

Economic & Labour Market Review

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In brief

Investigating amenable mortality as an indicator of healthcare quality

In 2008 the UK Centre for the Measurement of Government Activity (UKCeMGA) suggested that research should be undertaken into whether amenable mortality – deaths considered avoidable due to medical intervention – could be used as an indicator of healthcare quality. A review of the literature concludes that there is insufficient evidence on how much of the decline in amenable mortality can be attributed to the healthcare system. Therefore it is premature to include amenable mortality in UKCeMGA's healthcare output calculations.

UKCeMGA is responsible for producing estimates of public service output and productivity – and therefore publishes these measure for healthcare in the UK. Healthcare output is measured using healthcare activity and adjusted for quality using the following indicators:

- short-term survival and health gain following treatment in hospital, including health effects of shorter waiting time
- outcomes from primary medical care
- assessment of patient experience

In recent decades the rate of amenable mortality in the UK has fallen. In England and Wales the age-standardised mortality rate for all causes considered amenable to medical intervention fell by around 43 per cent for men and 38 per cent for women between 1993 and 2005. Research conducted by the Department of Health on quality adjustments to healthcare output in 2007 estimated that if the entire decline in amenable mortality was attributed to the National Health Service (NHS), and each life saved was valued at £30,000, then between 2000 and 2005 the output of the NHS would have increased by £2.9 billion. However, it was noted that: there is no evidence that the decline in amenable mortality can be attributed entirely to the NHS and care must be taken to avoid double counting other NHS activity or quality improvements.

Furthermore, it is recognised that there are a wide range of socio-economic influences on health outcomes.

Further information

<http://www.statistics.gov.uk/CCI/article.asp?ID=2397>

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Measuring outcomes for public service users

The Measuring Outcomes for Public Service Users (MOPSU) project is a three year research project to develop new, and examine existing measures, of the outcomes of particular public services. The project is funded by HM Treasury (HMT) under the Invest to Save Budget (ISB) and led by the UK Centre for the Measurement of Government Activity (UKCeMGA) at the Office for National Statistics in association with three partner organisations:

- the Personal Social Services Research Unit (PSSRU) at the University of Kent
- the National Institute for Economic and Social Research (NIESR)
- National Council for Voluntary Organisations (NCVO)

The MOPSU project consists of three main strands of work, all working towards the overall aims of:

- more efficient and effective commissioning and procurement of services, placing the issues of quality and value for money at the heart of the decision making process
- encouraging the use of outcomes measures to assess the impact of services on their users, across the spectrum of providers
- examining the extent to which the third sector is involved in public service delivery and helping to alleviate barriers to entry and third sector organisations

The project will report in June 2010.

Further information

www.ons.gov.uk/about-statistics/ukcemga/index.html

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Pension Trends update

On 9 April 2010 the Office for National Statistics published two updated chapters of Pension Trends, Chapter 2: Population Change and Chapter 8: Pension Contributions. Chapter 2 shows that as the UK population ages, the old age dependency ratio – which measures the number of people of State Pension Age (SPA) and over for every 1,000 people of working age – is projected to rise. The ratio was steady at around 300 from the mid-1970s to 2006, but reached 310 in 2008 and, in the absence of any increases in SPA, would be expected to reach 495 by 2051. With the increases in SPA which are due to take place between 2010 and 2046 under current legislation, the old age dependency ratio is expected to be 343 in 2051.

Chapter 8 shows that total contributions to private (non-state) pension schemes fell at the start of the recession, from £86 billion in 2007 to £82 billion in 2008. The fall was driven by a decrease in employer contributions to funded occupational pension schemes, which fell from £37 billion in 2007 to £33 billion in 2008, as company finances came under pressure due to the recession. Employer contributions to personal pensions and to unfunded (public sector) occupational pension schemes rose in 2008, but not enough to prevent a drop in total contributions.

Further information

www.statistics.gov.uk/pensiontrends/

Contact

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UPDATES

Updates to statistics on www.statistics.gov.uk

7 April

Corporate profitability

11.6% in Q4 2009

www.statistics.gov.uk/cci/nugget.asp?id=196

8 April

Index of production

February shows 0.1% annual fall

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

9 April

Producer prices

Factory gate inflation rises 5.0%

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

13 April

UK Trade

Deficit narrowed to £2.1 billion in February

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

15 April

Travel and tourism

Visits to the UK continue to rise

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

20 April

Inflation

March 2010: CPI inflation 3.4%, RPI

inflation 4.4%

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

21 April

Average weekly earnings

Regular pay growth increases

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

Employment

Employment rate falls to 72.1%

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

22 April

Retail sales

Mixed picture in March

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

Public sector finances

Monthly: £14.8 billion budget deficit

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

23 April

Index of services

0.1% annual rise into February

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

GDP growth

UK output increases by 0.2% in Q1 2010

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

FORTHCOMING RELEASES

Future statistical releases on www.statistics.gov.uk

7 May

Producer price index – April 2010

11 May

Index of production – March 2010

12 May

Labour market statistics – May 2010**Average weekly earnings – May 2010**

13 May

UK Trade – March 2010**Overseas travel and tourism – March 2010**

14 May

Pension Trends – Chapter 1: Pensions legislation – an overview**Pension Trends – Chapter 7: Pension scheme membership**

18 May

Consumer price indices – April 2010

19 May

Average earnings index – March 2010**Turnover and orders in production and services industries – March 2010**

20 May

Retail sales – April 2010**Business investment – Q1 2010 provisional results**

21 May

Public sector finances – April 2010**Financial statistics – May 2010**

25 May

Index of services – March 2010**UK output, income and expenditure – Q1 2010**

26 May

Services producer price index – Q1 2010

2 June

Mergers and acquisitions involving UK companies – Q1 2010

8 June

Regional Trends – 42

Economic review

May 2010

Graeme Chamberlin
Office for National Statistics

Monitoring the coherence between ONS and PMI data – an update

A number of business groups and trade associations also provide indicators of UK economic activity. Although these are usually more qualitative and based on smaller samples than official data, they are viewed by many as useful and timely indicators.

Purchasing Managers' Index (PMI) data are among the most prominent and widely used business surveys. For example, the Bank of England have stated that they place some emphasis on these surveys in forming their short-term view of the economy (see Ashley et al 2005 and Cunningham and Jeffery 2007).

Growing interest in this survey prompted ONS to investigate the coherence between PMI and National Accounts data, more specifically the monthly Index of Manufacturing and the monthly Index of Services. This analysis was first published in the appendix of Meader and Tily (2008) and a fuller description in Chamberlin (2008). A brief update of this work is now presented here.

PMI data is published by Markit Economics on behalf of the Chartered Institute of Purchasing and Supply (CIPS). Individual surveys for the manufacturing, construction and services sectors are published monthly. Although the indicators are very rapid, being published immediately after the reference quarter compared to 23-25 days for the Preliminary GDP estimate, there are trade-offs in terms of sample sizes and detail.

The UK Manufacturing PMI is collected from a representative panel of around 600 companies. For construction the PMI sample size is 170 companies in the UK construction sector. And for the Services PMI, a monthly report is collected from around 700 companies. Each of these sample sizes are substantially smaller than the monthly surveys administered by ONS for the Index of Manufacturing (Production) and the Index of Services. Furthermore, PMI surveys simply ask respondents to state whether output or activity has 'gone up', 'remained unchanged' or 'gone down' in the latest month. The results are presented as balance statistics

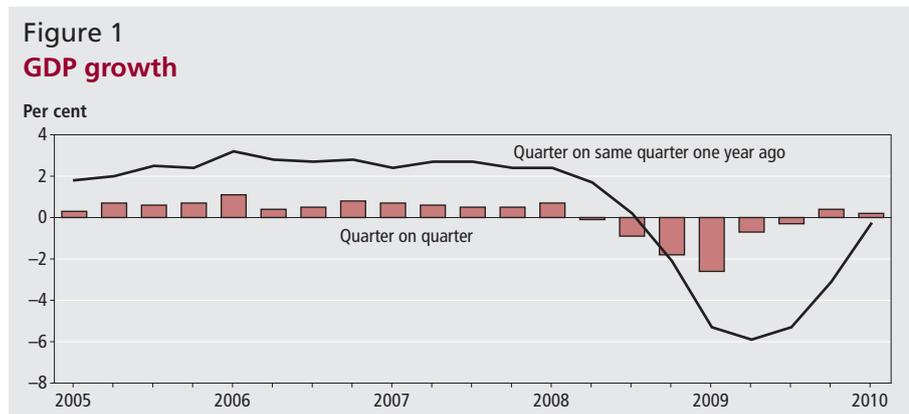
SUMMARY

The Preliminary estimate of Gross Domestic Product (GDP) reports that the UK economy grew by 0.2 per cent in 2010 Q1 – slightly weaker than the previous quarter when GDP expanded by 0.4 per cent. Previous work looking at the coherence of ONS and Purchasing Managers' Index (PMI) data is updated, which shows that PMI is suggesting a stronger recovery in activity than official data. Although unemployment increased to 8.0 per cent in December–February 2010, the labour market has not weakened to the same extent as in the previous two recessions. Annual inflation in the Consumer Prices Index (CPI) picked up to 3.4 per cent in March, of which one-and-three-quarters percentage points is estimated to be accounted for by the reversion in the rate of VAT to 17.5 per cent in January 2010.

UK economy expands by 0.2 per cent in first quarter of 2010

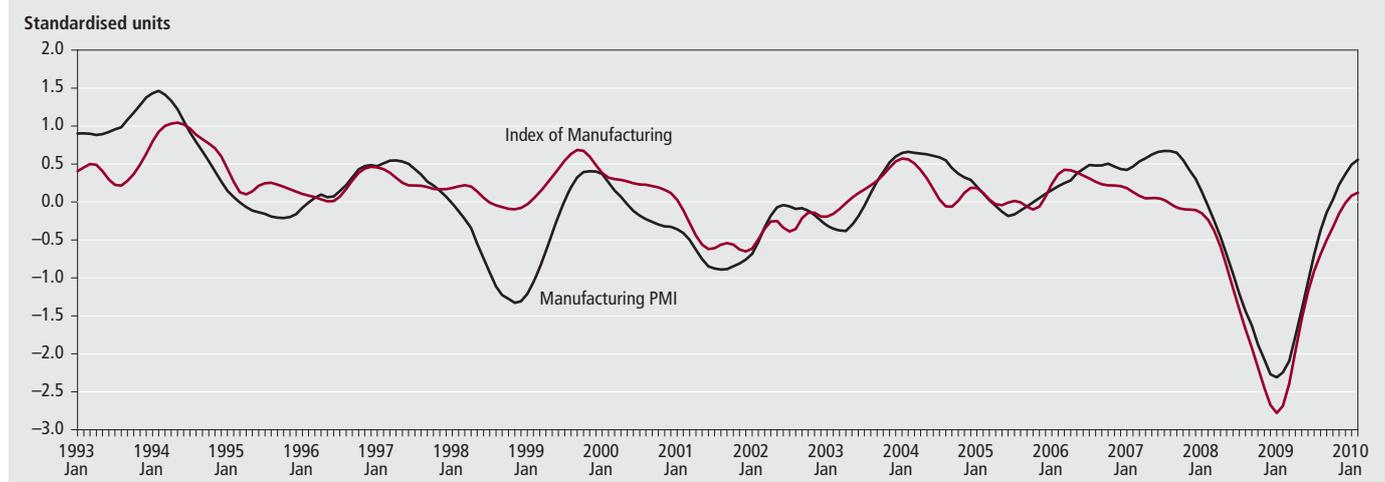
After growing by 0.4 per cent in the final quarter of last year, Preliminary estimates of Gross Domestic Product (GDP) report that the UK economy expanded by 0.2 per cent in the first quarter of 2010. This, the second

successive quarter of positive growth, follows six quarters of contraction where the level of GDP fell from peak to trough by around 6.2 per cent (Figure 1). As a result, output in the economy as whole and also in the production and services sub sectors, remains significantly below pre-recession highs. The slowdown in growth from the first quarter may partly reflect the disruption caused by heavy snowfall across the country in January.



Source: GDP Preliminary estimate

Figure 2
Signal extraction: Index of Manufacturing and Manufacturing PMI



Source: Index of Manufacturing and UK Manufacturing PMI

between the proportion of firms reporting 'up' against 'down' and then normalised so that in aggregate: 50 = no change, 0 = unanimously down, and 100 = unanimously up. Consequently, respondents cannot report an order of magnitude to output or activity changes over the month but only the direction, unlike in official data collections.

As ONS and PMI data are produced on different bases a number of transformations are necessary in order to make a comparison. This methodology is explained further in Chamberlin (2008) but briefly as follows:

- investigate correlation – ONS data is normally more strongly correlated with lags of PMI data. Whereas PMI data are monthly indicators, headline ONS data for the Index of Manufacturing and Index of Services are reported as three-months on three-months growth rates, hence more past data is included in the measure. It might also be the case that PMI data, by the very nature of qualitative business survey collections, are influenced by forward looking factors such as business confidence regarding the economic outlook. Therefore, in making a comparison it is sensible to consider lags of PMI
- standardise the units of measurement – ONS data is reported as a growth rate whereas PMI data as a balance statistic, so the measures are not directly comparable. There is a large literature on how balance statistic data may be mapped to continuous growth rates which is summarised by Nardo (2003). However, here we simply standardise both data sources, which reduces each

to a time series with an average of zero and a standard deviation (hence variance) of unity

- signal extraction – the final stage is to use a Kalman Filter to capture the underlying trend in each time series by smoothing out transitory and erratic features of the data

The basic rationale in this approach is that both ONS and PMI are essentially trying to measure the same underlying economic activity or behaviour (which is referred to as the signal), although due to different methodologies and samples each will do so subject to different forms of measurement error. Coherence can then be judged by attempting to capture and compare these underlying signals in both data sources. For this the Kalman Filter is a standard tool for signal extraction problems.

Figure 2 presents the results of the signal extraction exercise for the manufacturing sector (up to and including February 2010). Clearly, both data sources reflect the significant downturn in UK manufacturing output during 2008 and the majority of 2009. Recent recovery in manufacturing growth towards the end of 2009 and early 2010 is also captured in both time series.

Latest published data (GDP Preliminary estimate) reports that manufacturing output increased by 0.7 per cent in 2010 Q1 following growth of 0.8 per cent in 2009 Q4. Prior to this the sector contracted for six consecutive quarters, registering a peak to trough fall in output of 14.0 per cent between 2008 Q1 and 2009 Q3.

According to the April UK Manufacturing PMI, output has remained above the 50 = no change index for the tenth successive month, implying that

the recovery in this sector started in July 2009. In fact, the April survey reported the highest positive balance since July 1994 and the second highest balance recorded in the 18 years of the survey.

