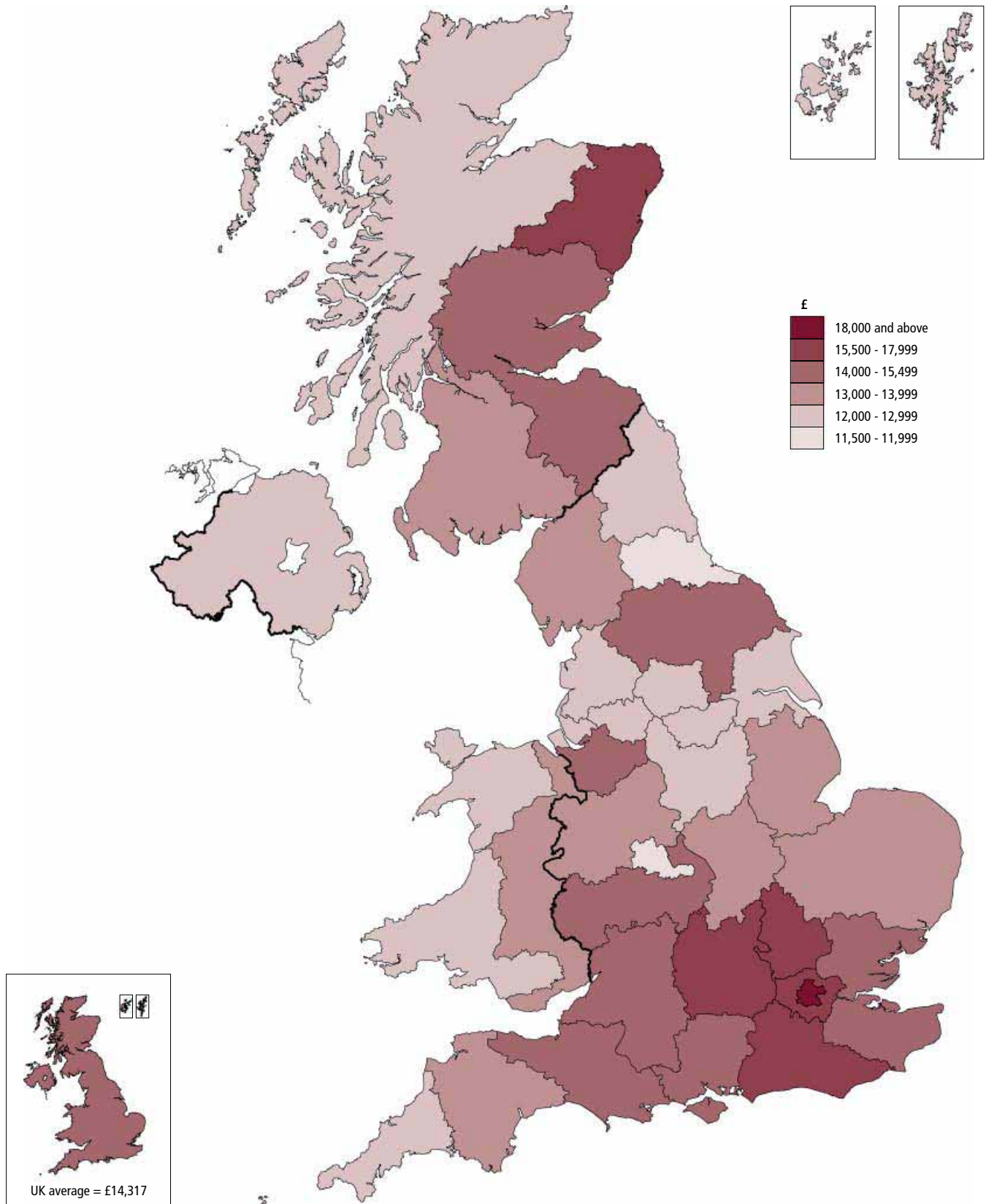
Map 1

Gross Disposable Household Income per head: by NUTS1 area, 2007



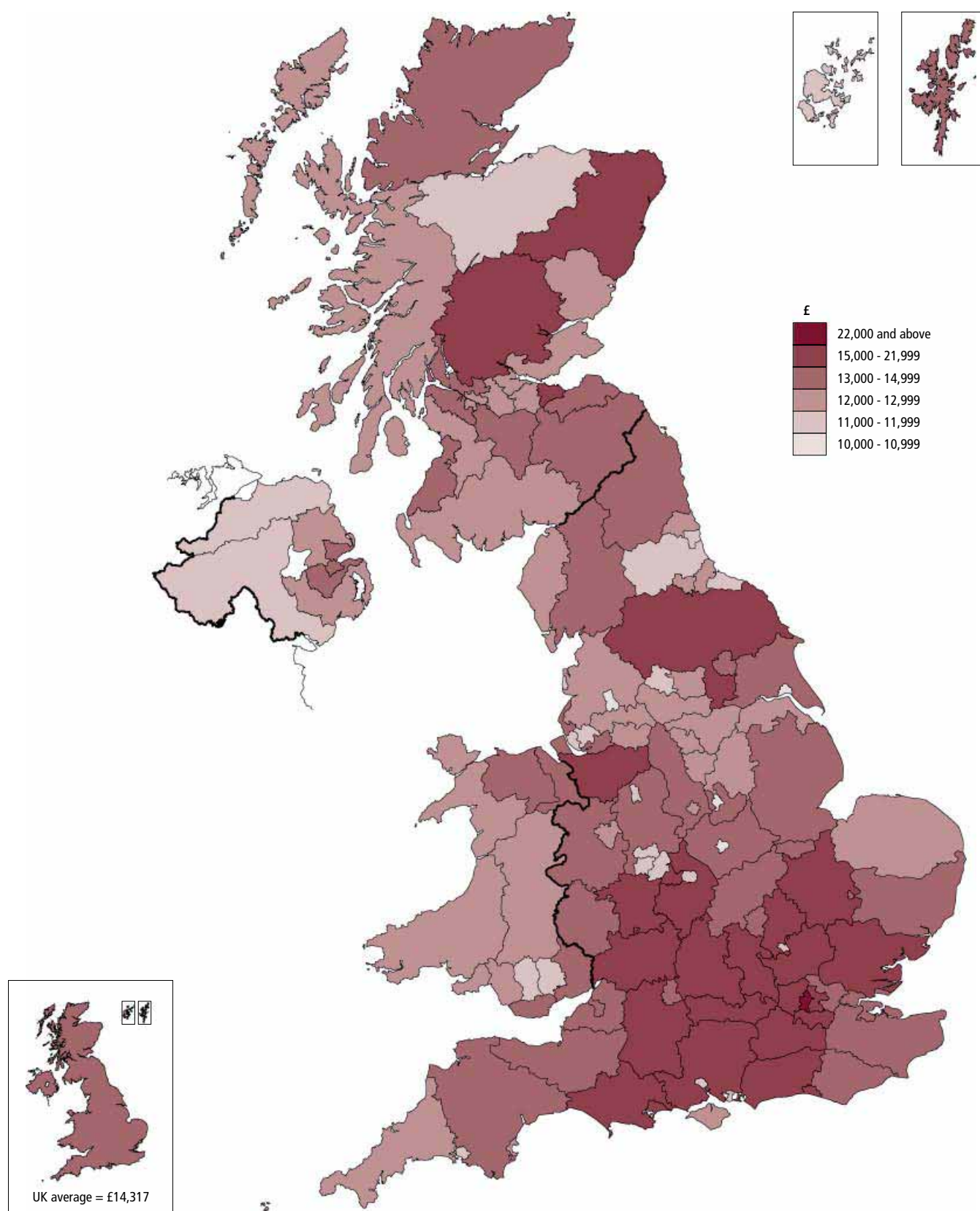
Source: Office for National Statistics

Map 2

Gross Disposable Household Income per head: by NUTS2 sub-region, 2007

Source: Office for National Statistics

Map 3

Gross Disposable Household Income per head: by NUTS3 local area, 2007

Source: Office for National Statistics

FEATURE

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Office for National Statistics

Changes to the retail sales methodology

SUMMARY

This article is based on a previously published information article which was released on 15 May 2009. It outlines methodological and publication changes in the calculation of the value and volume retail sales estimates from the ONS Retail Sales Inquiry that were introduced in the April 2009 retail sales estimates, which were published on 21 May 2009. A comparison between the previously published estimates and the estimates including all the methodological changes is provided for the 'All retailing' estimate.

Introduction

The Office for National Statistics (ONS) compiles and publishes each month the Retail Sales Index (RSI) based on a comprehensive and broad based survey of around 5000 different types of retail businesses. The RSI is a key economic indicator and one of the earliest short-term measures of economic activity. It is used to estimate consumer spending on retail goods and the output of the retail sector, both of which are used in the compilation of the National Accounts.

The main output measures include value and volume estimates, in both seasonally adjusted and non-seasonally adjusted forms. The value estimates reflect the total turnover that businesses have collected over a standard period, while the volume estimates are calculated by taking the value estimates and adjusting to remove the impact of price changes. The value and volume measures of retail sales estimates are widely used in private and public sector institutions, particularly by the Bank of England (BoE) and Her Majesty's Treasury (HMT), to assist in informed decision and policy making.

User review and consultation

It is important that the ONS retail sales estimates continue to be produced according to internationally recognised best practice and standards. This requires regular review and updating of outputs and methods used to calculate the final retail sales estimates, to ensure they are produced to the highest possible quality,

while also meeting changing user needs and demands. The previous major change to the methodology and production processes for the retail sales estimates occurred in 2003 (see ONS, 2003). ONS staff recently assessed these methods and systems processes thoroughly and concluded that they continued to reflect correctly the methods implemented in 2003.