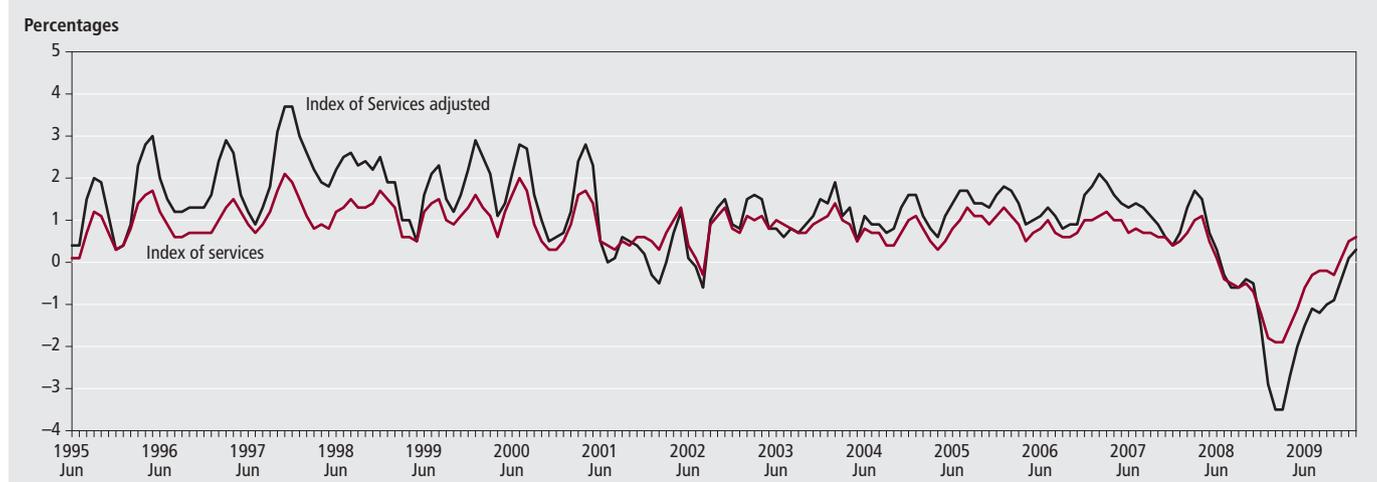
The strength of the recovery in manufacturing output primarily reflected the improving general economic environment, in turn leading to growing new orders and efforts to reduce backlogs of work. New orders registered a ninth successive monthly increase as domestic and global conditions continued to improve. Of particular significance were increasing moves to rebuild inventories from their current low levels, especially stocks of raw materials. Although the pick up in growth was broad-based the sharpest increases in output and new orders were seen in the intermediate goods sector. Export orders increased for the seventh month with the exchange rate identified as a factor aiding competitiveness.

Comparing the ONS Index of Services with the UK Services PMI is more complicated as the coverage between the two is different. More specifically, around one half of the services sector (according to published Index of Services weights) are not actually covered by the PMI, including:

- Wholesale and distribution (153 parts per 1000 in GVA weights)
- Letting of dwellings (91)
- Public administration and defence (75)
- Education (80)
- Health and social services (85)
- Sewage and refuse disposal (9)
- Private households with employed persons (6)

Exclusion of these items may obviously

Figure 3
Index of Services and adjusted Index of Services



Source: Index of Services

lead to a divergence between the two data sources, especially if the above industries which tend to fall in the distribution and public services, behave differently to the rest of the services sector. As a result, PMI data tends to be more heavily influenced by activity in business services. Section JK in the Index of Services, that is business services and finance, accounts for around 310 parts per 1000 in GVA weights. However, given what is excluded, its weight in the PMI survey may be approximately double that.

Figure 3 presents the three-months on three-months growth rates for the Index of Services and also for an adjusted series that attempts to remove the components that are not covered in Services PMI data.

One of the key features shown in **Figure 3** is that the contraction in the adjusted Index of Services time series is much stronger than in the overall index. Considering the components that have been removed from the adjusted series this is not too surprising. Public administration and defence, education and health and social services, sewage and refuse disposal largely consist of public sector output, which tends to be relatively stable over the business cycle and less prone to significant contraction during a recession. Given that these industries account for almost a third of total services output they are likely to moderate the extent of the contraction.

Ownership of dwellings is also a relatively large and stable part of output accounting for around 10 per cent of services value-added. This largely consists of the imputed rental activity of owner-occupiers who pay themselves to live in their own properties. As tenants of private and social landlords engage in market activity that is recorded

in the National Accounts, failure to account for this otherwise non-recorded activity would make services output susceptible to shifts between the proportion of tenant and owner-occupied households. It would also make international comparisons of the level of GDP difficult where these proportions differ between countries. The implicit output of this owner-occupier industry also tends to be relatively stable regardless of activity in the wider economy as the real consumption of housing services would not be expected to show large cyclical variation.

The adjusted series, as previously mentioned, is therefore driven to a larger extent by the remaining industries of which business services and finance are a large constituent part. One of the characteristic features of the most recent recession compared to those previously was the extent to which it was driven by a contraction in business to business demand which impacted significantly on this industry. Transport and communication also contracted sharply in the recession which will be reflected more significantly in the adjusted series.

Figure 4 presents the results of the signal extraction exercise comparing the adjusted IoS with the Services PMI data (up to January 2010). Although the two time series show a good degree of coherence during the recession, it appears that the strength of recovery according to Services PMI data has been stronger.

The GDP preliminary estimate reported that services output grew by 0.2 per cent in the first quarter of this year, slower than the 0.5 per cent growth recorded in 2009 Q4. Prior to this the sector had contracted for five successive quarters between 2008 Q2 and 2009 Q3, as the level of output dropped

from peak to trough by a total of 4.5 per cent.

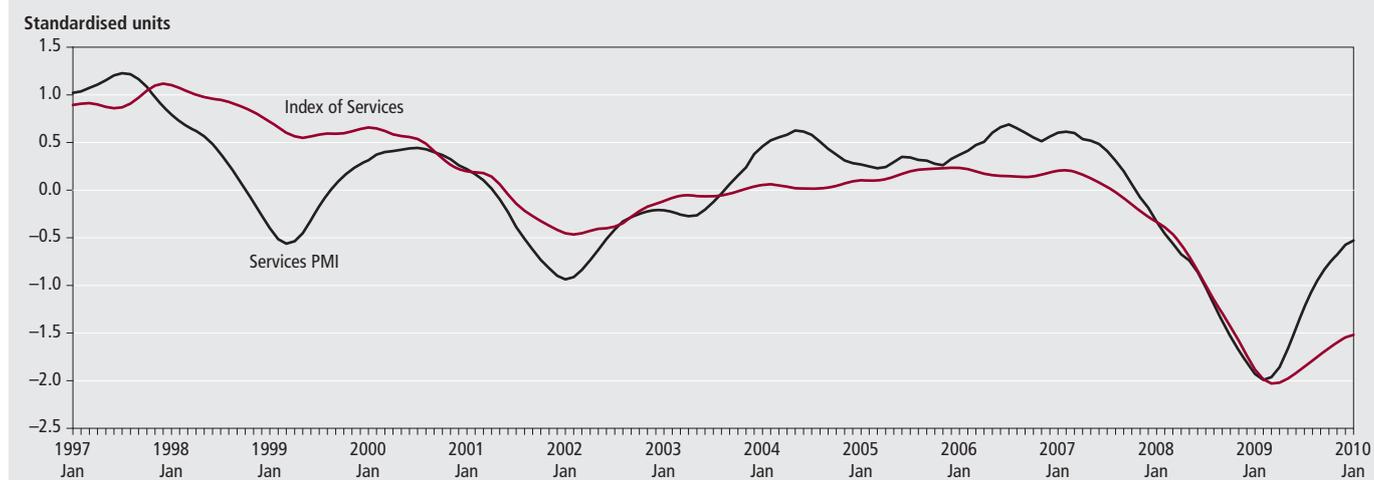
UK Services PMI in April reported higher activity due to greater levels of new business after snow had affected activity at the beginning of the year. The rise in business activity, the eleventh successive month that the balance was above 50, was down to an improvement in general economic conditions feeding through to business confidence.

Butler (2005) defines GDP* as a measure of (private sector) output consistent with the industries covered in PMIs for manufacturing, services and construction. GDP* can be constructed using the Index of Manufacturing, the adjusted Index of Services, and by interpolating (using a cubic spline) quarterly data on construction output. These component parts can then be weighted together using official GVA weights.

Figure 5 presents the results of the signal extraction procedure on an aggregate PMI and a measure of GDP*. This primarily reflects the coherence issues shown in the services sector, which as the largest part of UK private sector output, is understandable. In both measures the depth and timing of the recent recession appear fairly consistent, but recovery is faster in the aggregated PMI.

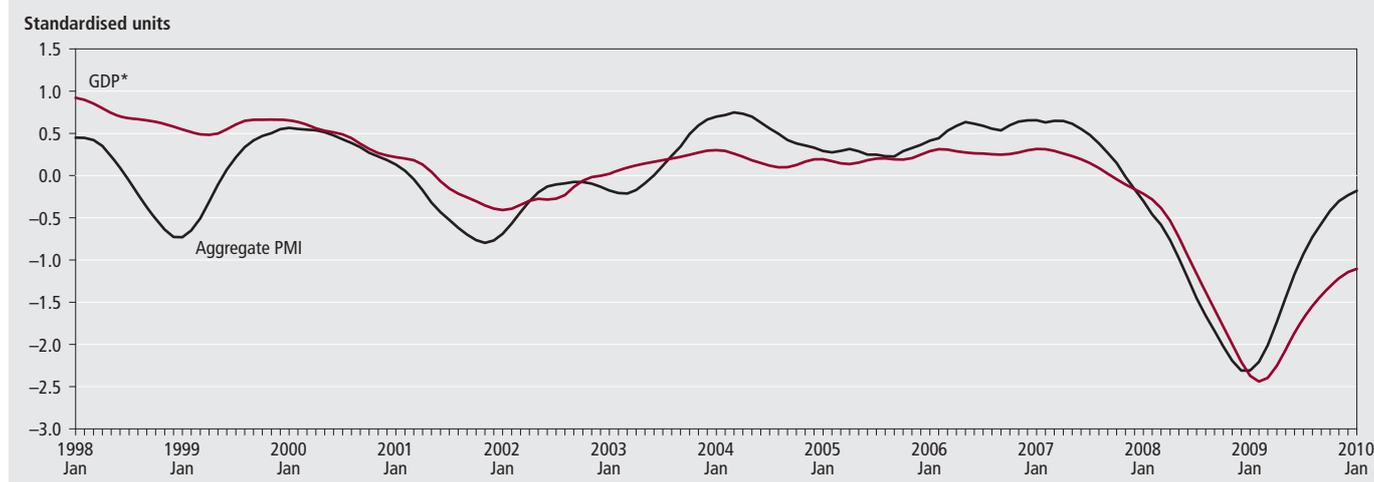
Despite attempts to reconcile the two data sources it is not alarming that some differences still remain – a reflection that the two data sources are methodologically different. One key issue, which might explain why PMI data is rebounding faster than official estimates, is that survey respondents can only report in the direction of output or activity and not the speed. As a result, strong positive survey balances may

Figure 4
Signal extraction: Index of Services and PMI Services



Source: Index of Services and UK Services PMI

Figure 5
Signal extraction: Aggregate PMI and GDP*



Source: ONS and Markit/CIPS

emerge simply if there is a broad consensus that things are improving – even if the improvement were deemed modest. For example, if all survey respondents were to report modest growth in the latest month the published balance statistic would be the same as if they all reported strong growth. Hence swings in PMI survey balances may reflect consensus as much as the magnitude of growth.

Public sector net borrowing increases to 11.6 per cent of GDP in 2009/10

The most recent Public Sector Finances statistical bulletin for March 2010 is of particular interest as it coincides with the end of financial year 2009/10. As **Figure 6** shows, in this latest financial year,

the current budget balance deficit, which is the difference between the Government's current revenues and expenditures, has grown to 7.7 per cent of GDP (£107.6 billion). As a percentage of GDP this is the largest current budget deficit since the War. After the previous recession in the early 1990s the current budget deficit peaked at 6.3 per cent of GDP in 1993/94.

Figure 6 also shows the speed at which the current budget deficit has deteriorated in the last two financial years. In 2007/08, the current budget deficit was £4.6 billion (0.32 per cent of GDP). This rose significantly by around £45 billion to £49.7 billion (3.47 per cent of GDP) in 2008/09, before a further increase of £60.0 billion in the latest financial year.

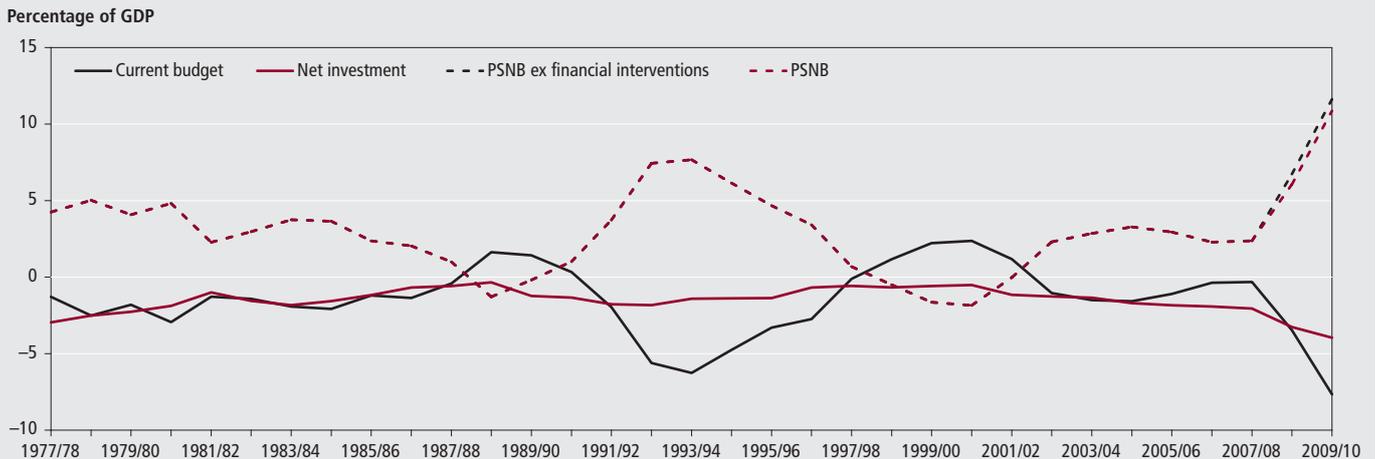
Since the financial year 1977/78, public sector net investment has averaged around 1.5 per cent of GDP. However, in recent years this proportion has steadily risen

to 4.0 per cent in 2009/10. Adding this to the growing budget deficit in the last two financial years, has meant that Public Sector Net Borrowing (PSNB) has increased markedly (also shown in Figure 6).

ONS currently publishes two measures of PSNB. According to the overall measure, PSNB stood at £152.8 billion (10.9 per cent of GDP) in 2009/10. However, the headline measure, which excludes the impact of the Government's interventions in the financial sector, has shown a larger rise to £163.4 billion (11.6 per cent of GDP) in 2009/10. This compares to £96.5 billion (6.7 per cent of GDP) in 2008/09 and £33.6 billion (2.4 per cent of GDP) in 2007/08.

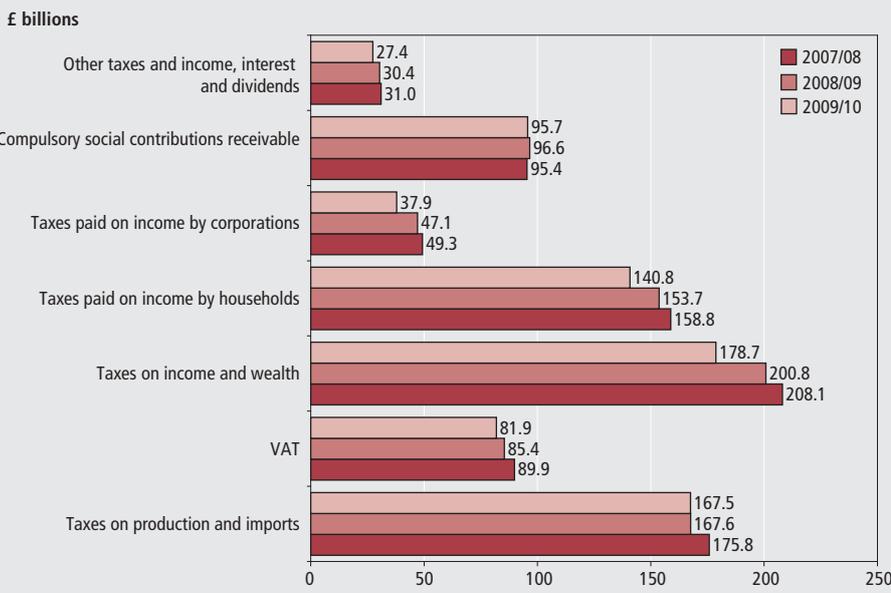
PSNB excluding financial interventions was introduced in the Pre-Budget Report 2009 and parallels the measure of Public Sector Net Debt (PSND) excluding financial interventions that was introduced in Budget 2008. The rationale is that much of the

Figure 6
Public sector net borrowing and its components



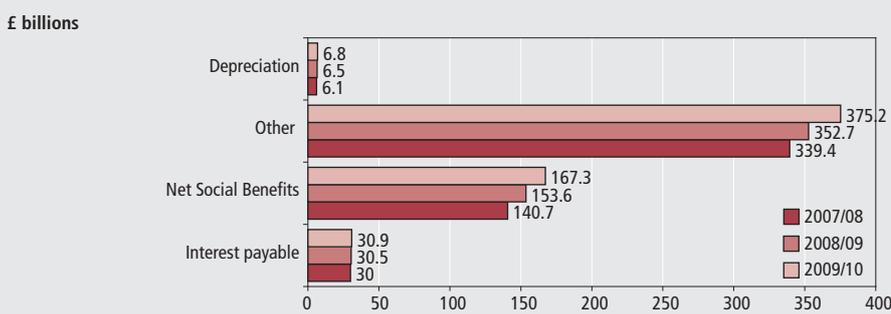
Source: Public sector finances

Figure 7
Central government budget revenues in the last three financial years



Source: Public sector finances

Figure 8
Central government budget expenditure and depreciation in the last three financial years



Source: Public sector finances

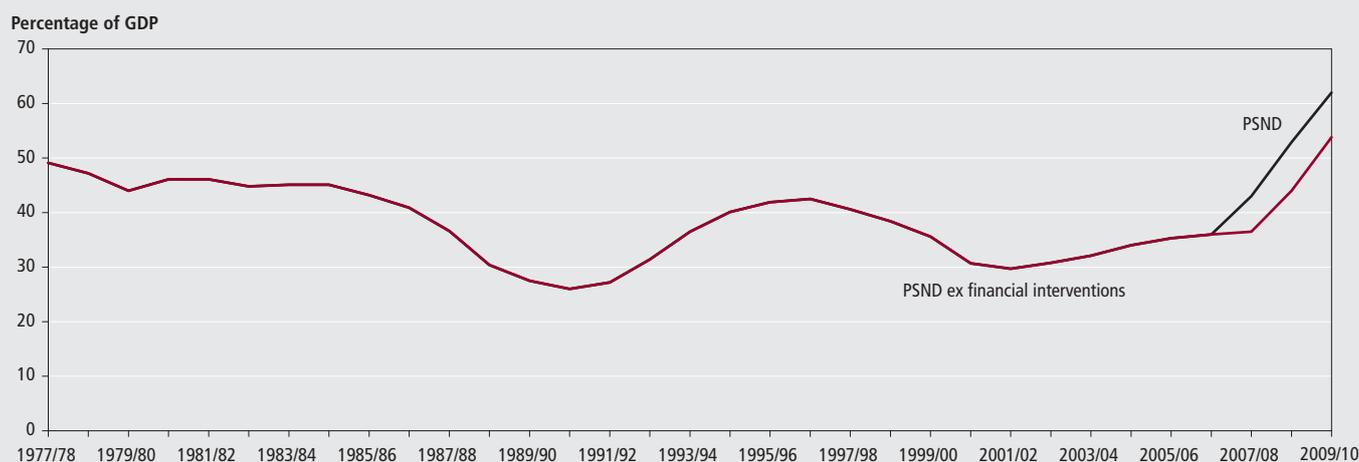
Government's intervention is regarded as temporary, for example, it intends to eventually divest itself of shareholdings and ownership in the banking sector. Therefore, these measures excluding interventions are considered to provide a better guide to the underlying state of public sector finances without 'temporary' distortions.

In terms of PSNB, it is clear from the figures that the Government's intervention has reduced net borrowing which is higher once the effects of interventions have been removed. Much of the Government's intervention has consisted of buying private sector financial assets, which although adds to net debt, has generated a flow of revenue that supports the current budget balance. For example, the operating surpluses and net-interest positions of banks now considered to be in the public ownership domain will be scored to the current budget. Net interest earnings from the Asset Purchase Facility and fees paid to the Special Liquidity Scheme (both operated by the Bank of England) are also added to the current budget.

Figure 7 and Figure 8 show how the current revenues and expenditure (including depreciation) of Central Government have changed over the last three financial years during which the current budget deficit and PSNB have increased.

Total revenues (Figure 7) have declined from £510 billion in 2007/08 to £495 billion in 2008/09 and then to £469 billion in 2009/10 – a total fall of over £40 billion during the course of the last two financial years. During this period, revenues on production and imports declined by around £8 billion, which is almost entirely accounted for by VAT revenues reflecting

Figure 9
Public Sector Net Debt



Source: Public sector finances

weaker spending and the temporary reduction in the rate of VAT from 17.5 per cent to 15 per cent between December 2008 and January 2010. Revenues from taxes and wealth declined by nearly £30 billion – a clear sign that the recession impacted strongly on economic activity and asset prices. Around £18 billion of this was accounted for by the household sector as the labour market weakened, and falling prices and lower turnover in the housing market reduced stamp duty revenues. Falling interest rates and equity prices also dampened non-labour sources of income. Just over £11 billion of the decline originated in the corporate sector, where the global recession impacted on operating surpluses and falling interest rates and equity prices on property (financial) income.

Figure 8 shows the pattern in current expenditure (including depreciation) over the same three financial years. Note that this does not include capital expenditure (public sector investment) which is shown in Figure 6. There has been a strong increase in current expenditure from £516 billion in 2007/08 to £543 billion in 2008/09 and then to £580 billion in 2009/10 – a total increase of around £64 billion in the last two financial years. Approximately £27 billion of this was accounted for by a rise in net social contributions – a reflection of the demise in the labour market and weak income growth in the recession. However, nearly £36 billion came from the 'other' category, and is likely to reflect more discretionary spending including stimulus spending.

ONS also publishes two measures of PSND. The measure excluding financial interventions is again treated as the headline figure for the same argument that these interventions are viewed as

temporary. In the financial year 2009/10, PSND was 89.0 billion (62.0 per cent of GDP), but excluding financial interventions it was lower at £771.6 billion (53.8 per cent of GDP). These are presented in **Figure 9**.

In this case, the measure including financial interventions is worse than the headline measure as most of the Government's financial interventions have involved asset purchases or the acceptance of liabilities that have increased net debt. The net debt positions of Northern Rock and Bradford and Bingley are reflected in PSND but not PSND excluding interventions. At present the net debt of Lloyds Banking Group and RBS are yet to be scored to the public sector, but this is likely to further increase PSND compared to PSND excluding interventions. However, the Government's stated intention is to eventually return these organisations to the private sector so the impact on Public Sector Finances should be temporary.

Payments by the Financial Services Compensation Scheme (FSCS) and HM Treasury to compensate eligible depositors in the Icelandic banks operating in the UK and London Scottish Bank, or to contribute to the costs in resolving the Dunfermline Building Society currently add to PSND. However, as it is hoped these will eventually be recovered by realising the assets of the failed banks, it is viewed as temporary and not scored in the PSND excluding interventions measure.

As Figure 9 shows, even on the lower headline measure which excludes financial interventions, PSND has increased rapidly (by approximately £250 billion) in line with the growing level of PSNB over the last three financial years. In 2007/08 PSND excluding financial interventions was 36.5 per cent of GDP; this rose to 44.0 per cent of

GDP in 2008/09 and then to 53.8 per cent in 2009/10.

This is already higher than the peak of 42.5 per cent of GDP reached in 1996/97 after the previous recession. However, because PSND largely reflects the accumulated sum of current budget deficits it would be expected to increase further while PSNB remains positive. Economic growth is also important when thinking about PSND as a proportion of GDP as this also partly determines the size of net debt relative to the size of the economy that supports it.

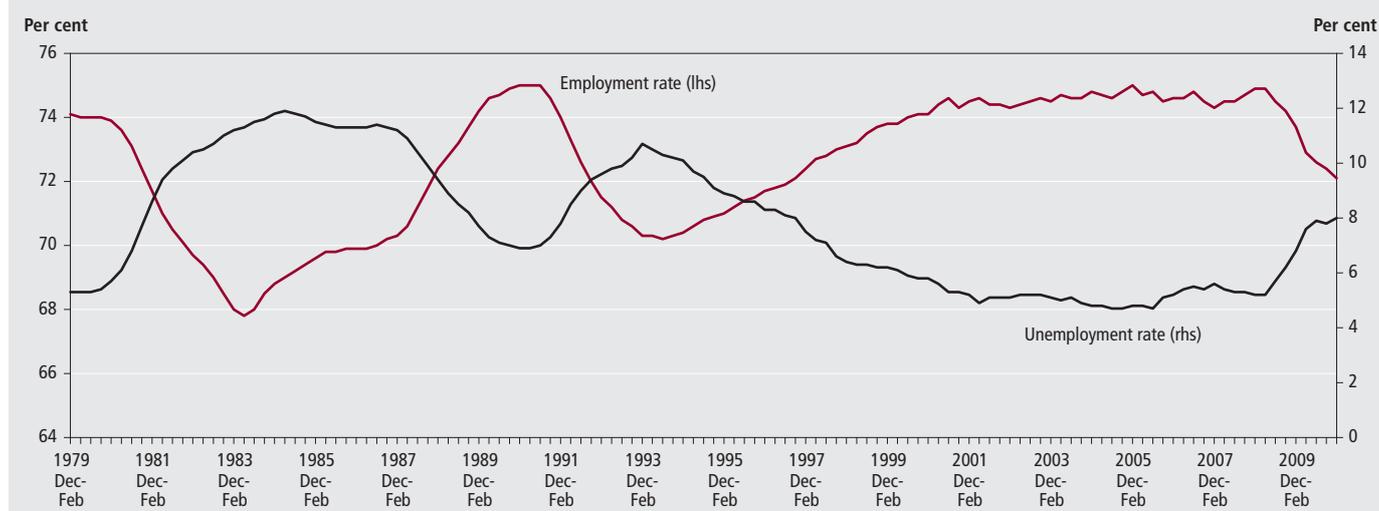
Unemployment rises to 8.0 per cent in December–February 2010

Figure 10 displays long time series of headline unemployment and employment rates in the UK.

In the three months December–February 2010, unemployment climbed by 43,000 compared to the previous three month period to reach 2.5 million, corresponding to an unemployment rate of 8.0 per cent. This is the highest rate of unemployment recorded since the UK entered recession and unemployment first started to rise in Spring 2008. In the three months March–May 2008 unemployment stood at 1.6 million (5.2 per cent).

Compared to previous downturns, the 891,000 rise in the number of unemployed and the 2.8 percentage points increase in the rate of unemployment are lower, despite the fall in output being relatively severe. Between June–August 1990 and December–February 1993, total unemployment increased from 2.0 million (7.0 per cent) to 3.03 million (10.7 per cent)

Figure 10
Unemployment and employment rates



Source: Labour Market Statistics

– a total increase of just over 1.0 million (3.7 percentage points). In March–May 1979 total UK unemployment was 1.41 million (5.3 per cent), but three years later in March–May 1984 had increased to 3.28 million (11.9 per cent). This represented a total increase of 1.87 million (6.6 percentage points).

At present, and despite the latest quarterly increase, the rise in unemployment has been less marked than in previous recessions. However, the larger increases in unemployment in previous recessions partly reflected the fact that the labour market continued to weaken even after GDP had returned to growth. This was particularly the case in the early 1980s recession when unemployment continued to rise for several years after the return to positive growth in GDP.

In December–February 2010, employment was 89,000 lower than in the previous three-month period. As a result, the employment rate declined to a new recent trough of 72.1 per cent, the lowest rate since August–October 1996. The total fall in employment since the recent peak in March–May 2008 is 740,000.

In terms of the peak to trough fall in the number of employed and the lowest employment rate reached, the most recent downturn is not as bad as the two previous.

Between March–May 1990 and June–August 1993 total employment fell by 1.65 million to reach a low employment rate of 70.2 per cent. And between December–February 1980 and March–May 1983, total employment fell by 1.64 million to reach an employment rate low of 67.8 per cent.

Several factors that might explain why the pass through from falling output to the labour market has been weaker in the latest

recession compared to the previous two have been proposed. There is some evidence that workers have accepted moderation in pay settlements and shorter working hours in order to preserve their employer's cash flow and sustain their own employment. Research published by the Bank of England (see Hackworth 2009) found that pay settlements averaged below 2 per cent in 2009 – with the recession and weak labour demand a key influence on settlements. Although there were relatively few instances of employees being forced to accept pay cuts, around 35 per cent in the private sector experienced a pay freeze in the last year. Walling and Clancy (2010) report on the increasing incidence of time-related underemployment in the current recession and the increasing share of part-time employees unable to find full-time work.