As part of the ONS continuous improvement process, a recent comprehensive user consultation and review was conducted from July 2007 to February 2008 (see ONS, 2008a). This user consultation highlighted potential areas of change for the methods used and publication material of the retail sales estimates. Feedback was obtained from a wide range of respondents, including key users such as the BoE, HMT and the Department for Business, Enterprise and Regulatory Reform (DBERR). As a result of this user feedback, changes to methods and release material were proposed, such as the introduction of annual chain-linking and improving the clarity of the retail sales publication.

A summary of the changes to the ONS retail sales estimates which were published on 21 May 2009 are:

1. Re-referencing of the index for both value and volume estimates to 2005 = 100
2. Use of commodity indices from the Consumer Prices Index (CPI) rather than from the Retail Prices Index (RPI) for the calculation of RSI industry deflators

3. Use of chain-linking for the calculation of volume estimates
4. Availability of seasonally adjusted estimates at a greater level of industry detail
5. Streamlining the presentation of the published estimates
6. Reducing the focus on non-seasonally adjusted estimates within the statistical release
7. Continued development and publication of a separate internet retail sales estimate

All the implemented method changes were thoroughly assessed and quality assured, including an additional review of the methodology by ONS' Methodology Directorate in conjunction with Southampton University. As part of the Code of Practice for Official Statistics, there was further consultation of the proposed changes with key users including the BoE, HMT, and DBERR.

The changes to methods and publication material described in this article were introduced in the April 2009 publication of the Retail Sales Inquiry release which was published on 21 May 2009.

Re-referencing the index to 2005

The reference period is the year for which the index is scaled to equal 100. The RSI was previously published in index form with a reference year of 2000 equal to 100.

The RSI is now re-referenced to 2005 equal to 100 for the value and volume indices. The change to the reference year is a simple calculation and does not impact on the movements in the series.

As part of this process, congruence checks were conducted for all businesses reporting to both the Annual Business Inquiry (ABI) and the monthly Retail Sales Inquiry. This ensures that business information, such as turnover and employment, is up to date, accurate and consistent across these two different sources.

Using price indices from the CPI in calculating RSI industry deflators

To calculate RSI volume measures for each industry, price deflators are applied to the RSI sales values to remove the effect of changes in prices. A separate price deflator is used for each RSI industry.

Industry price deflators are calculated from commodity price indices using weights appropriate to the relevant industry

derived from ABI data on the value of turnover. Previously, commodity weights from the year 2000 ABI were used; now, weights for the year 2005 ABI are used.

The previous approach used commodity price indices calculated from price indices derived from the RPI but aggregated using weights from the CPI. The reason for using weights from the CPI is that they better reflect total retail expenditure in the UK, which is the most appropriate source of weights for RSI. CPI weights are derived from National Accounts household expenditure, which includes the expenditure of all private households in the UK, foreign visitors to the UK and people living in other accommodation such as nursing homes, retirement homes and university halls. In comparison, the RPI weights are largely based on the Expenditure and Food Survey, which only includes private households in the UK, and exclude the contributions to total expenditure from the top four per cent of households by income and from pensioner households that derive at least three quarters of their income from state benefits.

The approach now uses commodity price indices calculated from price indices derived from the CPI and aggregated using weights from the CPI.

As well as the scope differences described above, the calculation of the initial price indices within the RPI and CPI use different mathematical formulae to combine prices collected within each item in the retail basket. The CPI uses a formula that takes some account of substitution between similar products within each item, while the RPI uses a formula which does not allow for substitution between products within each item. Substitution between products arises as consumers change their patterns of expenditure towards those products whose prices are rising most slowly. For RSI, it is important that these substitution effects are accounted for by the price indices. The use of CPI rather than RPI for the commodity price indices ensures that the RSI volume indices are not adversely affected by the substitution effect. For detailed information on the methodological differences between the CPI and RPI see the Consumer Price Indices Technical Manual (ONS, 2007).

The initial price indices derived from the CPI are generally less than or equal to the corresponding initial price indices derived from the RPI due to the differences in formula.

The impact of using price indices from the CPI is higher rates of growth for the volume estimates, as a result of that change on its own. This change does not affect the value estimates.

Creating a chain-linked index

Previously, RSI volume indices were based on the assumption of fixed prices for a base period of the year 2000. Over a long time period, a fixed base index, will generate what is known as substitution bias. When consumers switch their spending away from goods with rising prices towards those with falling (or less rapidly rising) prices, goods with high price increases tend to have lower increases in volume than goods with low price increases. In a fixed base index, use of the lower base prices for goods with high price increases means that the economic importance of their low increases in volume is understated because the index does not take account of the higher current prices for these goods. In a similar way, the economic importance of the higher increases in volume for goods with low price increases is overstated. The combined impact of these effects is that fixed base indices tend, over a long period, to overstate growth in the volume of sales.

This problem was previously addressed by regular five-yearly rebasing where the base year is changed every five years, so that base prices are not too different from current prices. At rebasing, the indices for different base years are linked together by scaling one index up or down so that the indices from the different base years match at some defined link period. This linking process effectively absorbed the substitution effect into the RSI volume index but in a way that maintained the integrity of the index as a measure of volume change.

However, in a rapidly changing economy, even five-yearly rebasing is not sufficiently frequent to reduce substitution bias to an acceptable level. In response to user requests, supported by the review of methodology, the RSI is now rebased every year. This annual rebasing is usually referred to as annual chain-linking. Annual chain-linking is an internationally recognised approach and is recommended by Eurostat and used by most EU Member States. ONS National Accounts use chain-linking in the compilation of high profile estimates such as Gross Domestic Product. RSI will use chain-linking methods consistent with the standard National Accounts method, as described in Tuke and Reed (2001).

As already noted, volume indices calculated using annual chain-linking will

generally show lower growth than fixed base indices, as a result of that change on its own. Chain-linking does not affect value estimates.

The following main steps are undertaken to create chain-linked estimates for the RSI:

1. For each year, relative proportions, i.e. weights for sales values, of each industry within all retailing are calculated using actual data from the RSI. ONS (2009b) gives a table of the industry weights by category, for the most recent year available (2008). Previously, the RSI used industry weights derived from data for the year 2000 ABI. Annually revised weights based on the RSI will be more timely and up to date.
2. Each year's index estimates are linked together using a three month average as opposed to a single month, in order to reduce volatility. The period used is from October to December each year. This is standard practice within ONS for National Accounts outputs.
3. Chain-linking starts at the lowest possible level of aggregation. For the RSI this means that aggregation uses the small and medium businesses combined with the large businesses for each industry within each retail sector. These estimates are used to create a chain-linked estimate for all businesses for each industry. Higher level chain-linked aggregates are then derived in a similar way.
4. Chain-linking requires knowledge of the previous year prices so the data can be linked together over time. Data is now published from January 1988 for value and volume for both non-seasonally adjusted and seasonally adjusted estimates.

The introduction and use of chain-linking addresses one of the main user requests, particularly from the BoE, from the recent user review in 2007.

Change in the level of seasonal adjustment

The methodological changes that have been introduced, such as chain-linking and the use of price indices from the CPI, mean that the estimates for the value and volume non-seasonally adjusted time series have been revised along the length of the series.

The non-seasonally adjusted value and volume estimates are now calculated for twenty one different industries, for small and medium businesses and for

large businesses separately. Higher level aggregates are then derived from the lower level estimates. Data for the non-seasonally adjusted estimates, subject to confidentiality assessments, is still available in the Retail Sales Statistical Data Monitor.

Because the non-seasonally adjusted estimates have been revised, a thorough re-assessment of time series properties has been performed on the new chain-linked non-seasonally adjusted estimates. As part of this process, seasonal adjustment parameters have been re-assessed and updated as necessary. These include appropriate adjustments for: outliers, level shifts, Easter, standard reporting periods, bank holidays and accounting for the timing of Christmas Day. These adjustments are series dependent.

Seasonally adjusted value and volume estimates are now calculated for twenty one different industries rather than for the nine series currently analysed. This allows users to analyse seasonally adjusted series at a more detailed level. For example, seasonally adjusted estimates will be calculated for electrical stores, furniture and hardware, whereas it was only previously available for Household goods in total.

Higher level seasonally adjusted aggregates are constructed using the same process used for the chain-linked non-seasonally adjusted estimates. Seasonally adjusted estimates are still published for the main aggregates, with the opportunity to publish seasonally adjusted estimates at a greater level of detail.

An increased level of detail for the seasonally adjusted estimates contributed to revisions to previously published higher level seasonally adjusted aggregates.

Changes to published information

The retail sales estimates were previously published each month in the Retail Sales First Release, Retail Sales Statistical Data Monitor, briefing note, a separate experimental Internet Sales First Release and a news release.

A revised Statistical Bulletin format was introduced on 21 May 2009 to streamline the release of the retail sales material. The Retail Sales Statistical Data Monitor, which includes detailed information for detailed industries and different types of businesses, continues to be published separately.

Previously published material included a range of information based on the non-seasonally adjusted and seasonally adjusted series, and indicators derived from the seasonally adjusted estimates.

Each estimate provided a complementary view of the activity within a particular retail sector. The Statistical Bulletin uses a selected combination of previously published information and includes changes to the presentation by focusing on the year-on-year percentage change as the headline indicator for both the value and volume seasonally adjusted estimates. A detailed sector summary is now included, focusing on the three main aggregates: predominantly food; predominantly non-food; and non-store retailing and repair. Information on the implied price deflators will also be included. The experimental Internet sales release is now included in the Statistical Bulletin and is not published separately.

Some analysis of the raw data continues to be included in the Statistical Bulletin to demonstrate the wide range of experiences by size of business and type of industry. The aggregate non-seasonally adjusted estimates continue to be available, along with other indicators, in the Retail Sales Business Monitor and on the ONS website. Note that the non-seasonally adjusted estimates still contain calendar effects. In practice this can lead to a distortion depending on the timing of the reporting period in relation to calendar months, previous reporting periods and how weekly activity changes over time. The use of the non-seasonally adjusted estimates for analysis will give a misleading indication of activity over time. For most purposes, it is best to focus on the seasonally adjusted estimates, which have the calendar related component removed.

Continued development of the experimental Internet sales estimate

Sales made over the Internet are an important and rapidly evolving part of the retail sector. Internet retail sales are already included within the monthly RSI. To improve the understanding of this sector, a separate experimental Internet retail sales estimate has already been produced on a monthly basis since December 2008. For a full description of the current methods see 'An experimental measure of Internet retail sales' (ONS, 2008b).

As part of continued development, a dedicated question relating to Internet retail sales, that is applicable for all businesses within the RSI, has been included on the RSI questionnaire since March 2009. In the coming months, the information collected from all businesses will be used to update the proportion of retail sales that relate to Internet sales for small, medium and large

businesses. Even though this estimate is designated as experimental, it is derived primarily from information collected through the Retail Sales Inquiry, with the experimental label relating to the use of proportions of internet sales for small and medium businesses rather than the quality of the actual data. The use of a dedicated question collecting actual data for all businesses in the sample will ensure that this indicator reflects the dynamic and rapid nature of this sector across different sizes of business. Until all development work is completed, the Internet retail sales estimate will continue to remain an experimental estimate and will not be designated a National Statistic.

To improve the coherence of the retail sales release, the separate experimental Internet sales release has been discontinued and this information included in the Retail Sales Statistical Bulletin. This particular statistic is clearly labelled as experimental.

Example: Impact of changes based on March 2009 data

To understand the impact of the introduction of the methodological changes, it is necessary to compare the previously published estimates against the estimates which include the methodological changes. Analysis of the 'All retailing' estimates has been provided. The methodological changes may have different impacts for lower level time series.

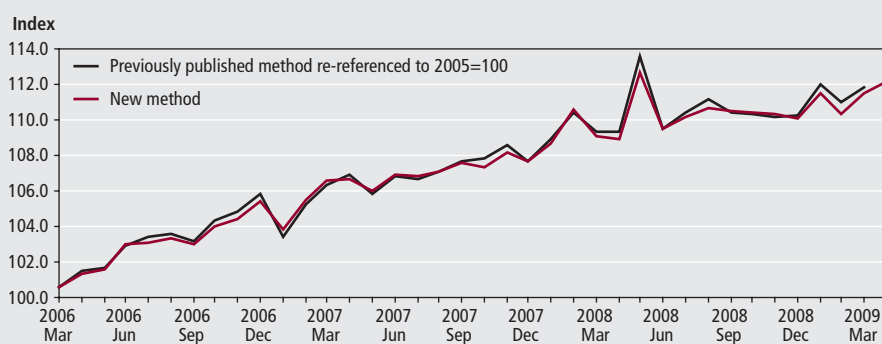
To assist in the comparison the previously published estimates have been re-referenced to a base year of 2005 equal to 100 to ensure the comparison is made with the two series at the same level. Re-referencing does not change the movements in a time series. The estimates currently produced now combine the separate method changes set out above and are available up to April 2009 as published on 21 May 2009. The previously published estimates use data available up to March 2009.

Figure 1 shows that differences between previously published estimates and new estimates for the value seasonally adjusted estimates are minimal. This is expected as the methodological changes primarily affect the calculation of volumes. **Figure 2** shows that the year-on-year percentage changes for the value seasonally adjusted estimates are broadly similar under both methods.

Figure 3 and **Figure 4** show the volume seasonally adjusted estimates. **Figure 4** shows that the year-on-year percentage changes for the new volume estimates are lower for the most recent months.

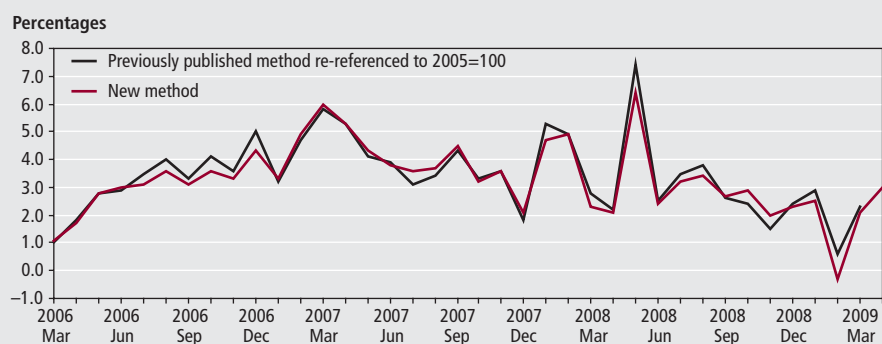
Table 1 gives summaries of year-on-year

Figure 1
All Retailing for value, seasonally adjusted, 2006 to 2009



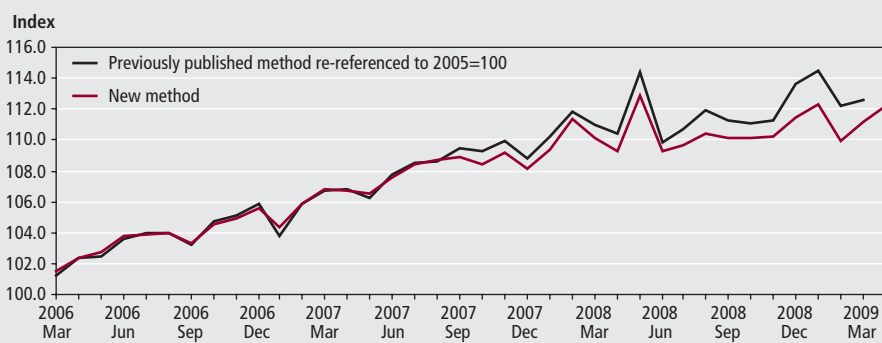
Source: ONS Retail Sales inquiry

Figure 2
All Retailing for value, seasonally adjusted year-on-year percentage change, 2006 to 2009



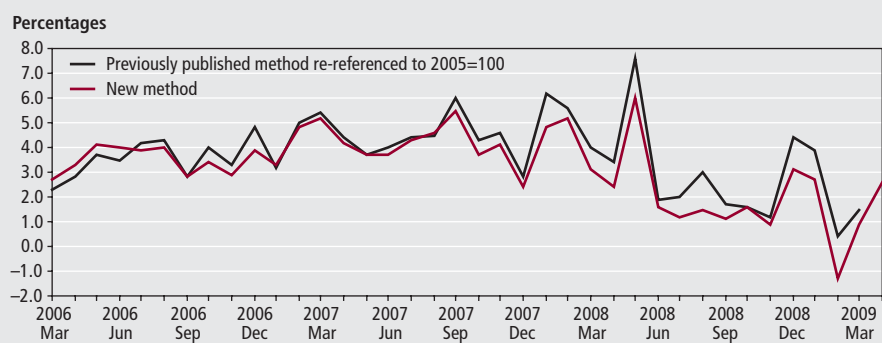
Source: ONS Retail Sales inquiry

Figure 3
All Retailing for volume, seasonally adjusted, 2006 to 2009



Source: ONS Retail Sales inquiry

Figure 4
All Retailing for volume, seasonally adjusted year-on-year percentage change, 2006 to 2009



Source: ONS Retail Sales inquiry

Table 1

All retailing year-on-year percentage movements, for value and volume, seasonally adjusted estimates

		Percentages			
		Value		Volume	
		Previous method re-referenced to 2005	New method	Previous method re-referenced to 2005	New method
2008	Mar	2.8	2.3	4.0	3.1
	Apr	2.2	2.1	3.4	2.4
	May	7.4	6.4	7.6	6.0
	Jun	2.5	2.4	1.9	1.6
	Jul	3.5	3.2	2.0	1.2
	Aug	3.8	3.4	3.0	1.5
	Sep	2.6	2.7	1.7	1.1
	Oct	2.4	2.9	1.6	1.6
	Nov	1.5	2.0	1.2	0.9
	Dec	2.4	2.3	4.4	3.1
2009	Jan	2.9	2.5	3.9	2.7
	Feb	0.6	-0.3	0.4	-1.3
	Mar	2.3	2.1	1.5	0.9
	Apr	n.a.	3.0	n.a.	2.6

Source: ONS Retail Sales inquiry

percentage movements for the previous method, re-referenced to 2005, and the new method, for the All retailing series. Impacts will be different for different series.

Conclusion

The RSI is an important early indicator which gives an understanding of the current state of the economy. The changes that have been introduced into the production and publication of the retail sales estimates respond directly to user feedback made as part of the regular review process, and follow international best practice.

The impact of recent method changes has lowered the growth in the volume of retail sales from 10.1 per cent to 8.7 per cent over the last three years, calculated using data from March 2006 to March 2009. The value estimates are relatively unchanged.

These changes described in this article were introduced in the April 2009 Retail Sales Statistical Bulletin which was released on 21 May 2009. The information in this article is based on a previously published information article which was released on 15 May 2009.

Additionally, further changes to the Retail Sales Inquiry will be made in 2010 with the introduction of a new Standard Industrial Classification (SIC 2007). This is a coordinated change across ONS, and is taking place in line with the major revision of the industrial classification system agreed by the United Nations and used by European Union (EU) Member States. An article describing the impact on the retail sales estimates will be published before the changes are introduced.