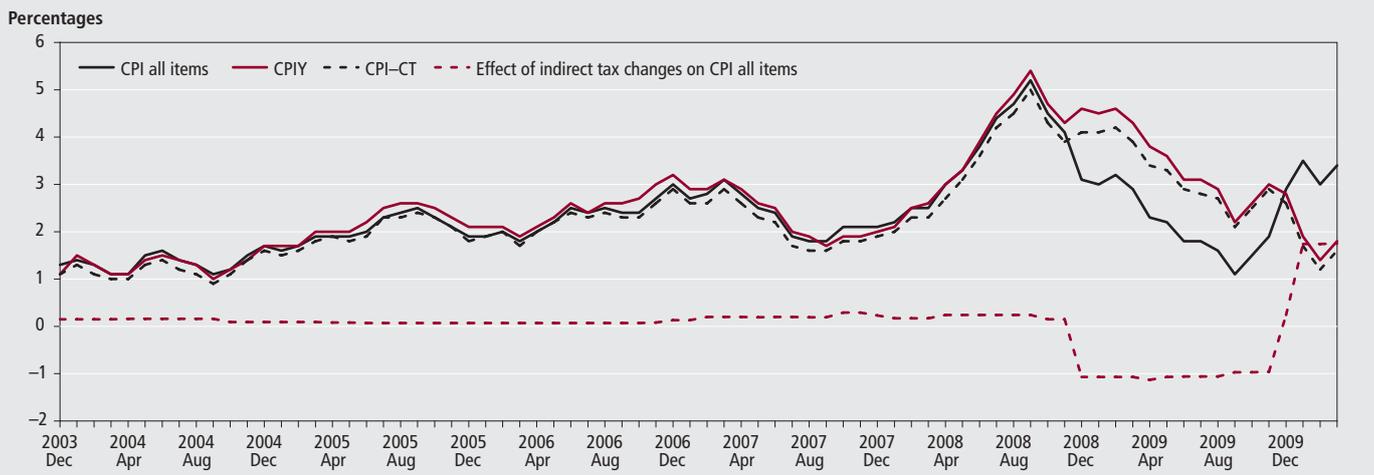
Businesses may also have held on to labour to a greater extent. In the services sector, which accounts for a growing share of total GVA, skilled labour inputs are relatively important. Therefore, in the downturn firms have to judge the extent to which labour might be cut in relation to spare capacity against the expected difficulty and cost in hiring and training skilled labour once business conditions improve. Sharp reductions in interest rates may have aided this form of labour hoarding, by reducing the costs of servicing debts and supporting cash flows it relieves the pressure to cut the wage bill. Furthermore, the incentive to push employees into early retirements has been made less attractive by large deficits in corporate pension schemes that have to be reported in greater detail in published company accounts.

Indirect taxes add 1.75 percentage points to the annual rate of CPI inflation

The Consumer Prices Index (CPI) was 3.4 per cent higher in March 2010 than the same month a year earlier (Figure 11). Although the general direction of changes in consumer prices inflation in the last two years have reflected movements in energy prices – for instance motor fuels which are 24.6 per cent higher in March than last year are currently adding about 1.0 percentage point to annual CPI inflation rates – changes in indirect taxes have also had large and sustained effects.

ONS publishes two CPI measures that seek to remove the impact of indirect tax changes on the annual inflation rate to provide an underlying picture of inflation developments in the economy. CPIY is essentially the all items CPI with certain indirect taxes excluded. These include VAT, excise duties, insurance premium tax, air passenger duty and stamp duty on share transactions. Based on this measure CPIY inflation was 1.8 per cent in March. CPI-CT includes indirect taxes in the index, but holds them at constant values. Therefore, due to differences in weights, it will be similar but not exactly the same as CPIY measure. In March, annual inflation in CPI-CT was 1.6 per cent. As Figure 11 shows, CPIY and CPI-CT usually show strong co-movements. Based on the CPI-CT measure, ONS also publish a series that accounts for the contribution of indirect taxes to the annual change in CPI (which is basically CPI-CT *minus* CPI all items and also plotted in Figure 11).

Figure 11
Annual rates of CPI, CPIY and CPI-CT inflation



Source: Consumer Prices

CPI fell below the CPIY and CPI-CT annual inflation rates between December 2008 and January 2009 when VAT was temporarily reduced from 17.5 per cent to 15.0 per cent. As this reduction feeds into the price level for an entire year, and the annual inflation rate reflects the change over 12-months, its impact was to lower CPI inflation by about 1.0 percentage point during this period.

The reversion to the higher rate of VAT in January 2010 though has had a double positive effect on CPI inflation. If the VAT reduction had been permanent and reflected as such in price levels, it would have eventually fallen out of the inflation calculation after a year, hence CPI inflation would increase and converge back to CPIY and CPI-CT. This happened in December 2009 as shown in Figure 11. The impact of the increase in VAT in January 2010 would then raise inflation further, as seen by the movement of CPI above CPIY and CPI-CT. In March the all items CPI inflation rate was around 1.75 percentage points higher than the CPI-CT rate.

This positive innovation in the rate of CPI inflation will now remain in the index for a year, so will fall out of annual inflation

calculations in January 2011 when CPI and CPIY and CPI-CT would be expected to converge once again. However, the exact impact will also depend on the extent to which changes in VAT have been passed onto consumer prices and also changes in other indirect taxes. But as Figure 11 shows, once the impact of indirect taxes has been removed underlying inflation in consumer prices is currently lower than the all items rate would imply.

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Independent forecasts

April 2010

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.

2010

	Average	Lowest	Highest
GDP growth (per cent)	1.3	0.8	2.2
Inflation rate (Q4, per cent)			
CPI	2.1	1.6	2.8
RPI	2.9	1.9	4.2
Claimant count (Q4, million)	1.73	1.48	2.08
Current account (£ billion)	-22.4	-42.3	-10.0
Public Sector Net Borrowing (2009-10, £ billion)	168.8	148.0	190.6

2011

	Average	Lowest	Highest
GDP growth (per cent)	2.1	1.0	3.2
Inflation rate (Q4, per cent)			
CPI	1.7	0.0	3.3
RPI	3.0	1.6	4.8
Claimant count (Q4, million)	1.72	1.50	2.30
Current account (£ billion)	-21.7	-53.0	-5.0
Public Sector Net Borrowing (2010-11, £ billion)	146.9	115.0	201.7

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

2010

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	2.5	1.8	0.9	1.9
Consumer price (percentage change from previous year)	1.7	-0.9	0.9	..
Unemployment rate (per cent of the labour force)	9.9	5.6	10.6	9.0
Current account (as a percentage of GDP)	-3.4	2.8	-0.1	-0.8
Fiscal balance (as a percentage of GDP)	-10.7	-8.2	-6.7	-8.3

2011

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	2.8	2.0	1.7	2.5
Consumer price (percentage change from previous year)	1.3	-0.5	0.7	..
Unemployment rate (per cent of the labour force)	9.1	5.4	10.8	8.8
Current account (as a percentage of GDP)	-3.7	2.8	0.3	-0.8
Fiscal balance (as a percentage of GDP)	-9.4	-9.4	-6.2	-7.6

Notes

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

Key indicators

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

	Source CDID	2008	2009	2009 Q3	2009 Q4	Seasonally adjusted unless otherwise stated			
						2010 Q1	2010 Jan	2010 Feb	2010 Mar
GDP growth – chained volume measures (CVM)									
Gross domestic product at market prices	ABMI	0.5	-4.9	-0.3	0.4	0.2	..	..	..
Output growth – chained volume measures (CVM)									
Gross value added (GVA) at basic prices	ABMM	0.4	-4.6	-0.2	0.4	0.2	..	..	..
Industrial production	CKYW	-3.1	-10.2	-0.9	0.3	0.7	-0.5	0.9	..
Manufacturing	CKYY	-2.9	-10.5	-0.3	0.8	0.7	-0.9	1.3	..
Construction	GDQB	-0.8	-10.7	1.9	-1.0	-0.7	..	..	..
Services	GDQS	1.4	-3.5	-0.2	0.5	0.2	..	..	..
Oil and gas extraction	CKZO	-4.8	-7.7	-6.5	1.1	..	0.9	-1.1	..
Electricity, gas and water supply	CKYZ	0.2	-7.9	0.2	-2.7	2.6	1.9	-0.5	..
Business services and finance	GDQN	2.4	-4.7	-1.2	0.4	0.6	..	..	..
Household demand									
Retail sales volume growth	EAPS	2.6	1.7	1.1	0.7	..	..	..	..
Household final consumption expenditure growth (CVM)	ABJR	0.9	-3.2	0.0	0.4	..	..	..	..
GB new registrations of cars (thousands) ¹	BCGT	..	..	..	..	..	..	..	..
Labour market^{2,3}									
Employment: 16 and over (thousands)	MGRZ	29,443	28,979	28,917	28,905	..	28,824	..	..
Employment rate: working age (%)	MGSU	74.5	72.8	72.5	72.4	..	72.1	..	..
Workforce jobs (thousands)	DYDC	31,661	30,987	30,872	30,753	..	..	..	..
Total actual weekly hours of work: all workers (millions)	YBUS	940.7	913.3	909.7	907.9	..	912.8	..	..
Unemployment: 16 and over (thousands)	MGSC	1,776	2,395	2,461	2,457	..	2,502	..	..
Unemployment rate: 16 and over (%)	MGSX	5.7	7.6	7.8	7.8	..	8.0	..	..
Claimant count (thousands)	BCJD	905.8	1,528.5	1,600.2	1,615.9	1,579.1	1,616.8	1,576.7	1,543.8
Economically active: 16 and over (thousands)	MGSF	31,220	31,374	31,378	31,363	..	31,326	..	..
Economic activity rate: working age (%)	MGSO	79.1	79.0	78.9	78.7	..	78.5	..	..
Economically inactive: working age (thousands)	YBSN	7,872	7,967	8,006	8,077	..	8,159	..	..
Economic inactivity rate: working age (%)	YBTL	20.9	21.0	21.1	21.3	..	21.5	..	..
Vacancies (thousands)	AP2Y	636	452	431	465	475	480	482	475
Redundancies (thousands)	BEAO	163	235	204	168	..	162	..	..
Productivity and earnings annual growth									
GB average earnings (including bonuses) ³	LNNC	..	..	1.4	1.5	..	0.9	2.1	..
GB average earnings (excluding bonuses) ³	JQDY	..	..	1.7	1.4	..	1.3	1.5	..
Whole economy productivity (output per worker)	A4YN	..	..	-3.3	-1.4	..	..	..	..
Manufacturing productivity (output per job)	LOUV	..	..	..	..	..	..	..	..
Unit wage costs: whole economy	LOJE	..	..	4.2	2.4	..	..	..	..
Unit wage costs: manufacturing	LOJF	..	..	..	..	..	..	..	..
Business demand									
Business investment growth (CVM)	NPEL	1.1	-19.3	-0.8	-4.3	..	..	..	..
Government demand									
Government final consumption expenditure growth	NMRY	2.6	2.2	0.6	1.0	..	..	..	..
Prices (12-monthly percentage change – except oil prices)¹									
Consumer prices index	D7G7	3.6	2.2	1.5	2.1	3.3	3.5	3.0	3.4
Retail prices index	CZBH	4.0	-0.5	-1.4	0.6	4.0	3.7	3.7	4.4
Retail prices index (excluding mortgage interest payments)	CDKQ	4.3	2.0	1.3	2.8	4.5	4.6	4.2	4.8
Producer output prices (excluding FBTP) ^{4,5}	PLLV	4.7	1.9	0.7	2.2	3.1	2.6	3.0	3.6
Producer input prices ⁵	RNNK	21.6	-3.5	-8.7	4.0	8.4	7.7	7.5	10.1
Oil price: sterling (£ per barrel)	ETXR	52.10	39.34	42.05	45.53	46.63	48.25	47.82	43.80
Oil price: dollars (\$ per barrel)	ETXQ	98.37	62.05	69.02	74.40	77.17	77.05	74.64	79.83

	Source	Seasonally adjusted unless otherwise stated							
		2008	2009	2009	2009	2010	2010	2010	2010
	CDID			Q3	Q4	Q1	Jan	Feb	Mar
Financial markets¹									
Sterling ERI (January 2005=100)	BK67	90.8	80.2	82.5	80.0	79.3	80.6	80.0	77.2
Average exchange rate /US\$	AUSS	1.8528	1.5657	1.6406	1.6343	1.5584	1.6162	1.5615	1.5053
Average exchange rate /Euro	THAP	1.2588	1.1233	1.1475	1.1058	1.1269	1.1327	1.1415	1.1092
3-month inter-bank rate	HSAJ	2.75	0.55	0.55	0.55	0.50	0.50	0.50	0.50
Selected retail banks: base rate	ZCMG						0.50	0.50	..
3-month interest rate on US Treasury bills	LUST	0.11	0.06	0.14	0.06	0.14	0.08	0.13	0.14
Trade and the balance of payments									
UK balance on trade in goods (£m)	BOKI	-93,381	-81,790	-19,816	-21,047	..	-8,066	-6,179	..
Exports of services (£m)	IKBB	170,758	161,168	39,186	39,866	..	13,260	13,068	..
Non-EU balance on trade in goods (£m)	LGDT	-53,913	-44,744	-10,896	-10,322	..	-4,665	-3,329	..
Non-EU exports of goods (excl oil & erratics) ⁶	SHDJ	105.8	96.4	96.7	102.8	..	97.2	108.9	..
Non-EU imports of goods (excl oil & erratics) ⁶	SHED	113.5	98.2	96.3	100.3	..	107.8	105.7	..
Non-EU import and price index (excl oil) ⁶	LKWQ	115.3	126.0	122.5	123.9	..	124.9	125.8	..
Non-EU export and price index (excl oil) ⁶	LKVX	109.8	118.6	116.8	117.9	..	118.9	120.2	..
Monetary conditions/government finances									
Narrow money: notes and coin (year on year percentage growth) ⁷	VQUU	7.3	6.8	8.7	6.8	..	6.7	5.8	..
M4 (year on year percentage growth)	VQJW	12.4	12.4	11.9	6.9	..	5.0	3.9	..
Public sector net borrowing (£m)	-ANNX	61,450	142,640	35,263	42,945	33,514	311	9,705	23,498
Net lending to consumers (£m)	RLMH	11,242	-714	-754	-289	..	349	528	..

External indicators – non-ONS statistics

		2009	2009	2009	2009	2010	2010	2010	2010
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Activity and expectations									
CBI output expectations balance ¹	ETCU	-2	4	4	-7	4	7	5	14
CBI optimism balance ¹	ETBV		10			12			24
CBI price expectations balance	ETDQ	-7	-4	-4	-2	6	10	15	

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.

ARTICLE

Christopher Davies, Valerie Fender and
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Office for National Statistics

Recent developments in the household saving ratio

SUMMARY

The household saving ratio summarises the income and expenditure positions of the household sector. This article considers developments in the ratio during the current recession, discussing the drivers in income and consumption and their interaction in the context of developments in the labour market, government policy and wider economic conditions.