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Methods explained

Methods explained is a quarterly series of short articles explaining statistical issues and methodologies relevant to ONS and other data. As well as defining the topic areas, the notes explain why and how these methodologies are used. Where relevant, the reader is also pointed to further sources of information.

Business Structure Database¹

The Inter-Departmental Business Register (IDBR) for Research

Peter Evans and Richard Welpton

Office for National Statistics

SUMMARY

The Interdepartmental Business Register (IDBR) is a comprehensive database of UK businesses, drawn from administrative data sources. This article initially provides a short explanation of the IDBR. The focus of the article is then directed to the development of the IDBR as a research tool by staff at the Virtual Microdata Laboratory (VML). The resulting Business Structure Database (BSD) is now routinely used for academic and government studies.

The IDBR

The IDBR² is the sampling frame for surveys of business activity conducted by the Office for National Statistics (ONS) and also by other government departments. The register contains records of over 2 million businesses from all sectors of the economy. The only exceptions are organisations generating turnover below the Value Added Tax (VAT) threshold (currently £68,000 annually) and/or those which do not pay employees via pay-as-you-earn (PAYE) where salaries of £100 per week and over must be paid via PAYE. A business may be included if it pays a salary to an employee of over £100 per week but does not generate sufficient revenue to be registered for VAT, and vice versa.

The IDBR draws upon the following administrative sources:

- HMRC (information about businesses which are registered for VAT or PAYE are provided to the ONS)
- Dunn and Bradstreet (information about business ownership links, provided annually)
- ONS surveys (other surveys supplement the above sources by identifying new, and maintaining existing, business structures)
- Companies House (received quarterly)

Box 1 illustrates the IDBR structure for simple and more complex organisations and the information collected.

The IDBR limits research by a wide audience for two reasons. First, access is highly restricted due to the inclusion of confidential HMRC data. Second, it is difficult to perform historical analyses on these data. The register is updated at regular intervals but a regular referenced set of changes is not maintained. Businesses may experience various demographic events (e.g. mergers and acquisitions) throughout their life, making it difficult to build up a longitudinal picture of businesses over their life cycle. To resolve these issues the BSD is an annual 'snapshot' of the IDBR which is deposited

within the VML for the purpose of micro-data analysis (see **Box 2** for a brief description of the VML). Security controls around access and procedures for using the VML protect the confidentiality of IDBR data. Considerable effort has also been dedicated to improving the micro-data integrity of the BSD, enabling researchers to undertake longitudinal analyses of data from the IDBR.

The BSD

The BSD 'snapshot' is taken every March and includes data on enterprises and local units. Two BSD files are created, and contain observations for enterprises and local units. The consistency of IDBR reference numbers throughout time enables these BSD files to form a panel data set.

Variables

The number of variables found in the BSD is small relative to other data sources. However, the BSD is virtuous by its extensive coverage, since any organisation registered for VAT or PAYE is recorded on the IDBR.

Box 3 provides an overview of the variables contained in the BSD for enterprises and local units.

In addition, the local unit files contain a variable that identifies reasons for inactivity of the unit. Examples include 'ceased trading', 'change of ownership', and 'liquidation'.

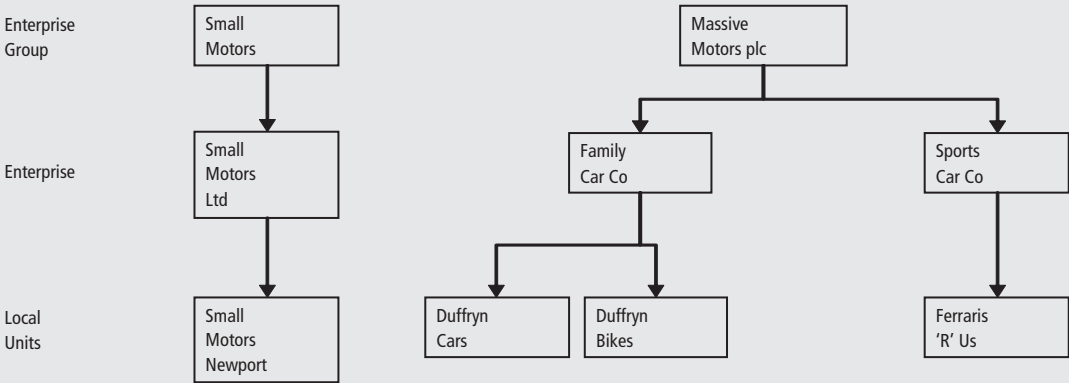
Employment and turnover figures are derived from HMRC administrative records - PAYE or VAT returns respectively. The BSD includes a marker identifying origination.

For various research purposes, researchers may use the extensive data available from the Annual Business Inquiry (ABI), including turnover. However, it should be noted that, particularly for smaller firms, turnover figures in the ABI are often imputed. For quality and consistency, all enterprise turnover data in the BSD are derived from at least one of the two administrative data sources.

Descriptive statistics

Not all of the enterprises observed in the BSD are 'active' - defined as an enterprise with at least one local unit for which live data is available. Live data may not be available if a company is not currently trading, or turnover is so low that the company is not liable for VAT. It should be noted that records of inactive enterprises may be kept in the IDBR database for up to two years, until confirmation that an

Box 1
The IDBR structure and information collected



The ‘enterprise’ can be thought of as the ‘company’. Local units are ‘plants’, for example, a retail outlet or factory. The plant is the source of business activity. It may be a factory that produces finished goods or an accountancy office, for example. The left-hand side shows a single-site enterprise (the enterprise is the local unit). The right-hand side provides an example of a more complex company: the enterprise group ‘owns’ two companies, Family Cars and Sports Cars. Family Cars controls two local units. These are factories which produce cars and bikes respectively.

The following information is collected at local unit and enterprise level:

- Name
- Address including postcode
- Standard Industrial Classification (SIC) 2003 and 2007
- Employment and employees
- Turnover
- Legal status (company, sole proprietor, partnership, public corporation or nationalised body, local authority or non-profit body)
- Enterprise group links
- Country of ownership
- Company number
- Intrastat marker for goods and services traded (imports and exports) between the EU member states and the UK.

Box 2
The Virtual Microdata Laboratory (VML)

The Virtual Microdata Laboratory (VML) is a depository of economic and social firm data which ONS makes available to researchers, across academia and government, and has already supported a large volume of academic and policy work³. It is a

secure technical environment adhering to strict disclosure control principles to ensure full confidentiality of all data. Responsibility for running the laboratory rests with the Microdata Analysis & User Support (MAUS) team⁴.

Box 3
Variables in the BSD (enterprise level)

Variable

- Enterprise reference
- Enterprise group reference
- Postcode
- Immediate foreign ownership
- Ultimate foreign ownership
- Employment
- Turnover
- Standard Industrial Classification
- Birth date
- Death date
- Number of local units
- Number of reporting units
- Status

Description

- IDBR identifier code
- Reference of parent organisation
- Enterprise postcode
- Foreign ownership marker
- Foreign ownership marker
- Employment for enterprise
- Turnover for enterprise
- SIC92, SIC03 or SIC07 (depending on year)
- Year business began trading
- Year business stopped trading
- Number of local units making up the enterprise
- Number of reporting units making up the enterprise
- Legal status of the enterprise (e.g. company, partnership, sole proprietor etc.)

enterprise has ceased trading is received. **Figure 1** depicts the total number of enterprises for each year of the dataset, and how many of these are active.

It is clear that the total number of enterprises included in the sample increases over time, significantly so from 2003 onwards. However, the number of active enterprises do not rise in proportion.

Trend growth in the number of enterprises by type of sector is now examined. Using Standard Industrial Classification (SIC) information available for each enterprise in the BSD, we classify enterprises as either manufacturing, service or other non-service organisations (agriculture, mining and energy). **Figure 2** shows the growth rate of each sector, in comparison to the baseline year of 1997, and illustrates the decline of the manufacturing sector and the relatively high level of growth by the service sector which appears to accelerate from 2003.

Further descriptive analysis explores the number of enterprises by sector with respect to the number of local units and employment. **Table 1** reports that the largest proportion of (active) enterprises contain only one local unit. These are single-site enterprises, where all the operations of a particular business are located in the same premises (see Box1). Single site enterprises also account for the largest proportion of employment. By contrast, enterprises with the highest number of local units (typically large nationwide organisations) are fewest in number. However owing to their size, they account for the second-highest proportion of employment in

the IDBR. Enterprises with between 51 and 100 local units account for the smallest proportion of employment.

In addition, the average employment per local unit with respect to the number of local units per enterprise is found to follow an inverted U-shaped curve: average employment per plant is smallest at single-site enterprises, increasing with more local units. However average employment per local unit falls for the very largest enterprises (by local unit count).

Table 2 displays some characteristics for enterprises in each of the three defined sectors. The panel nature of the observations allows a comparison of characteristics in different time periods. For example, in 2007/2008 a greater proportion of enterprises were single site compared to the previous decade, for all sectors. It is also interesting that activity in service enterprises is not as concentrated on a small number of local units compared to enterprises in the manufacturing or other non-service sectors – a higher percentage of service enterprises derives activity from over 1000 local units (these are likely to be large retailers and chains).

Average employment for enterprises in each sector have been calculated. The average employment is relatively small, which is not surprising given that the majority of enterprises are based in one location and, as seen in Table 1, employ small numbers of workers. However, it can be inferred that on average, manufacturers employ more workers. These results may be explained by the fact that manufacturing plants are larger than, for example, small retailers or practices classified as service industries.