Introduction

The aim of this article is to examine and evaluate the current developments in the household saving ratio in view of the recent deterioration in household balance sheets. **Figure 1** illustrates the path of the saving ratio over the last four decades. Notable is its persistent decline from a high point in the 1990s through to 2008 and its sharp reversal in 2008 and 2009.

Figure 1 highlights the declining trend in the saving ratio since the late 1970s, falling during periods of economic growth then recovering to a lower peak in periods of turbulence in the economy. The period of decline following the 1990s recession was particularly long, so much so that the saving ratio entered the current recession in a negative position.

The factors supporting this pattern of recovery in saving during times of economic uncertainty are examined in the body of the article. These factors are generally linked to labour market uncertainty and the position of household and government balance sheets.

Household final consumption expenditure fell significantly in 2008 Q4 and 2009 Q1, the period immediately following the fall of Lehman Brothers and deterioration in the labour market.

A feature of the current recession has been the development of household income, the denominator in the saving ratio, which has been supported by fiscal and monetary policy over 2009 and the overall response of the labour market

relative to previous recessions. The different response of the saving ratio in other major developed economies may reflect attitudes to risk and debt as much as different labour market and output developments.

What is the saving ratio and why is it important?

The saving ratio expresses the amount of saving that the household and non-profit institutions serving households (NPISH¹) sector makes in relation to its available resources. Total resources are comprised of gross disposable income and an adjustment for the change in the net equity of households in pension funds.

The saving ratio is a key indicator of households' willingness and ability to purchase goods and services. In National Accounts terms, saving is defined as the part of households' available resources that is not spent on final consumption of goods and services. It does not therefore equate with the use of the term saving in common parlance. For instance, saving in the National Accounts sense will fall if households increase their spending through recourse to increased borrowing, even though they have not changed their saving in the conventional sense. As with all aggregate data, this single indicator can mask the vast divergence in saving within the household sector and as such can only inform the overall position.

Given that consumer expenditure accounts for more than 60 per cent of all spending in the UK economy, the

Figure 1
Household saving ratio¹

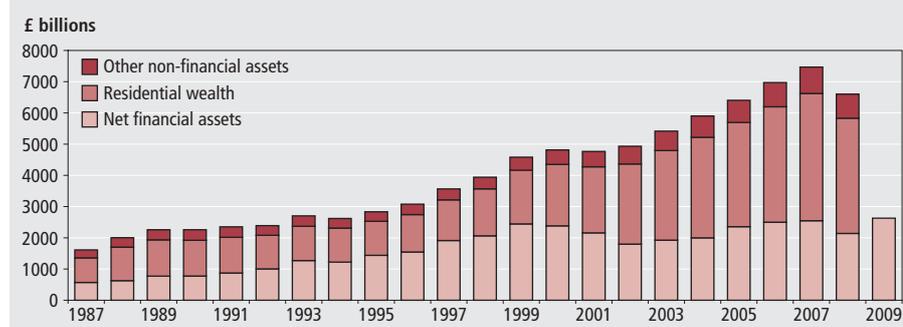


Note:

1 Current prices, seasonally adjusted.

Source: Office for National Statistics

Figure 2
Household and NPISH sector net worth¹



Note:

1 Data for residential wealth and other non-financial assets in 2009 are unavailable until Blue Book 2010.

Source: Office for National Statistics

importance of the saving ratio and its constituent components is apparent. For a more detailed discussion of the construct of the saving ratio and accompanying measurement issues, see Chamberlin and Dey-Chowdhury (2008).

The saving ratio is calculated in current prices and all component analysis will be consistent with this. Where constant price data are discussed for expenditure components, this will be explicitly stated within the analysis. Income data are only deflated in the aggregate and as such no constant price analysis can be performed at the lower level.

Household sector balance sheet

Before examining the factors driving the recent rebound in the saving ratio, the article will outline the structure and decline in the net wealth position of the household sector balance sheet over the last two years.

The household sector balance sheet represents the relationship between

household assets and liabilities. **Figure 2** illustrates the developments in the stock of net household wealth split between its main components; financial assets, residential wealth and other non-financial wealth (only financial asset data are available for 2009 at present). The figure clearly shows that the household sector's balance sheet grew strongly over the period, driven by the accumulation of financial assets and residential wealth. The former has been driven by growth in equity markets and the latter by increasing house prices (See Chamberlin 2009).

The accumulation of residential wealth has been fuelled by rising house prices. This investment in residential wealth has been financed by a corresponding growth in financial liabilities, in particular loans secured on dwellings. The household sector has therefore had to borrow from other sectors of the economy. From 2000 onwards, the sector has been a persistent borrower from other parts of the economy. In particular the main counterpart to this

increased borrowing has been a rising surplus to the rest of the world sector, as confirmed by the growth in the UK's current account deficit through the last decade. More recently, the household sector has returned to surplus and become a net lender, as the availability of mortgages has declined and households have continued with the process of de-leveraging their balance sheets.

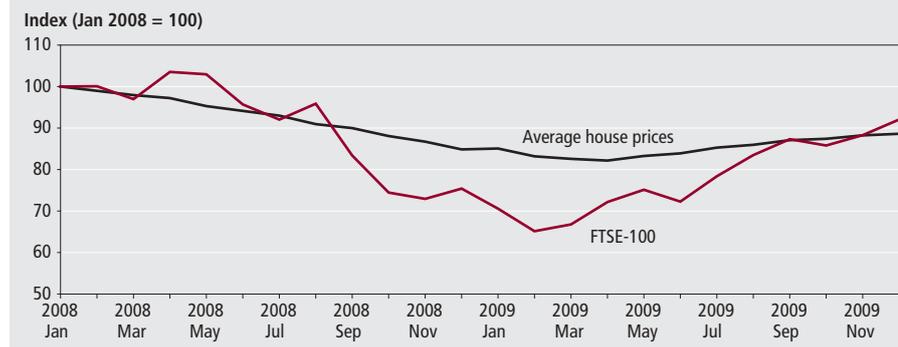
As full data will not be available until the completion of the 2010 Blue Book exercise in June, we are not currently able to capture fully the impact of the recession on the household balance sheet. It is clear nevertheless, that through 2008, the credit crisis impacted on the value of both financial assets and residential wealth, as the prices of both equities and houses declined during the year. Through 2009 however, there has been a modest recovery in both the stock market and house prices, although insufficient to re-capture the losses incurred in 2008, as illustrated by **Figure 3**.

Movements in the saving ratio could be explained by a reduction in consumption expenditure, or they may reflect an increase in disposable income or some combination of the two. We will examine each of these factors in turn and consider the nature of each of these contributions to the recent movement in the saving ratio. **Figure 4** traces the developments in total household resources, final consumption expenditure and the saving ratio over the last five years.

Consumption expenditure

Household consumption expenditure has been volatile over the current recession, with 2008 data showing a slowing in the rate of growth of expenditure until quarterly growth finally turned negative

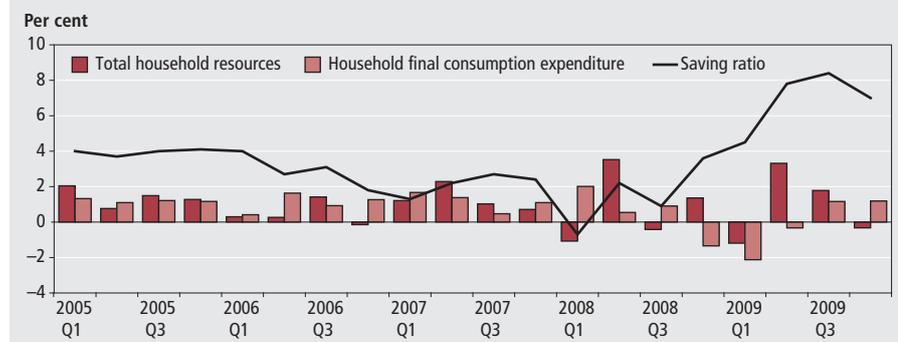
Figure 3
Developments in house prices and the stock market¹



Note: Source: Office for National Statistics

¹ The FTSE 100 and the average of the Nationwide, Halifax and Communities and Local Government house price indices (given equal weights) rebased to January 2008.

Figure 4
The saving ratio and growth of household total resources and final consumption expenditure¹



Note: Source: Office for National Statistics

¹ Current prices, seasonally adjusted, quarter on quarter growth rates.

Figure 5
Households final consumption expenditure growth¹



Note: Source: Office for National Statistics

¹ Current prices and constant prices, seasonally adjusted.

into quarter four. Consumption growth fell quite markedly, concurrent with the period of deterioration in the labour market and in the aftermath of the worst period of balance sheet uncertainty for the financial sector (immediately following the collapse of Lehman Brothers in September 2008). Expenditure has started to recover slowly in the final two quarters of 2009 and is now close to the level seen at the start of 2008

in current prices. However, considering consumption outside of the context of the saving ratio, it is of more interest to consider constant price data, which indicated that the fall in consumption was less steep but for a longer period of time (Figure 5). In constant price terms, household final consumption expenditure was 3.8 per cent lower in 2009 Q4 than at the peak in 2008 Q1.

The contributions to the more protracted period of decline in consumption expenditure in constant price terms comes as services and non-durable goods (including food) growth falls off earlier and continues to offer a negative contribution into the third and fourth quarters of 2009.

As the financial crisis began to unfold, through the deterioration in economic growth and subsequent labour market losses, individuals' and households' motives for holding money began to change. It is generally considered that households will save as a precaution against future periods of expected low income, such as those experienced through an economic downturn. This has been clearly evident through the recession, with households increasing their saving and paying down debt. However, saving has also increased as a result of the deterioration in households' demand for money to fund expenditure and diminishing speculative demand, the demand for liquid assets - to take advantage of short term money making opportunities - as a result of declining house and asset prices (See Figure 3).

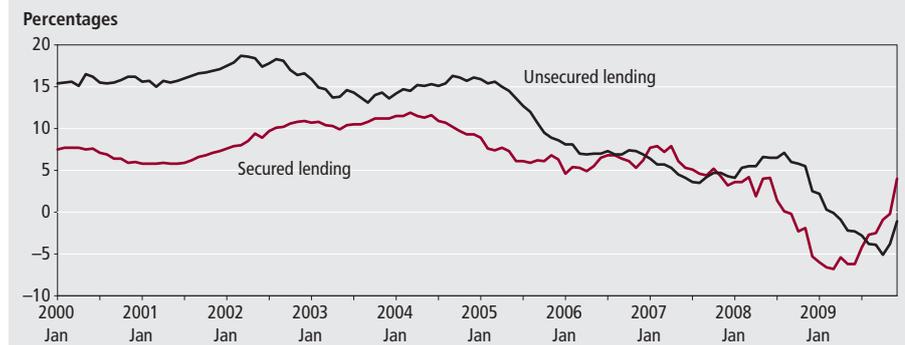
The nature of this recession has ensured that other factors have placed downward pressure on the path of consumption expenditure. Restrictions on the availability of secured and unsecured credit increased as commercial banks' risk appetite tightened in the face of increasing losses. The Bank of England's credit conditions survey outlines the financial sector's lack of appetite for unsecured lending which is borne out by lending data shown in Figure 6. In contrast the appetite for secured lending, particularly for the purchase of houses, recovered somewhat as financial markets and house prices began to recover.

Developments in house prices are likely to have had an additional impact on consumption expenditure through the deterioration in available equity for withdrawal, as house prices did not reach a trough until April 2009 (just over four quarters into the recession).

Growth in housing equity withdrawal began to slow down into 2008 turning negative into 2009 (Source: Bank of England). This highlights not only the reduction in the volume and value of housing market transactions, but also the increasing risk aversion of households who have begun to borrow less than the amount needed for housing investment.

As well as pushing down on the level of consumption, the economic downturn has, at present, altered the make up of goods and services consumed by households. Figure 7

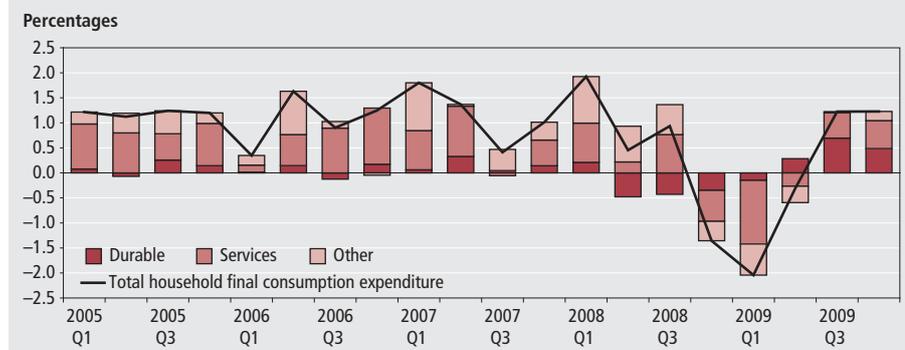
Figure 6
Growth rate of monetary financial institutions net secured and unsecured lending to individuals¹



Note: Source: Office for National Statistics

1 Month on same month one year before, seasonally adjusted.

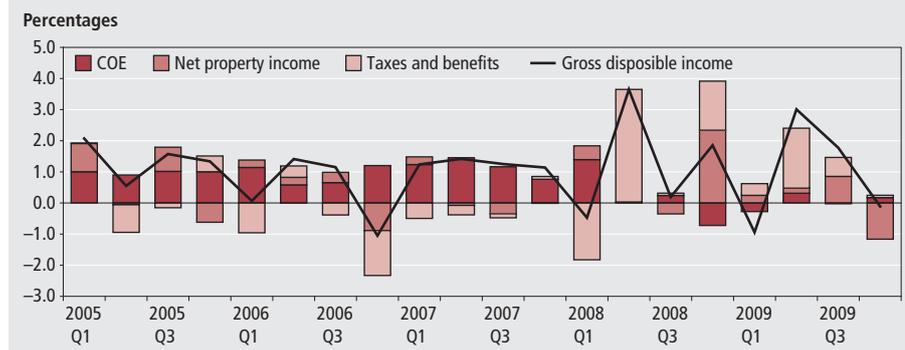
Figure 7
Contributions to HHFCE growth¹



Note: Source: Office for National Statistics

1 Current prices, seasonally adjusted.

Figure 8
Contributions to the growth in gross disposable income¹



Note: Source: Office for National Statistics

1 Quarter on previous quarter growth, current prices, seasonally adjusted. Component contributions will not add to the total as not all components are displayed.

illustrates that there has been a shift in the contribution of durable goods and services expenditure to total consumer expenditure. Expenditure has been substituted away from services and durable goods (such as cars) towards non-durable goods. The decline in expenditure is to be expected, given the observations regarding the growth in precautionary saving. The developments in the mix of spending, further supports

this as consumers reduce non-discretionary services and big ticket spending on durable goods to support both saving and non-discretionary spending on items such as food and energy.