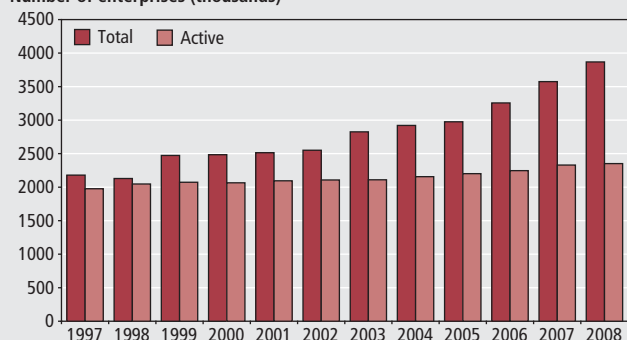
Finally, two types of entry and exit rates for enterprises in each sector (using the method adopted by Disney et al (1999)) are presented. The first 'panel' rates refer to movements of enterprises into and out of the BSD panel per se. The second set of rates are calculated using the IDBR enterprise birth years and death years available in the BSD.

There are two advantages for using the latter method. First, accurate rates may be calculated based on real trading activity by an

Figure 1

Active enterprises by year

Number of enterprises (thousands)

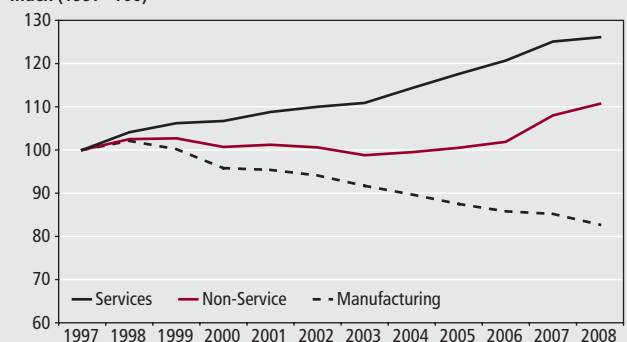


Source: ONS Business Structure Database

Figure 2

Relative sector growth 1997–2008

Index (1997=100)



Source: ONS Business Structure Database

Table 1

Constitution of Enterprises

Number of local units	Average number of enterprises (per cent of total in brackets)	Average count of employment (per cent of total in brackets)	Average employment per local unit, 1997–2008
	1997–2008	1997–2008	
1	2,075,187 (96.91)	11,202,219 (42.02)	5
2 to 5	57,178 (2.67)	3,522,001 (13.21)	25
6 to 10	4,302 (0.2)	1,302,017 (4.88)	41
11 to 20	2,127 (0.1)	1,291,142 (4.84)	42
21 to 50	1,414 (0.07)	1,558,587 (5.85)	35
51 to 100	497 (0.02)	1,112,781 (4.17)	32
100 plus	670 (0.03)	6,672,331 (25.03)	26
Total	2,140,705	26,661,078	

Source: ONS Business Structure Database

Table 2
Characteristics of enterprises by sector

Period	Percentages					
	Manufacturing		Non-Service		Services	
	97/98	07/08	97/98	07/08	97/98	07/08
No. of local units						
1	82.1	86.2	94.5	96.2	73.4	76.6
2 to 5	11.6	8.3	2.3	1.5	7.7	4.8
6 to 10	1.7	1.5	0.5	0.3	1.6	1.3
11 to 20	1.5	1.1	0.6	0.4	1.4	1.3
21 to 50	1.5	1.1	0.6	0.4	2.1	1.8
51 to 100	0.5	0.6	0.3	0.3	1.7	1.5
101 to 500	1.1	1.1	0.9	0.7	5.2	5.5
501 to 1000	0.0	0.3	0.2	0.1	3.1	2.7
1000 plus	0.0	0.0	0.1	0.0	3.8	4.5
Mean Employment	24	20	5	5	14	13
Entry Rate Panel	8.4	8.6	6.3	10.7	8.3	14.7
Exit Rate Panel	10.2	11.6	7.5	11.4	10.6	14.6
Entry Rate	7.5	7	4.7	8.8	8.1	12.5
Exit Rate	9.4	8.8	7.1	7.2	10.2	10.8

Source: ONS Business Structure Database

enterprise, not simply when entry or exit into or out of, or inclusion or exclusion of, a survey occurs. Secondly, calculating an entry rate using the first year of the data series will result in a 100 per cent entry rate, and likewise when calculating an exit rate using the last year of data. This problem can be solved by using the actual recorded year that a company begins or ceases to trade.

In Table 2, the second set of entry and exit rates are smaller than the first, which reflects the fact that enterprises may be entering or leaving the data, but for administrative reasons, valid birth or death dates have not been confirmed and entered onto the IDBR. The entry and exit rates are consistent with the story portrayed in Figure 2. In both time periods, exit rates in the manufacturing sector are higher than entry rates – more enterprises cease to trade than begin, and this highlights the decline in manufacturing. The reverse is true for enterprises in the service sector.

Why use the BSD?

Using the BSD by itself or in conjunction with other data offers the following advantages:

- The ability to analyse data at the local unit level
- Historical data allows researchers to examine business structure, performance and behaviour throughout time.
- Provision of a large sample of enterprises – particularly useful

when concentrating on specific five-digit SIC sectors, when other surveys would only cover a handful of enterprises. The large sample can also be used to construct more accurate entry and exit rates, which are often utilised by industrial and labour economists.

- Turnover and employment are derived from administrative sources, not inferred. This may be useful when examining smaller organisations which are infrequently targeted by other ONS surveys, such as the Annual Business Inquiry.
- Possibilities for detailed spatial analysis.

Box 4 provides a brief description of two completed projects using the BSD at the VML.

Current research using the BSD includes analysis of growth rates in Northern Ireland, and turnover analysis of ‘creative’ industries.

In addition, many researchers use information from the BSD to extend sample size and therefore coverage of business organisations included in other ONS business surveys. An example is linking the BSD to the E-commerce Survey – businesses included in the latter may serve as a counterfactual when examining turnover in the BSD.

Future work on the BSD

It may be possible to define and trace ‘demographic events’ experienced by organisations throughout time. Based upon Eurostat guidelines (see European Commission (2003)), these include:

- takeovers
- mergers
- change of ownership
- break-ups

Preliminary work has already been undertaken in this area. For example, using a combination of enterprise references and enterprise group references, the case where an enterprise changes its enterprise group reference number from one period to the next may infer that the enterprise has become part of a new enterprise group (i.e. either because of a takeover or merger). The ability to implement the Eurostat methodology is currently being examined.

It may be possible to extend coverage of the BSD backwards in time, by linking observations to the Annual Respondents Database (ARD) which is primarily formed from the ABI. Such an exercise ought to allow a selected number of enterprises in the BSD which are also in the ARD to be traced back to the early 1990s and beyond.

Box 4

Research using the BSD at the VML

Foreman-Peck J and Nicholls T (2008) ‘Mergers and movement: periphery and the impact of SME takeovers’

This research examines whether takeovers of small and medium-sized enterprises (SME) by larger organisations leads to an increase in productivity. Takeovers and mergers can potentially be identified in the BSD by examining changes to links between organisations. The authors found that takeovers do not lead to an increase in productivity, post acquisition.

Hijzen A, Upward R and Wright P (2008) ‘Job creation, job destruction and the role of small firms: firm-level evidence for the UK’

Pioneering research estimating the quantity of jobs created and ‘destroyed’ by different types of business organisations from 1997 to 2007 (this research is currently being updated with the latest data), and reasons to explain the magnitudes of these rates. For example, analyses are undertaken by business size, exposure to international competition, and the role of job relocation.

Final remarks

The BSD has been created to allow VML users access to IDBR data for the purpose of research. The data can accurately depict the life-span of enterprises, and also the local units associated with an enterprise. Furthermore, changes to company structure can be analysed.

The inclusion of IDBR reference numbers on each observation allows the potential for linking to other data sources held in the secure environment of the VML. This is designed to create new opportunities for research, and increase the impact of research using ONS data.

Notes

1. This work contains statistical data from ONS which is Crown copyright and reproduced with the permission of the controller of HMSO and Queen's Printer for Scotland. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

We would like to thank Andrew Allen at the IDBR team for helpful advice on the IDBR and continued support to the VML, and also Dr Felix Ritchie, ONS, Rhys Davies and Robert Gilhooly (both formerly of the ONS) for guidance.