It is possible to observe the impact of the car scrappage scheme in 2009 as durable goods begin to contribute positively to household consumption expenditure growth. Without this positive contribution

from durable goods, the position of household expenditure would have been considerably weaker in the second half of 2009.

Further theoretical consideration of these developments was provided by Chamberlin (2009). Revisiting this analysis provides additional context to the idea that declining consumption and the paying off of debt combined with supportive monetary policy, lead to an increase in the saving ratio.

Economic theories of consumption

If consumption is based on a long-term view of income, then it might fall in the current period if economic conditions deteriorate to the extent that households' expect their lifetime incomes to have been reduced. This theory is known as the permanent income hypothesis.

Surveys conducted by the Bank of England for their November 2008 and February 2009 *Inflation Reports* indicate that income expectations have indeed been lowered. This might be as a result of both reduced wage expectations and anticipated future increases in taxation. Beyond this, the expectation of lifetime wealth, also considering assets may also be of importance. However, the ability to value assets over a lifetime is more difficult in response to cyclical fluctuations and the impact in this context is not as well defined.

The theory of Ricardian equivalence states that households will anticipate that any tax cut in a downturn to encourage consumption will have to be offset by increased taxation in the future. As such, it is rational to recognise this increased future liability and save all of the gains brought about in the current period. As such, this would limit the positive influence fiscal policy can have upon household consumption expenditure in aggregate terms.

Disposable income

Disposable income is the total income available to households to use for consumption or saving, and it represents the denominator in the saving ratio calculation.

Figure 8 shows the development of gross disposable income and its components since the beginning of 2005. It outlines that gross disposable income has remained relatively buoyant, albeit volatile through this recession.

An increase in disposable income would be expected to increase the saving ratio holding all other factors constant. However, as income increases a proportion of this

increase is usually given to consumption which will influence the impact upon saving. Income increases from some components may be associated with a different consumption effect than others. For instance, households may be able to budget more readily for changes in wages and salaries and adjust consumption in a measured manner, whilst a change in incomes through interest rate movements may take longer to feed through into households' budget decisions.

Part of the strength of income growth is consistent with the operation of automatic stabilisers – taxes and benefits – which have supported income through the recession and offset part of the negative impact of the deterioration in compensation of employees (COE) defined as the total amount paid out in wages and salaries including employers' pension and insurance contributions.

The component series are quoted as 'net'; this is in the context of the balance between resources and uses rather than any consideration of depreciation of assets within income.

For instance, net property income is equivalent to property income receipts (resource) minus property income payments (use). As property income as a whole is classified as a component of income, property income payments are treated as a negative factor on income rather than a positive consumption expenditure.

Since 2008 Q1 growth in total COE has been weak, in fact turning negative in 2008 Q4 and 2009 Q1. As such, the contribution of COE to total gross disposable income growth has deteriorated.

Although this movement in COE is

in line with the recession of the early 1990s, the response is more muted than seen in the 1980s recession. This could in part be explained by the flexibility in the labour market, with firms maintaining employment relative to previous recessions, and many firms offering lower wages or reduced hours in an attempt to keep redundancies at bay. Also, the current recession saw a decline in the prevalence of high bonuses, particularly in the financial sector. This, added to the efforts of firms to maintain their workforce through lower wages and hours, could have contributed to the current weakness in COE. Finally, it is also worth considering the effect of the high level of inflation seen in the early 1980s as this is likely to have put upwards pressure on earnings and therefore supported compensation of employees throughout that recession (especially as data are in current prices).

Taxes on income and wealth have also contributed positively to growth in gross disposable income for several quarters of the current recession. Economic theory suggests that income and wealth will be lower in a recession, due in part to lower levels of employment and lower earnings growth, and therefore tax receipts will also be lower. The extent of the observed fall in taxes however, has been surprising given the relative resilience of the labour market. This may to some extent reflect the loss of income by high earners, including lower bonuses, who contribute disproportionately to tax revenues.

Average Weekly Earnings (AWE) data in **Figure 9** not only confirms the decline in bonus payments, but the deterioration in total pay. The combination of these two

effects clarifies the decline in tax receipts on income.

The movement in taxes and benefits in the current recessionary period is consistent with lower earnings and the rise in unemployment. Within this series, social contributions, which are linked to earnings, have been weak, which is in line with the weak contributions from compensation of employees. Higher unemployment would also generally lead to an increase in unemployment benefits thereby adding to income growth. However, given the resilience of the labour market through the current recession, it follows that these effects have been more muted than in the past.

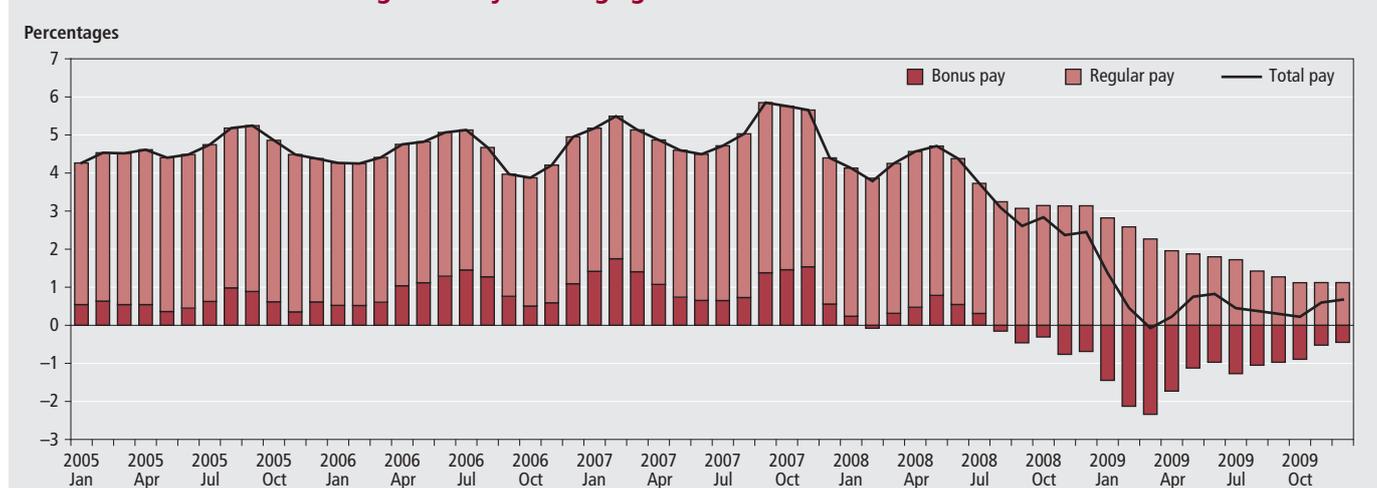
Figure 10 shows that taxes on income (predominately PAYE) as a proportion of income has fallen since its peak in the first quarter of 2008. The scale of decline from peak to current trough is greater in the current period than it was in the 1990s.

It is a decline in taxes on income that has been driving the positive contribution to disposable income. This is to be expected, as income from property has fallen, in line with housing market developments. Also profits of sole traders will have been hit harder than established sizeable limited companies and pension values will have been hit by the decline in stock markets.

Another driver of the change in household disposable income is net property income, which includes rent, interest, distributed income of corporations and the property income component of insurance policy holders (For definitions of components see the **Annex** to this article).

Property income has fallen considerably since early 2008. Both payments and

Figure 9
Contributions to total average weekly earnings growth¹



Note:

¹ Three months on the same three months a year ago.

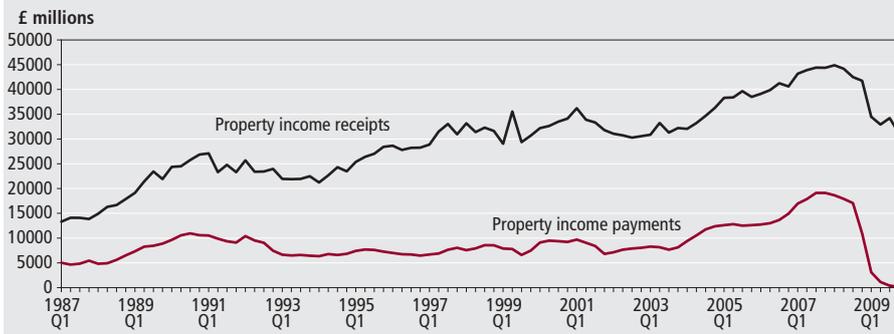
Source: Office for National Statistics

Figure 10
Income tax as a percentage of household disposable income¹



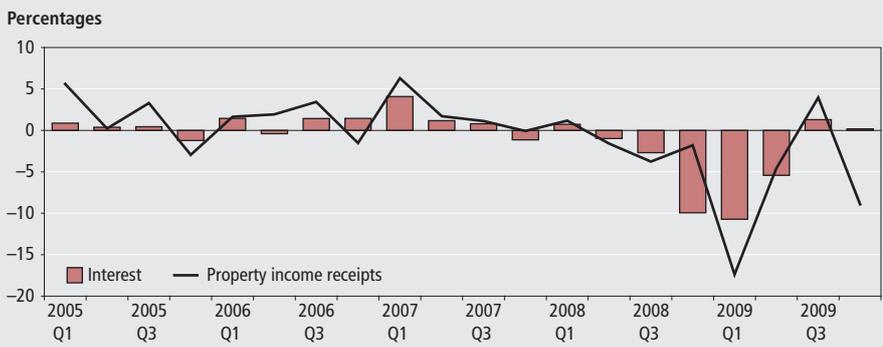
Note: Source: Office for National Statistics
1 Current prices, seasonally adjusted.

Figure 11
Property income receipts and payments¹



Note: Source: Office for National Statistics
1 Current prices, seasonally adjusted.

Figure 12
Contributions to growth in property income receipts¹



Note: Source: Office for National Statistics
1 The component contributions will not add up to the total as not all components are displayed.

receipts of the household sector have fallen, but payments have fallen more, thereby resulting in a positive contribution to net incomes (See **Figure 11**).

Property income payments consist largely of interest payments. Interest payments (and receipts) in this context refer to the risk free element derived from the underlying reference rate (the London inter-bank offer rate - LIBOR) with the difference between this risk free rate and the offered market rate for borrowing and

lending reflecting a risk premium on the part of individuals and institutions. As such, interest data are heavily influenced by movements in the Bank of England policy rate.

The market element of interest payments is captured by the risk premium and is given by the indirect measure of financial intermediation (FISIM – See Akritidis 2007 for methodology) and is allocated to consumption as the counterparty to output data for the financial sector.

Large movements in interest payments are consistent with a reduction in interest paid on mortgages as rates fell in 2008/2009 and, with commercial banks’ balance sheets under pressure, the appetite and ability to extend credit being severely curtailed.

In comparison, interest accounts for a much smaller proportion of property income receipts and data are therefore influenced less heavily by movements in the reference rate of interest.

Through the most recent recession, with the exception of 2009 Q3, property income receipts have fallen. **Figure 12** shows that this fall has been driven by falls in interest receipts, movements in the other components’ have generally been more volatile and their contributions less significant.

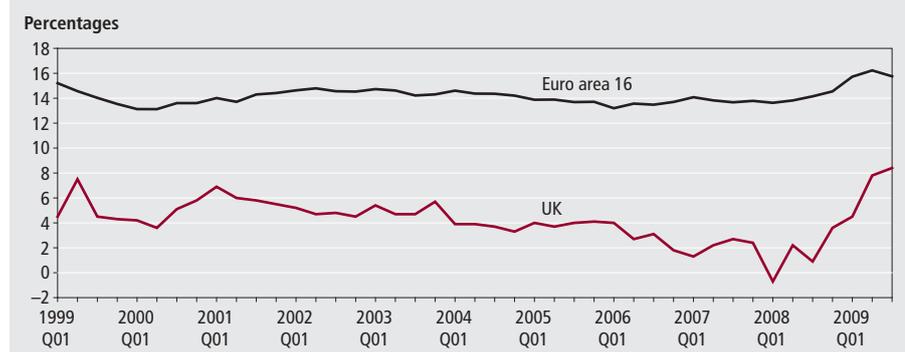
Households total interest payments have been much larger than receipts, reflecting the high levels of indebtedness in the household sector when compared to its lending position to other sectors. This means that when the reference rate of interest fell as the Bank of England policy rate fell it effected households asymmetrically, providing greater impact to interest payments than receipts.

International comparisons: the US and the Eurozone

The methodology for calculating the Eurozone saving ratio is identical to that employed in the UK. **Figure 13** traces the development in the ratio for both the Euro Area and the UK over the last 10 years. There are two differences between the developments in the UK and the European rates. Firstly, the saving ratio in the Euro Area has been persistently above that of the UK over the period considered, reflecting Europeans’ propensity to spend less of disposable income and to save more resources than their UK counterparts. The second observation is that the ratio has been much more stable in the euro area in comparison with that in the UK.

The stable growth in consumption in the euro area emphasises its more balanced economic growth pattern versus that of the UK, which has been more dependent on consumption as a key driver of growth over the last two decades. This partly reflects the financial sectors’ special role in the UK over this period and the accompanying credit growth and liberalisation of lending requirements. The Euro Area has been more dominated by export intensive and consumption light Germany; and France, which has generally run a small surplus or deficit in proportion to GDP as a whole

Figure 13
UK and Euro Area 16 saving ratio



Source: Office for National Statistics, Eurostat

(though this has deteriorated somewhat in the most recent period) and where household consumption growth has been closer to overall GDP growth.

In the US the saving ratio is calculated from two perspectives. The first measurement is made through the National Income and Product Accounts, an approach similar to that used in the UK. Here gross saving is determined as the difference between disposable income from labour, property and wealth less consumption. A flow of funds approach is used to produce the second measurement, where gross saving is calculated as the change in household net wealth between the current and previous period. For consistency purposes it is the saving ratio produced from the first approach that we will compare with that of the UK.

The US ratio has exhibited similar developments to those in the UK, declining through recent times and then subsequently recovering through the economic crisis (see **Figure 14**). Like the UK, US citizens had easy access to credit, high levels of

employment and income and growing wealth positions through increasing housing and equity prices. All of these factors have to a greater or lesser extent increased consumption relative to income, driving down the saving ratio.

A key feature to observe is that the US saving ratio began to recover more quickly than that of the UK. This is believed to be as a result of the crisis arising and impacting directly on the US economy. US households will have therefore been ahead of UK counterparts in changing their saving and consumption behaviour in response to the deterioration in household balance sheets. Recent improvements in the growth of US house and asset prices, along with a relative improvement in the labour market are believed to be the factors underpinning the decline in the US saving ratio in the latest period, as the series does not rebound as sharply as in the UK.

Conclusion

The saving ratio in the UK had been declining since the early 1990s as the

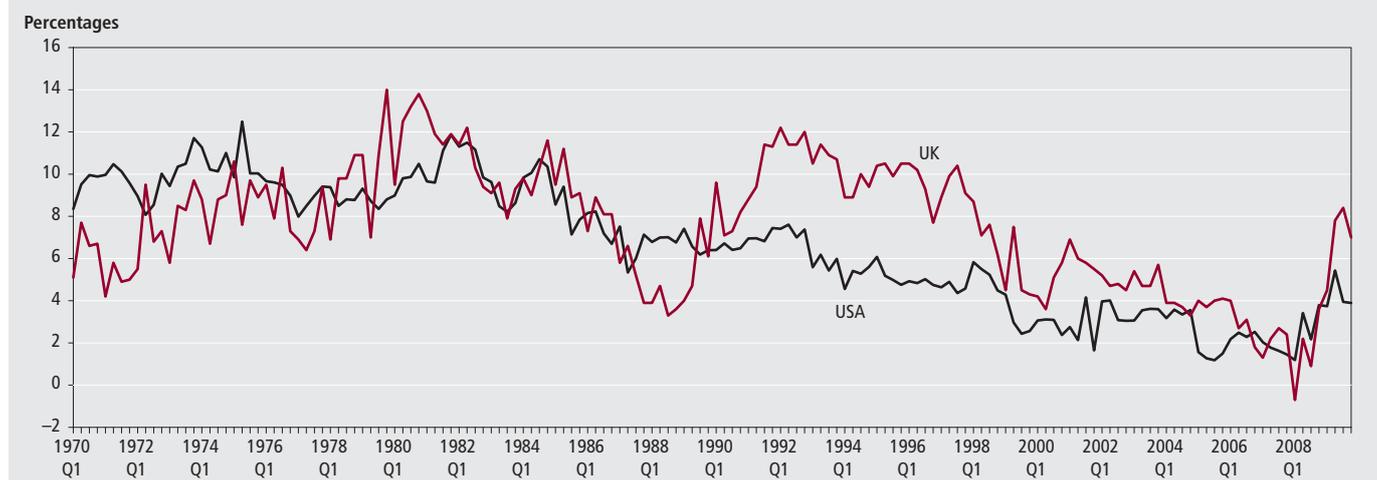
household sector increased its consumption expenditure at a greater pace than its disposable income. This partly reflects a period of sustained economic growth and the increased consumption which comes with economic prosperity. It also reflects the increased reliance upon cheap and easy credit which came about as a result of financial deregulation and the increased importance of the financial sector in the UK economy.

This path of decline reversed sharply as the recession developed, as the saving ratio increased from a low point of -0.7 per cent in Q1 2008 to a recent high of 8.4 per cent in Q3 2009. This increase in saving reflects a rational response to the deterioration in household balance sheets, to increased economic uncertainty and the increased precautionary need to hold liquid assets.

Household consumption expenditure has fallen significantly in volume terms and was still 3.8 per cent below its peak in Q1 2008 in the final quarter of 2009. Expenditure on services fell significantly at the end of 2008 and in the first half of 2009, whilst expenditure on durable goods started to fall earlier in the year. The impact of the car scrappage scheme can be seen in Q3 and Q4 2009, as expenditure on durable goods stopped falling in volume terms and grew strongly in current price terms.

Personal income growth has remained relatively buoyant over the recession, though it has suffered from an increased degree of volatility. Where compensation of employees had previously supported growth in incomes, it has weakened over the second half of 2008 and 2009 as earnings growth and employment have weakened. However, the positive contribution of net interest

Figure 14
UK and USA saving ratio



Source: Office for National Statistics, Bureau of Economic Analysis(US)

payments has helped to support income as the Bank of England policy rate was reduced rapidly and markedly.

Note

- 1 Non-Profit Institutions Serving Households (NPISH) are units formed by groups of households in order to supply services to themselves or to other households on a non-commercial basis. NPISHs include political parties, trade unions, religious organisations, sports and bridge clubs, cultural associations, charities and associations with philanthropic aims (eg Red Cross) and certain charitable foundations. Lequiller and Blades (2006)

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FURTHER INFORMATION

Further information on household final consumption expenditure (HHFCE) can be found in *Consumer Trends*.

Further information on the saving ratio can be found in the *Quarterly National Accounts statistical bulletin*.

ACKNOWLEDGEMENT

The authors would like to thank Grant Whiting for his valuable input.

ANNEX**Classifying property income in the National Accounts**

Property incomes are classified in the following way in the National Accounts:

Interest

Under the terms of the financial instrument agreed between them, interest is the amount that the debtor becomes liable to pay to the creditor over a given period of time without reducing the amount of principal outstanding.

This form of property income is receivable by the owners of deposits, securities other than shares, loans, and other accounts receivable.

Interest paid decreases by the FISIM on loans, and interest received increases by the FISIM on deposits.

Distributed income of corporations**Dividends**

Dividends are a form of property income received by owners of shares to which they become entitled as a result of placing funds at the disposal of corporations.

Withdrawals from income of quasi-corporations

Withdrawals from the income of quasi-corporations consist of the amounts which entrepreneurs actually withdraw for their own use from the profits earned by the quasi-corporations which belong to them.

Property income attributed to insurance policy holders

Property income attributed to insurance policy holders corresponds to total primary incomes received from the investment of insurance technical reserves. Insurance technical reserves are invested by insurance enterprises and pension funds in financial assets or land (from which net property income, i.e. after deducting any interest paid, is received) or in buildings (which generate net operating surpluses). Any net income received that results from the investment of insurance enterprises' own funds is to be excluded in proportion to the ratio between own funds and a sum of own funds and insurance technical reserves.

Rent**Rents on land**

The rent received by a landowner from a tenant constitutes a form of property income.

This heading also includes the rents payable to the owners of inland waters and rivers for the right to exploit such waters for recreational or other purposes, including fishing.

Rents on land do not include the rentals of buildings and of dwellings situated on it; those rentals are treated as the payment for a market service provided by the owner to the tenant of the building or dwelling, and are shown in the accounts as the intermediate or final consumption of the tenant unit.

Rents on sub-soil assets

This heading includes the royalties that accrue to owners of deposits of minerals or fossil fuels (coal, oil or natural gas) who grant leases to other institutional units permitting them to explore or to extract such deposits over a specified period of time.

Quasi-corporations are unincorporated enterprises that operate as though they are corporations. As such they are self-contained and independent, and must have a full set of accounts. It should be possible therefore, to identify flows of income and capital between the quasi-corporation and its owner. In the UK, it is expected that only partnerships will be sufficiently separable from their owners to be classified as quasi-corporations; sole proprietor businesses will not be.

ARTICLE

Mike G Phelps
Office for National Statistics

Comparing different estimates of productivity produced by the Office for National Statistics

SUMMARY

This article describes the three different types of productivity measures which ONS publishes and examines the particular question of comparing public and private sector productivity. It shows that measures of output per person or person hour are not comparable with measures of output per unit of total input; and that measures of value-added per unit of input are not comparable with measures of gross output per unit of input. Approximate comparisons can be made of valued added productivity growth between the group of industries which include health, education and public administration and the market sector, though there is some overlap between the two.

Introduction

Productivity is broadly defined as output per unit of input and is an important indicator of the efficiency with which resources are being used. So it is natural for people to want to compare different areas of the economy to see how efficiency compares. There is particular interest in comparisons between the private sector and the public sector.

However, since both output and input can be defined in different ways, care needs to be taken that like is being compared with like. Output can be defined either as (inflation adjusted) value-added or (inflation adjusted) total output (gross output). On the input side, productivity measures sometimes look at only one input (usually persons or person-hours) and sometimes use a weighted average of all the relevant inputs that are used (including buildings and machines, for example). Measures using only labour as input are described as labour productivity, and measures that try to capture all inputs are called multi-factor productivity (MFP) measures.

Labour productivity will tend to increase faster than MFP if the amount of the non-labour inputs per person is increasing. This is because extra machinery, for example, will tend to raise the amount of output a person produces. So comparing labour productivity measures with MFP measures is not appropriate: labour productivity can rise because of increases in labour quality or increase in the availability of capital inputs (for example, computers) or other

non-labour inputs as well as pure efficiency gains.

Comparing value-added measures with total output measures is also inappropriate because value-added measures change more than the equivalent gross output measures.

This article describes the three different types of productivity measure that the Office for National Statistics (ONS) publishes and examines the particular question of comparing public and private sector productivity.

The three types of measure are:

- Value-added per person/person-hour for whole economy and industry group (labour productivity), published in a regular quarterly Statistical Bulletin
- Value-added per unit of total relevant input (a weighted average of quality-adjusted labour and capital (an MFP measure)), published as experimental statistics in Economic and Labour Market Review (ELMR)
- Gross output of publicly funded services per unit of total relevant input (a weighted average of quality adjusted labour, purchased inputs and capital (an MFP measure including purchased inputs)), published by government spending area (for example, health and education) and as an experimental total in a series of articles by the UK Centre for the Measurement of Government Activity (UKCeMGA)

ONS produces estimates of value-added per person and value-added MFP for

the market sector, the subset of industry groupings that sell their output at economically meaningful prices. The market sector corresponds most closely with common understanding of what constitutes the private sector. Defining the public sector for the purposes of comparison is not quite so straightforward. There are a group of industries that cover most of public production, including health and education. But, strictly, these industries also include some market sector activity (for example, private education) as well as the output of the non-profit institutions serving households (NPISH) sector (including, for example, charities and higher education). Value-added labour productivity and MFP growth estimates are available for this set of industries too. So productivity growth can be compared between these two categories, provided the overlap in coverage is recognised.

Provision of publicly funded services, for which UKCeMGA produces MFP estimates, is a type of expenditure, not an industry group. Some of these services, for example hip replacements paid for by the NHS but performed by independent treatment centres, are provided by the market sector. These estimates are on a gross output not a value-added basis. They should not be compared with either value-added MFP or any labour productivity estimates.

The best approximation to a public/private productivity comparison from published ONS figures is to compare the ELMR value-added MFP figures for the market sector, with value-added MFP figures for those industry groups that cover most public production and provision of public services.

What is productivity?

Productivity can be broadly defined as output per unit of input. This leads to several different definitions of productivity depending on three factors:

- how output is defined, in particular whether output is defined as value-added (total value of sales *minus* the value of purchased goods and services used as intermediate inputs) or gross output (total value of sales)
- which inputs are used to construct the input figure used, in particular whether input is simply a measure of person or person-hours or whether it is instead a more complex weighted average of all inputs used, including, for example, the annual input from fixed equipment such as buildings and machines,

and possibly differentiating between different kinds of labour input (so that an hour of specialist labour input is counted as greater input than a hour of unskilled labour input)

- which sector of the economy is being examined, in particular whether it is an industry grouping from the Standard Industrial Classification (SIC), for example manufacturing, whether it is a category of final spending, for example government provision of public services, or whether it is a sector defined by some other criterion such as the market sector, which consists of those activities that sell into a well-defined market. Some industries, for example education services, may be partly in the market sector and partly in the non-market sector and, similarly, some categories of spending, such as government provision of health services, may be partly provided directly through non-market production and partly by contracting out the provision of, for example, hip replacements to private sector contractors who form part of the market sector

Measures that use only persons or person-hours as the input measure are usually referred to as labour productivity measures (output per person, or output per person-hour). Measures that use a weighted average of many inputs as the input measure are usually referred to as multi-factor or total factor productivity.

What does ONS publish?

There are three types of productivity release produced by ONS; further details on each can be found in the ONS Productivity Handbook¹.

The Statistical Bulletin on Productivity

The Productivity Statistical Bulletin² is published quarterly. The output measure used is value-added, derived from the relevant National Accounts release. The input measure used is labour, giving estimates of labour productivity (per worker, per job, per hour worked) for the whole economy. The figures come from the Labour Force Survey (LFS).

The productivity measures are broken down mainly by industry. Figures are available for whole economy; agriculture, forestry and fisheries; production industries; and services. Within production industries, manufacturing is separately identified and there is a further detailed

breakdown within manufacturing. Within services, productivity figures are presented for distribution, hotels and catering; transport, storage and communication; and finance and business services. For the sectoral analysis, the labour input figures are based on reporting unit data derived from the workforce jobs series, but constrained so that the total equals the total from the LFS.

In addition to these industrial sector figures, experimental figures are also published for the market sector. The headline figure in the statistical bulletin is output per worker.

Experimental estimates of multi-factor productivity

Experimental estimates of multi-factor productivity (MFP) for the whole economy have been produced and published in Economic and Labour Market Review³.

The output measure used is value-added, derived from the relevant National Accounts release. The inputs distinguished are quality adjusted labour input (QALI) and capital services, so it is a multi-factor productivity measure. Labour inputs in hours are quality adjusted using data drawn from the Labour Force Survey (LFS) on qualifications and experience (proxied by age and gender). The estimates of the quantity of labour input come from the same sources as those in the Productivity Statistical Bulletin. The quality adjustment is published in ELMR⁴. The measure of capital input is capital services and is also published in ELMR⁵.

The estimates are broken down mainly by industry. Industrial disaggregation is limited by the sample sizes available in the LFS, which mean that accurate estimation of very disaggregated QALI is not possible. Estimates of MFP over the period 1998–2007 are given for the whole economy, and for various industry groupings. These include the group of industries classified as Sections L, M, N, O, P and Q (hereafter referred to simply as LMNOPQ): that is public administration and defence, education, health and social work, and other social and personal services. No MFP breakdown is currently available at any lower level for this group, though work is ongoing to develop a more detailed breakdown. The group is close in concept to the provision of public services, but it also includes private-sector-produced and NPISH-produced output which is sold directly to the personal sector, for example private education and healthcare.

As well as these industrial breakdowns,

the article also provides MFP estimates for the market sector for the period 2001–2007. The market sector is broadly that part of the economy which sells its output at meaningful economic prices. It is defined as Sections A to J of the Standard Industrial Classification (SIC) plus Section K excluding the imputed rental for owner-occupiers, that part of Section M (education) which is not provided by general government (note that this therefore includes universities and further education), Section N (health and social work) excluding that part provided by state health services and excluding social work and probation services carried out by government employees, and Section O (other community, social and personal service activities) excluding sewage and refuse disposal and environmental activities provided by local government and library and museum and recreation and tourism activities provided by local government. There is therefore some overlap between the market sector and the sector defined as LMNOPQ (note that the output of Q – extra-territorial organisations – is zero for the UK).

Figure 1 shows average annual MFP growth for the whole economy, the market sector and LMNOPQ.

UKCeMGA estimates of total public service productivity

UKCeMGA was set up following a recommendation from the Atkinson Review. It has published a series of articles giving estimates of public service productivity⁶, most recently estimates of total public service productivity for the period 1997–2007 (See Munro and Phelps 2009).

The output measure is a measure of the volume of the gross output (value-added plus intermediate inputs) of publicly funded public services (a component of GDP(E) (GDP expenditure approach), not GDP(O) (GDP output approach)). It is not a value-added measure. (Because the estimates use gross output, the inputs measure includes intermediates as well as labour and capital.) And the gross output measure also includes quality adjustments that are not yet in National Accounts, which introduces further differences from the output measures used in the Productivity Statistical Bulletin and in the ELMR article.