2. Comprehensive information about the IDBR may be obtained from:
www.statistics.gov.uk/idbr
3. Detailed information about the data sets held in the VML can be found at:
www.ons.gov.uk/about/who-we-are/our-services/vml/about-the-vml/datasets-available/dataset-downloads/index.html
4. Contact the MAUS team at:
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Key time series

1 National accounts aggregates

Last updated: 22/05/09

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
2003	1,139,746	1,015,008	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004	1,200,595	1,068,574	105.3	105.3	102.8	102.8	102.7	102.5	102.5
2005	1,252,505	1,115,121	109.9	109.9	104.2	104.9	104.9	104.8	104.7
2006	1,321,860	1,177,232	116.0	116.0	106.1	107.8	107.9	107.5	107.5
2007	1,400,526	1,247,379	122.9	122.9	110.6	111.1	111.1	110.6	110.6
2008	1,442,921	1,294,279	126.6	127.5	112.7	111.9	111.9	113.1	113.9
2003 Q1	278,207	247,866	97.6	97.7	99.4	98.7	98.7	98.9	98.9
2003 Q2	283,305	252,613	99.4	99.6	99.2	99.6	99.6	99.8	99.9
2003 Q3	287,130	255,626	100.8	100.7	99.8	100.4	100.3	100.4	100.4
2003 Q4	291,104	258,903	102.2	102.0	101.6	101.3	101.3	100.8	100.7
2004 Q1	293,234	260,813	102.9	102.8	101.8	101.8	101.7	101.1	101.1
2004 Q2	299,120	266,134	105.0	104.9	102.5	102.7	102.7	102.2	102.1
2004 Q3	301,608	268,390	105.9	105.8	102.2	102.9	102.9	102.8	102.8
2004 Q4	306,633	273,237	107.6	107.7	104.5	103.6	103.6	103.9	103.9
2005 Q1	308,895	274,979	108.4	108.4	104.2	104.0	104.0	104.2	104.2
2005 Q2	313,126	278,928	109.9	109.9	105.6	104.7	104.7	105.0	104.9
2005 Q3	313,026	278,181	109.9	109.6	103.3	105.1	105.1	104.5	104.3
2005 Q4	317,458	283,033	111.4	111.5	103.9	105.6	105.7	105.5	105.5
2006 Q1	324,523	289,466	113.9	114.1	105.2	106.8	106.9	106.6	106.7
2006 Q2	326,609	290,681	114.6	114.6	106.1	107.6	107.7	106.6	106.4
2006 Q3	332,954	296,264	116.9	116.8	106.4	108.0	108.1	108.2	108.0
2006 Q4	337,774	300,821	118.5	118.5	106.9	109.0	109.0	108.8	108.7
2007 Q1	343,008	304,938	120.4	120.2	108.6	109.9	109.9	109.6	109.3
2007 Q2	347,805	309,636	122.1	122.0	109.7	110.7	110.7	110.2	110.3
2007 Q3	352,134	313,617	123.6	123.6	110.4	111.4	111.4	110.9	110.9
2007 Q4	357,579	319,188	125.5	125.8	113.6	112.4	112.4	111.6	112.0
2008 Q1	361,000	322,289	126.7	127.0	114.6	112.8	112.8	112.4	112.6
2008 Q2	363,122	323,830	127.4	127.6	114.0	112.7	112.8	113.1	113.2
2008 Q3	361,247	324,742	126.8	128.0	112.4	111.9	112.0	113.3	114.3
2008 Q4	357,552	323,418	125.5	127.5	109.9	110.2	110.2	113.9	115.7
2009 Q1	352,176	319,800	123.6	126.0		108.1	108.1	114.3	116.6

Percentage change, quarter on corresponding quarter of previous year

	IHYO	ABML ⁴	YBGO ⁴	IHYR	ABMM ⁴	IHYU	ABML/ABMM ⁴
2003 Q1	5.4	5.6	3.5	2.3	2.3	3.0	3.3
2003 Q2	5.9	6.1	3.1	2.8	2.9	3.0	3.1
2003 Q3	6.1	6.1	1.7	2.9	2.9	3.1	3.1
2003 Q4	6.4	6.3	3.6	3.2	3.3	3.1	3.0
2004 Q1	5.4	5.2	2.5	3.1	3.0	2.2	2.2
2004 Q2	5.6	5.4	3.4	3.1	3.1	2.4	2.2
2004 Q3	5.0	5.0	2.4	2.5	2.6	2.4	2.4
2004 Q4	5.3	5.5	2.9	2.3	2.3	3.0	3.2
2005 Q1	5.3	5.4	2.3	2.2	2.3	3.0	3.1
2005 Q2	4.7	4.8	3.0	1.9	2.0	2.7	2.7
2005 Q3	3.8	3.6	1.1	2.1	2.2	1.6	1.4
2005 Q4	3.5	3.6	-0.6	2.0	2.0	1.5	1.5
2006 Q1	5.1	5.3	1.0	2.7	2.8	2.3	2.4
2006 Q2	4.3	4.2	0.5	2.7	2.8	1.5	1.4
2006 Q3	6.4	6.5	3.0	2.8	2.8	3.5	3.6
2006 Q4	6.4	6.3	2.9	3.2	3.1	3.1	3.0
2007 Q1	5.7	5.3	3.2	2.9	2.8	2.8	2.5
2007 Q2	6.5	6.5	3.4	3.0	2.8	3.4	3.6
2007 Q3	5.8	5.9	3.7	3.1	3.1	2.6	2.7
2007 Q4	5.9	6.1	6.3	3.1	3.0	2.6	3.0
2008 Q1	5.2	5.7	5.5	2.6	2.6	2.6	3.0
2008 Q2	4.4	4.6	3.9	1.8	1.9	2.6	2.6
2008 Q3	2.6	3.5	1.8	0.4	0.5	2.1	3.1
2008 Q4	0.0	1.3	-3.3	-2.0	-1.9	2.0	3.3
2009 Q1	-2.4	-0.8		-4.1	-4.2	1.8	3.5

Notes:

- 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 Derived from these identification (CDID) codes.

Source: Office for National Statistics

2 Gross domestic product: by category of expenditure

Last updated: 22/05/09

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

	Domestic expenditure on goods and services at market prices											Gross domestic at product market prices
	Final consumption expenditure			Gross capital formation				Exports of goods and services	Gross final expenditure	less imports of goods and services	Statistical discrepancy (expenditure)	
	Households	Non-profit institutions¹	General government	Gross fixed capital formation	Changes in inventories²	Acquisitions less disposals of valuables	Total					
	ABJR	HAYO	NMRY	NPQT	CAFU	NPJR	YBIM	IKBK	ABMG	IKBL	GIXS	ABMI
2003	714,608	27,668	232,819	186,700	3,983	-37	1,165,741	290,677	1,456,418	316,672	0	1,139,746
2004	736,857	27,198	240,672	195,782	4,371	-42	1,204,838	304,699	1,509,537	338,359	0	1,171,178
2005	751,288	27,212	244,850	200,187	4,814	-354	1,227,997	329,491	1,557,487	362,211	0	1,195,276
2006	766,378	28,289	248,776	212,146	4,575	290	1,260,454	365,818	1,626,272	397,076	0	1,229,196
2007	789,682	29,485	252,514	226,469	6,561	535	1,305,134	350,660	1,655,794	391,090	1,643	1,266,347
2008	800,541	29,802	261,206	219,524	1,812	1,231	1,313,298	350,937	1,664,235	388,933	-3	1,275,299
2003 Q1	176,080	6,949	57,130	46,805	-647	-8	286,469	73,942	360,416	79,207	0	281,208
2003 Q2	178,451	6,889	57,711	46,131	190	94	289,609	71,934	361,538	77,711	0	283,851
2003 Q3	179,545	6,913	58,472	45,964	2,065	-68	292,894	71,671	364,561	78,577	0	285,990
2003 Q4	180,532	6,917	59,506	47,800	2,375	-55	296,769	73,130	369,903	81,177	0	288,697
2004 Q1	182,394	6,950	60,023	48,869	-684	112	297,664	74,062	371,726	81,742	0	289,984
2004 Q2	184,099	6,823	59,806	49,385	603	-90	300,625	75,645	376,270	83,564	0	292,706
2004 Q3	184,893	6,760	60,210	49,061	936	-96	301,763	76,739	378,502	85,230	0	293,272
2004 Q4	185,471	6,665	60,633	48,467	3,516	32	304,786	78,253	383,039	87,823	0	295,216
2005 Q1	186,342	6,867	60,787	48,845	3,151	-158	305,833	77,173	383,006	86,553	0	296,453
2005 Q2	187,191	6,806	61,208	49,264	1,895	86	306,448	80,809	387,257	88,955	0	298,302
2005 Q3	188,172	6,784	61,370	51,286	187	-201	307,597	84,033	391,629	92,100	0	299,529
2005 Q4	189,583	6,755	61,485	50,792	-419	-81	308,119	87,476	395,595	94,603	0	300,992
2006 Q1	189,581	6,945	61,989	50,715	1,593	101	310,924	96,005	406,929	102,518	0	304,412
2006 Q2	192,015	7,037	61,854	52,139	-153	229	313,121	98,339	411,460	105,003	0	306,456
2006 Q3	191,988	7,120	62,329	53,681	1,844	-28	316,934	85,722	402,656	94,804	0	307,853
2006 Q4	192,794	7,187	62,604	55,611	1,291	-12	319,475	85,752	405,227	94,751	0	310,475
2007 Q1	194,438	7,291	62,674	56,220	1,595	73	322,382	86,402	408,784	96,087	382	313,079
2007 Q2	196,524	7,324	62,910	56,000	655	329	323,503	86,804	410,308	95,238	435	315,505
2007 Q3	198,871	7,388	63,388	56,170	2,086	44	328,082	88,663	416,745	99,717	438	317,466
2007 Q4	199,849	7,482	63,542	58,079	2,225	89	331,167	88,791	419,957	100,048	388	320,297
2008 Q1	201,435	7,400	64,324	56,104	1,136	202	331,466	89,559	421,025	99,831	90	321,284
2008 Q2	200,690	7,413	65,034	55,772	1,835	415	331,392	88,174	419,566	98,390	12	321,188
2008 Q3	200,252	7,455	65,490	54,200	1,440	348	328,825	88,343	417,167	98,240	-40	318,888
2008 Q4	198,164	7,534	66,358	53,448	-2,599	266	321,615	84,861	406,477	92,472	-65	313,939
2009 Q1	195,789	7,334	66,553	51,442		241	315,338	79,725	395,063	87,052	-2	308,000

Percentage change, quarter on corresponding quarter of previous year

	IHYR										
2003 Q1	2.6	1.1	2.4	5.0			2.2	4.6	2.7	4.2	2.3
2003 Q2	3.3	0.3	2.5	1.1			2.7	-1.1	1.9	-1.2	2.8
2003 Q3	3.3	0.1	3.6	-1.0			3.1	-0.8	2.3	0.3	2.9
2003 Q4	3.2	-0.2	5.5	-0.6			3.5	4.8	3.7	5.5	3.2
2004 Q1	3.6	0.0	5.1	4.4			3.9	0.2	3.1	3.2	3.1
2004 Q2	3.2	-1.0	3.6	7.1			3.8	5.2	4.1	7.5	3.1
2004 Q3	3.0	-2.2	3.0	6.7			3.0	7.1	3.8	8.5	2.5
2004 Q4	2.7	-3.6	1.9	1.4			2.7	7.0	3.6	8.2	2.3
2005 Q1	2.2	-1.2	1.3	0.0			2.7	4.2	3.0	5.9	2.2
2005 Q2	1.7	-0.2	2.3	-0.2			1.9	6.8	2.9	6.5	1.9
2005 Q3	1.8	0.4	1.9	4.5			1.9	9.5	3.5	8.1	2.1
2005 Q4	2.2	1.4	1.4	4.8			1.1	11.8	3.3	7.7	2.0
2006 Q1	1.7	1.1	2.0	3.8			1.7	24.4	6.2	18.4	2.7
2006 Q2	2.6	3.4	1.1	5.8			2.2	21.7	6.2	18.0	2.7
2006 Q3	2.0	5.0	1.6	4.7			3.0	2.0	2.8	2.9	2.8
2006 Q4	1.7	6.4	1.8	9.5			3.7	-2.0	2.4	0.2	3.2
2007 Q1	2.6	5.0	1.1	10.9			3.7	-10.0	0.5	-6.3	2.8
2007 Q2	2.3	4.1	1.7	7.4			3.3	-11.7	-0.3	-9.3	3.0
2007 Q3	3.6	3.8	1.7	4.6			3.5	3.4	3.5	5.2	3.1
2007 Q4	3.7	4.1	1.5	4.4			3.7	3.5	3.6	5.6	3.2
2008 Q1	3.6	1.5	2.6	-0.2			2.8	3.7	3.0	3.9	2.6
2008 Q2	2.1	1.2	3.4	-0.4			2.4	1.6	2.3	3.3	1.8
2008 Q3	0.7	0.9	3.3	-3.5			0.2	-0.4	0.1	-1.5	0.4
2008 Q4	-0.8	0.7	4.4	-8.0			-2.9	-4.4	-3.2	-7.6	-2.0
2009 Q1	-2.8	-0.9	3.5	-8.3			-4.9	-11.0	-6.2	-12.8	-4.1

Notes:

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

Source: Office for National Statistics

3 Labour market summary

Last updated: 12/05/09

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
Jan-Mar 2007	48,519	30,763	29,059	1,704	17,756	63.4	59.9	5.5	36.6
Jan-Mar 2008	48,911	31,123	29,499	1,624	17,788	63.6	60.3	5.2	36.4
Apr-Jun 2008	49,007	31,190	29,505	1,685	17,816	63.6	60.2	5.4	36.4
Jul-Sep 2008	49,107	31,232	29,407	1,825	17,876	63.6	59.9	5.8	36.4
Oct-Dec 2008	49,210	31,333	29,361	1,971	17,877	63.7	59.7	6.3	36.3
Jan-Mar 2009	49,312	31,419	29,204	2,215	17,893	63.7	59.2	7.1	36.3
Male	MGSM	MGSG	MGSA	MGSD	MGSJ	MGWH	MGSS	MGSY	YBTD
Jan-Mar 2007	23,582	16,702	15,725	977	6,881	70.8	66.7	5.8	29.2
Jan-Mar 2008	23,807	16,890	15,948	942	6,917	70.9	67.0	5.6	29.1
Apr-Jun 2008	23,862	16,928	15,938	990	6,934	70.9	66.8	5.8	29.1
Jul-Sep 2008	23,919	16,937	15,862	1,075	6,982	70.8	66.3	6.3	29.2
Oct-Dec 2008	23,976	17,010	15,829	1,181	6,966	70.9	66.0	6.9	29.1
Jan-Mar 2009	24,033	17,041	15,706	1,336	6,992	70.9	65.3	7.8	29.1
Female	MGSN	MGSH	MGSB	MGSE	MGSK	MGWI	MGST	MGSZ	YBTE
Jan-Mar 2007	24,937	14,061	13,334	727	10,876	56.4	53.5	5.2	43.6
Jan-Mar 2008	25,104	14,233	13,552	681	10,870	56.7	54.0	4.8	43.3
Apr-Jun 2008	25,144	14,262	13,568	695	10,882	56.7	54.0	4.9	43.3
Jul-Sep 2008	25,188	14,295	13,545	750	10,894	56.8	53.8	5.2	43.2
Oct-Dec 2008	25,234	14,322	13,532	790	10,911	56.8	53.6	5.5	43.2
Jan-Mar 2009	25,279	14,378	13,499	880	10,901	56.9	53.4	6.1	43.1
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
Jan-Mar 2007	37,495	29,541	27,861	1,679	7,955	78.8	74.3	5.7	21.2
Jan-Mar 2008	37,674	29,802	28,199	1,604	7,871	79.1	74.8	5.4	20.9
Apr-Jun 2008	37,716	29,844	28,182	1,662	7,872	79.1	74.7	5.6	20.9
Jul-Sep 2008	37,765	29,878	28,082	1,796	7,887	79.1	74.4	6.0	20.9
Oct-Dec 2008	37,816	29,958	28,018	1,940	7,858	79.2	74.1	6.5	20.8
Jan-Mar 2009	37,867	30,039	27,857	2,182	7,828	79.3	73.6	7.3	20.7
Male	YBTG	YBSL	YBSF	YBSI	YBSO	MGSP	MGSV	YBTJ	YBTM
Jan-Mar 2007	19,489	16,296	15,329	967	3,193	83.6	78.7	5.9	16.4
Jan-Mar 2008	19,638	16,441	15,508	933	3,197	83.7	79.0	5.7	16.3
Apr-Jun 2008	19,672	16,472	15,492	980	3,200	83.7	78.8	5.9	16.3
Jul-Sep 2008	19,705	16,484	15,424	1,060	3,221	83.7	78.3	6.4	16.3
Oct-Dec 2008	19,737	16,550	15,382	1,168	3,187	83.9	77.9	7.1	16.1
Jan-Mar 2009	19,770	16,591	15,270	1,321	3,178	83.9	77.2	8.0	16.1
Female	YBTH	YBSM	YBSG	YBSJ	YBSP	MGSQ	MGSW	YBTK	YBTN
Jan-Mar 2007	18,006	13,245	12,532	712	4,761	73.6	69.6	5.4	26.4
Jan-Mar 2008	18,036	13,362	12,690	671	4,674	74.1	70.4	5.0	25.9
Apr-Jun 2008	18,044	13,372	12,690	683	4,672	74.1	70.3	5.1	25.9
Jul-Sep 2008	18,060	13,394	12,658	736	4,665	74.2	70.1	5.5	25.8
Oct-Dec 2008	18,079	13,408	12,636	772	4,671	74.2	69.9	5.8	25.8
Jan-Mar 2009	18,098	13,447	12,587	861	4,650	74.3	69.6	6.4	25.7

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
 The Labour Force Survey is a survey of the population of private households, student halls of residence and NHS accommodation.

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

4 Prices

Last updated: 19/05/09

Percentage change over 12 months

Not seasonally adjusted

	Consumer prices						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	PLLV ^{3,4}	RNNK ^{3,4}	RNNQ ^{3,4}
2005 Jan	1.6	1.7	1.5	3.2	2.1	2.0	1.4	0.9	7.6	5.4
2005 Feb	1.7	1.7	1.6	3.2	2.1	2.0	1.6	0.9	9.0	6.3
2005 Mar	1.9	2.0	1.8	3.2	2.4	2.3	1.8	1.0	9.3	5.8
2005 Apr	1.9	2.0	1.9	3.2	2.3	2.3	2.3	1.1	8.6	5.4
2005 May	1.9	2.0	1.8	2.9	2.1	2.2	1.6	1.0	6.2	4.6
2005 Jun	2.0	2.2	1.9	2.9	2.2	2.2	1.5	0.8	10.6	5.9
2005 Jul	2.3	2.5	2.3	2.9	2.4	2.5	2.0	1.0	13.3	7.6
2005 Aug	2.4	2.6	2.3	2.8	2.3	2.3	2.1	0.9	12.1	6.7
2005 Sep	2.5	2.6	2.4	2.7	2.5	2.5	2.3	0.9	9.3	4.9
2005 Oct	2.3	2.5	2.3	2.5	2.4	2.3	1.8	0.5	8.2	5.6
2005 Nov	2.1	2.3	2.1	2.4	2.3	2.3	1.5	0.5	13.6	8.8
2005 Dec	1.9	2.1	1.8	2.2	2.0	2.0	1.9	1.1	18.0	11.4
2006 Jan	1.9	2.1	1.9	2.4	2.3	2.3	2.5	1.4	15.8	10.1
2006 Feb	2.0	2.1	2.0	2.4	2.3	2.3	2.3	1.4	15.2	10.1
2006 Mar	1.8	1.9	1.7	2.4	2.1	2.2	2.2	1.5	13.1	9.2
2006 Apr	2.0	2.1	2.0	2.6	2.4	2.3	2.3	1.9	15.6	9.8
2006 May	2.2	2.3	2.2	3.0	2.9	2.8	2.9	2.0	13.7	8.4
2006 Jun	2.5	2.6	2.4	3.3	3.1	3.2	3.1	2.5	11.3	8.1
2006 Jul	2.4	2.4	2.3	3.3	3.1	3.2	2.6	2.1	10.6	7.7
2006 Aug	2.5	2.6	2.4	3.4	3.3	3.4	2.3	1.7	8.4	6.7
2006 Sep	2.4	2.6	2.3	3.6	3.2	3.3	1.6	1.7	5.4	5.5
2006 Oct	2.4	2.7	2.3	3.7	3.2	3.3	1.3	2.0	3.9	4.5
2006 Nov	2.7	3.0	2.6	3.9	3.4	3.6	1.4	1.9	2.3	2.8
2006 Dec	3.0	3.2	2.9	4.4	3.8	3.9	1.7	1.6	1.7	1.5
2007 Jan	2.7	2.9	2.6	4.2	3.5	3.7	1.5	1.6	-3.4	-0.5
2007 Feb	2.8	2.9	2.6	4.6	3.7	3.9	1.9	2.0	-2.1	-0.2
2007 Mar	3.1	3.1	2.9	4.8	3.9	4.0	2.2	2.2	-0.3	1.0
2007 Apr	2.8	2.9	2.6	4.5	3.6	3.7	1.8	1.8	-1.5	0.0
2007 May	2.5	2.6	2.3	4.3	3.3	3.4	1.9	1.9	0.6	1.9
2007 Jun	2.4	2.5	2.2	4.4	3.3	3.3	1.9	1.7	1.7	2.2
2007 Jul	1.9	2.0	1.7	3.8	2.7	2.6	2.0	1.8	0.3	0.6
2007 Aug	1.8	1.9	1.6	4.1	2.7	2.6	2.1	2.0	-0.2	1.0
2007 Sep	1.8	1.7	1.6	3.9	2.8	2.8	2.6	1.9	6.0	3.6
2007 Oct	2.1	1.9	1.8	4.2	3.1	3.0	3.6	1.8	9.4	4.6
2007 Nov	2.1	1.9	1.8	4.3	3.2	3.0	4.5	1.9	12.1	5.6
2007 Dec	2.1	2.0	1.9	4.0	3.1	3.1	4.7	2.2	13.2	6.9
2008 Jan	2.2	2.1	2.0	4.1	3.4	3.3	5.7	3.0	20.4	11.0
2008 Feb	2.5	2.5	2.3	4.1	3.7	3.6	5.7	2.8	20.9	11.9
2008 Mar	2.5	2.6	2.3	3.8	3.5	3.6	6.2	2.9	20.8	12.7
2008 Apr	3.0	3.0	2.7	4.2	4.0	3.9	7.4	4.1	25.3	16.6
2008 May	3.3	3.3	3.1	4.3	4.4	4.4	9.1	5.6	30.2	18.9
2008 Jun	3.8	3.9	3.6	4.6	4.8	4.9	9.8	5.9	34.1	21.1
2008 Jul	4.4	4.5	4.2	5.0	5.3	5.4	10.0	6.3	31.3	21.3
2008 Aug	4.7	4.9	4.5	4.8	5.2	5.4	9.1	5.7	29.0	20.8
2008 Sep	5.2	5.4	5.0	5.0	5.5	5.6	8.5	5.6	24.1	19.5
2008 Oct	4.5	4.7	4.3	4.2	4.7	4.9	6.7	5.0	16.0	16.9
2008 Nov	4.1	4.3	3.9	3.0	3.9	3.9	5.0	5.0	8.1	14.1
2008 Dec	3.1	4.6	4.1	0.9	2.8	3.9	4.6	5.0	3.2	12.6
2009 Jan	3.0	4.5	4.1	0.1	2.4	3.4	3.5	4.1	1.7	10.9
2009 Feb	3.2	4.6	4.2	0.0	2.5	3.5	3.0	3.8	0.7	8.9
2009 Mar	2.9	4.3	3.9	-0.4	2.2	3.2	2.0	3.2	-0.4	7.6
2009 Apr	2.3	3.8	3.4	-1.2	1.7	2.7	1.2	2.4	-5.0	3.3

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.

4 These derived series replace those previously shown.

NOTES TO TABLES

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, whether working or not working, who reported that they had been made redundant or taken voluntary redundancy in the month of the reference week or in the two calendar months prior to this.

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 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. The old *Economic Trends* tables are no longer being updated with effect from January 2009.

Weblink: www.statistics.gov.uk/elmr/06_09/data_page.asp

Title	Frequency of update
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 ¹	Q
1.14 Private non-financial corporations: secondary distribution of income account and capital account ¹	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/06_09/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 ¹	M
4.04	Indicators of fixed investment in dwellings	M
4.05	Number of property transactions	M
4.06	Change in inventories ¹	Q
4.07	Inventory ratios ¹	Q
4.08	Retail sales, new registrations of cars and credit business	M
4.09	Inland energy consumption: primary fuel input basis ¹	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 ¹	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
6.12	Average Earnings Index by industry: excluding and including bonuses	M

Weblink: www.statistics.gov.uk/elmr/06_09/data_page.asp

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:

1 These tables, though still accessible, are no longer being updated.

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 456120

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 456776

Total workforce hours worked per week

☎ 01633 456720
✉ productivity@ons.gsi.gov.uk

Workforce jobs series – short-term estimates

☎ 01633 456776
✉ workforce.jobs@ons.gsi.gov.uk

Labour costs

☎ 01633 819024

Labour disputes

☎ 01633 456721

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 456720

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

☎ 01633 455070

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
☎ 01329 813054

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 978-0-230-52583-2. Price £47.50.

www.statistics.gov.uk/StatBase/Product.asp?vlnk=4861

Foreign Direct Investment (MA4)

2007 edition

www.statistics.gov.uk/StatBase/Product.asp?vlnk=9614

Input-Output analyses for the United Kingdom

2006 edition

www.statistics.gov.uk/StatBase/Product.asp?vlnk=7640

Research and development in UK businesses (MA14)

2006 edition

www.statistics.gov.uk/StatBase/Product.asp?vlnk=165

Share Ownership

2006 edition

www.statistics.gov.uk/StatBase/Product.asp?vlnk=930

United Kingdom Balance of Payments (Pink Book)

2008 edition. Palgrave Macmillan, ISBN 978-0-230-54565-6. Price £49.50.

www.statistics.gov.uk/StatBase/Product.asp?vlnk=1140

United Kingdom National Accounts (Blue Book)

2008 edition. Palgrave Macmillan, ISBN 978-0-230-54566-3. Price £49.50.

www.statistics.gov.uk/StatBase/Product.asp?vlnk=1143

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

2008 quarter 4

www.statistics.gov.uk/StatBase/Product.asp?vlnk=242

United Kingdom Economic Accounts

2008 quarter 4. Palgrave Macmillan, ISBN 978-0-230-57713-8. Price £37.50.

www.statistics.gov.uk/StatBase/Product.asp?vlnk=1904

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

2008 quarter 4

www.statistics.gov.uk/StatBase/Product.asp?vlnk=731

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

May 2009. Palgrave Macmillan, ISBN 978-0-230-57711-4. Price £50.00.

www.statistics.gov.uk/StatBase/Product.asp?vlnk=376

Focus on Consumer Price Indices

April 2009

www.statistics.gov.uk/StatBase/Product.asp?vlnk=867

Monthly review of external trade statistics (MM24)

March 2009

www.statistics.gov.uk/StatBase/Product.asp?vlnk=613

Producer Price Indices (MM22)

April 2009

www.statistics.gov.uk/StatBase/Product.asp?vlnk=2208

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/StatBase/Product.asp?vlnk=14315

National Accounts Concepts, Sources and Methods

www.statistics.gov.uk/StatBase/Product.asp?vlnk=1144

Sector classification guide (MA23)

www.statistics.gov.uk/StatBase/Product.asp?vlnk=7163

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Francis Jones, Daniel Annan and Saef Shah

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William Barnes, Geoff Bright and Colin Hewat

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Joe Robjohns and Damian Whittard

Introducing the new business demography statistics
Karen Grierson and Andrew Allen

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Marilyn Thomas and Sally-Ann Aubrey-Smith

Rebasing the services producer price index
Terry Bradley

Methods explained: cost-benefit analysis
Barry Williams

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Karen Dunnell

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Francis Jones, Daniel Annan and Saef Shah

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Mavis Anagboso and Alison Spence

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Gavin Wallis and Alex Turvey

Quality-adjusted labour input: estimates for 1997 to 2007
Peter Goodridge

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Services producer price index (experimental) – third quarter 2008
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Gareth Clancy

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Katherine Kent

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Debra Leaker

Economic inactivity
Debra Leaker

Labour costs
Sarah Conn

Regional economic indicators, A focus on enterprise – driving regional productivity
Birgit Wosnitza, Keith Tyrrell and Jonathan Knight

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Mavis Anagboso

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Clive Dobbs

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Alex Turvey

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Gareth Clancy

Incorporating equality considerations into measures of public service output
Richard Jones and Andrew Rowlinson

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Graeme Chamberlin

APRIL 2009

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Catherine Barham, Annette Walling, Gareth Clancy, Stephen Hicks and Sarah Conn

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Kamran Khan

CPI and RPI: the 2009 basket of goods and services
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Revisions to quarterly GDP growth and its components
Jason Murphy

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Kato Kimbugwe, Rhys Lewis and Nicola James

Services producer price index (experimental) – fourth quarter 2008
Ian Richardson

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Katherine Kent

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Anna Downs

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David Matthews and Andrew Taylor

Firm-level estimates of capital stock and productivity
Bob Gilhooly

Regional gross value added
Jayne White

Regional economic indicators with a focus on household income
Alex Turvey, Jonathan Knight and Birgit Wosnitza

Future articles

List is provisional and subject to change.

JULY 2009

Special edition on 'Measuring the economy and the financial crisis'.