The input measure used is a cost-weighted average of labour inputs, intermediate inputs of goods and services (included to match the output measure) and annual capital input. Labour is quality

adjusted by differentiating different types of labour, for example, doctors and nurses, or teachers and teachers’ assistants, not by using the standardised QALI approach described previously (which is not possible to reproduce at this level of disaggregation). The cost-weights are based on the total cost of each type of labour. The data comes from a variety of administrative sources; some of them direct measures of hours or quantities, others derived from expenditure data by applying appropriate deflators.

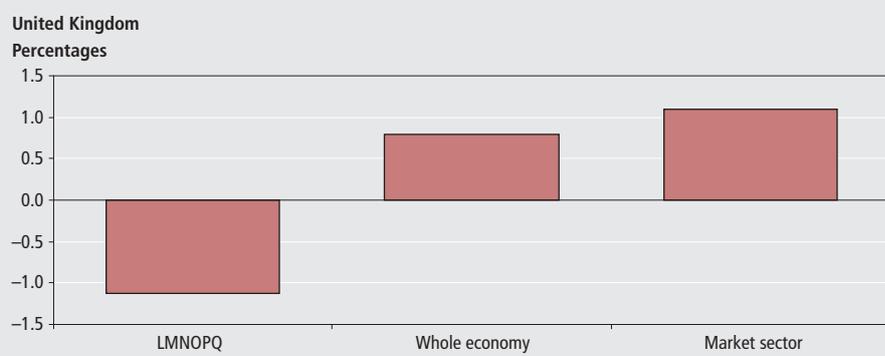
UKCeMGA measures, unlike any of the other measures so far discussed, are for a category of final spending, not an industrial sector. The estimates are broken down into various Classification of Functions of Government (COFOG) groupings, such as health or adult social care. These categories are close, but not identical, to the industrial categories covered in LMNOPQ. However those categories also include output produced for the personal and NPISH sectors. And UKCeMGA measures can be broken down to a low level, whereas the value-added multi-factor productivity measure for LMNOPQ is only available for the group as a whole.

Figure 2 shows the percentage change in output, input and productivity since 1997 for total public services.

What is the relationship between the different measures?

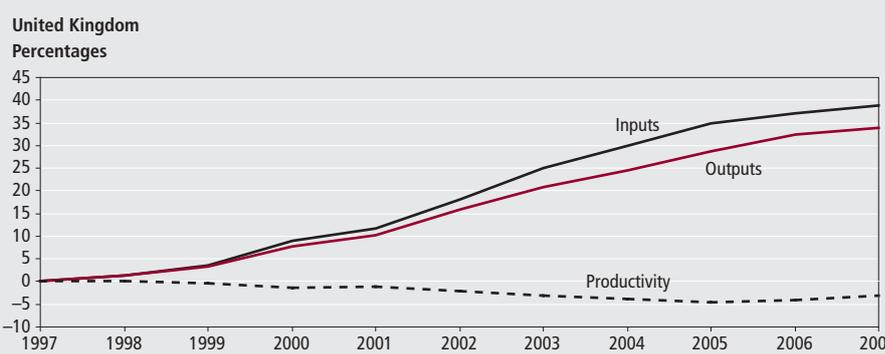
The relationship between multi-factor productivity and labour productivity is straightforward. For example, using value-added as the output measure, the proportionate change in labour productivity, using value added per person-hour, can be decomposed into several parts⁷. First is that part explained by changes in the quality of labour. If labour quality improves output would be expected to increase even if the number of hours of labour input were unchanged. Second is that part explained by changes in the amount of capital (fixed equipment such as computers, machine tools and so on) per person-hour. More capital per person will raise output without any increase in labour effort. Finally there is the remainder, which is multi-factor productivity growth. This picks up all the other factors including the efficiency of organisation (for example, better co-ordinated workflows and the

Figure 1
Average annual multi-factor productivity growth, 2001–2007



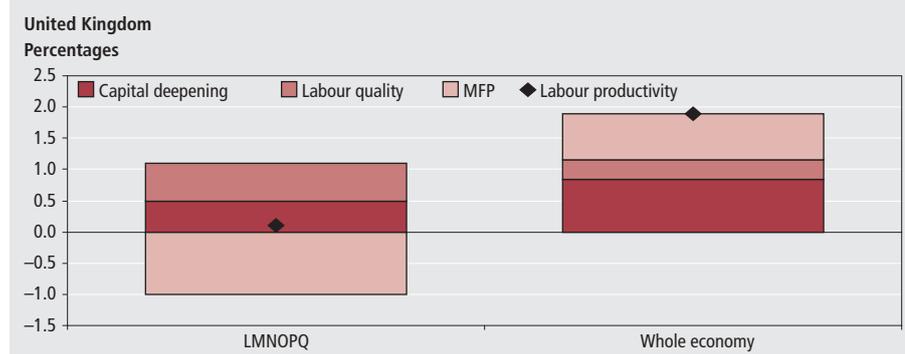
Source: Office for National Statistics

Figure 2
Cumulative change in output, input and productivity in publicly funded services



Source: Office for National Statistics

Figure 3
Decomposition of annual average labour productivity growth, 2001–2007



Source: Office for National Statistics

amount of labour effort). So, if labour quality is increasing and more capital equipment is being used per person-hour then labour productivity growth will exceed multi-factor productivity growth.

Similar relationships hold if gross output is used instead of value-added; but then we also have to include the contribution of intermediate inputs as an additional component.

There is also a simple relationship between gross output productivity and value-added productivity, derived by Bruno (1978) (see OECD (2001) *Productivity Manual* Chapter 3): the rate of change of value-added based multi-factor productivity (MFP) equals the rate of change of gross output based MFP multiplied by the reciprocal of the nominal share of value-added in gross output (assuming both value-added and gross output refer to the same producing sector and assuming inputs are measured in the same way). The nominal share of value-added in gross output (the ratio of value-added to turnover) is less than one, so its reciprocal is greater than one. Therefore value-added productivity measures will move proportionately more than gross output productivity measures, and these differences will be magnified if the share of value-added in gross output decreases over time (as would happen if, for example, outsourcing rises over time).

Can the different estimates be sensibly compared?

Comparisons should be like with like. Comparing labour productivity measures for one sector with MFP estimates for another is potentially misleading. Some of the difference between the measures will reflect differences in the equipment used per person-hour and in labour quality rather than pure efficiency. Insofar

as equipment and labour quality are increasing, then labour productivity growth for any sector will exceed MFP growth.

Figure 3 shows the breakdown of whole economy MFP growth as published in ELMR. It clearly shows that capital intensity and labour quality were increasing over this period, so labour productivity growth exceeded MFP growth.

Since all the estimates in the Productivity Statistical Bulletin are of various labour productivity measures, none of them are directly comparable with the MFP estimates.

ELMR estimates of MFP growth are not comparable with UKCeMGA measures of MFP because they differ across three dimensions.

- ELMR estimates use value-added as the output measure, whereas UKCeMGA uses gross output and includes quality adjustments in health and education which are not, yet, included in the National Accounts
- ELMR estimates are either for SIC categories or for the market sector, whereas UKCeMGA estimates are for output procured to provide government services, whether produced by government or by market sector or NPISH producers
- ELMR estimates use QALI (and exclude intermediates), whereas UKCeMGA measures labour quality on a more disaggregated basis by taking account of occupational structure

Note that because value-added MFP growth for a well-defined sector is equal to the reciprocal of the share of value added in gross output multiplied by gross output productivity growth, estimates of value-added productivity for public services would be more negative than

those published by UKCeMGA, so the gap between public sector and market sector would be larger than simple comparisons would suggest. But if, instead, market sector estimates were adjusted to bring them onto a *gross output* basis, the market sector growth rates would be smaller and the gap between public service and market growth rates would be smaller than simple comparisons would suggest.

Are gross output or value-added measures preferable?

This raises the obvious question of which is the right comparison? It can be shown (see OECD (2001) *Productivity Manual* Chapter 3) that if technical progress affects all inputs proportionately (Hicks neutrality) then gross output productivity measures give estimates of underlying technical progress (assuming everyone is technically efficient to start with) and this is not true for the value-added measure. The value-added measure, because it depends on the share of value-added in gross output, depends not just on technology but also on the time paths of outputs, inputs and prices. It can be thought of as a measure of the ability of an industry to translate technical change into income and final demand. Value-added would precisely measure only technical change if technical change, instead of affecting all inputs equally, affected only primary inputs of capital and labour. However, this does not often seem to be the case. So the two measures are answers to different questions.

Are there comparable estimates for the public and private sectors?

There is much interest in comparing public sector performance and private sector performance. But it is important to be clear about what precisely constitutes the public and private sectors.

What most people mean by the private sector most closely corresponds to the market sector, which consists of those producers who sell their output at meaningful economic prices. ONS productivity estimates for this sector are based on value-added and are available for both labour productivity and MFP measures.

Defining the public sector is not straightforward. The public sector in National Accounts is defined as a set of institutions: central government, local government and public non-financial corporations. These institutions both provide output directly, for example local

authority provision of education, and also arrange for buying services from the market sector or the NPISH sector (at economically meaningful prices) to be provided to persons (at zero or subsidised prices), for example hip operations provided to NHS patients by independent treatment centres.

A definition of the public sector comparable to the market sector would be the output of producers who do not sell at economically significant prices and are within the public sector. The closest approximation to this for which productivity estimates are published by ONS is the total of categories LMNOPQ of SIC (as defined earlier in the article). However, as already noted, this also includes some market sector activity (including activity of the not-for-profit institutions). Estimates for MFP for both of these 'sectors' were published in ELMR in March 2009 (see Munro and Phelps 2009). The estimates show that annual MFP growth in the market sector between 2001 and 2007 was 1.1 per cent, whereas for LMNOPQ it was approximately minus 1.0 per cent. Whole economy annual MFP growth over this period was 0.8 per cent.

UKCeMGA figures relate to the output bought by public funding and provided to, or on behalf of, people, regardless of who produces it. Some of the output is directly produced by the public sector as defined in the National Accounts, but some is produced by the market sector. The measure is a measure of final expenditure and is, therefore, a gross output measure. None of the other productivity figures ONS produces are on a gross output basis.

Conclusion

Existing ONS publications do not allow a straightforward comparison of productivity growth between public and private sectors. In particular, ONS does not publish a figure for the market sector that is directly

comparable to the figure produced for MFP growth in the provision of gross output of public services.

The nearest approximation to a comparable public/private comparison using existing published figures would be to compare the growth of value-added in relation to the growth in inputs of capital and quality-adjusted labour for the market sector, as an approximation to the private sector, with that for the sum of industries LMNOPQ, which include most (but not all) of public service output as well as some market sector and NPISH sector output. ONS will investigate whether a better comparison of public and private sector productivity growth can be made available.

Notes

- 1 The Productivity Handbook, published in October 2008, brings together all ONS productivity measures and theories, and explains how they are sourced and formulated. This is available for download at: www.ons.gov.uk/about-statistics/user-guidance/productivity-handbook/index.htm
- 2 The latest version of the Productivity Statistical Bulletin is available at: www.statistics.gov.uk/StatBase/Product.asp?vlnk=7476
- 3 Turvey A (2009) 'Multi-factor productivity: estimates for 1998 to 2007', *Economic and Labour Market Review* vol. 3, no. 3, pp 33-38. Also available at: www.statistics.gov.uk/cci/article.asp?ID=2147
- 4 Goodridge P (2009) 'Quality adjusted labour input: estimates for 1997 to 2007', *Economic and Labour Market Review* vol. 3, no. 1, pp 62-66. Also available at: www.statistics.gov.uk/cci/article.asp?ID=2102

- 5 Turvey A and Wallis G (2009) 'Volume of capital services: estimates for 1950 to 2007', *Economic and Labour Market Review* vol. 3, no. 1, pp 53-61. Also available at: www.statistics.gov.uk/cci/article.asp?ID=2105
- 6 For more information on UKCeMGA including a full set of publications visit the website at: www.ons.gov.uk/about-statistics/ukcemga/index.html
- 7 The exact relationship is that the proportionate change in labour productivity is equal to the proportionate change in labour quality per person-hour multiplied by the share of labour costs in total value-added plus the proportionate change in capital input per person-hour times the share of capital in total valued added plus the proportionate change in multifactor productivity.

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ARTICLE

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Labour productivity measures from the ABI: 1998 to 2007

SUMMARY

This article presents current price labour productivity estimates using published data from the Annual Business Inquiry (ABI). The article updates the work of Goodridge (2007) and Daffin and Lau (2002) in presenting estimates for the years 2006 and 2007. A new development presented in this article are constant price labour productivity measures which have been formulated using Producer Price Indices (PPI) and the experimental Services Producer Price Indices (SPPI) to deflate output. These enable a more accurate analysis of industry labour productivity trends over time. It is found that capital intensive industries generally exhibit both higher levels and growth in labour productivity over the sample period.

The Annual Business Inquiry (ABI) was introduced by the Office for National Statistics (ONS) between 1998 and 2001. The ABI brings together employment (ABI/1) and financial/turnover (ABI/2) data into one survey where previously it was collected using the Annual Employment Survey, Annual Census of Production, Annual Census of Construction and Distribution and Service Inquiries¹. Although there has since been some divergence between the two parts of the ABI (see Gough 2009), so care should be taken in interpreting changes over time, the development of the ABI has allowed for the aggregates to be collected using a reasonably common methodology, resulting in greater consistency between input and output data. Coherent labour productivity estimates can therefore be produced at a detailed level.

The ONS Productivity Statistical Bulletin contains quarterly labour productivity estimates for the whole economy, broken down into Total production industries, Total manufacturing, Agriculture, forestry and fisheries, Total services, and a number of selected service industries. These estimates are based on chained-volume measures of gross value added (GVA). Breakdowns for subsections of manufacturing are also presented. Additionally, the Statistical Bulletin contains estimates for the market sector on an experimental basis. The Productivity Statistical Bulletin and associated data sets can be found at www.statistics.gov.uk/statbase/product.asp?vlnk=7476.

Labour productivity estimates in the Productivity Statistical Bulletin differ from those presented in this article in the following ways:

- the Statistical Bulletin estimates use an output measure from the National Accounts. The employment measure mainly comes from the quarterly Short Term Employment Survey which are benchmarked to annual ABI data. These data are then joined with estimates of self-employment, government supported trainees and HM forces for the appropriate industries before the totals are constrained to the Labour Force Survey whole economy figures. This results in reduced consistency between the output and input data, largely arising from the coherence and balancing adjustments made to the National Accounts. In contrast, the estimates presented in this article are based on ABI data that have not undergone National Accounts adjustments
- additionally, the estimates presented in the Statistical Bulletin are in constant prices, whereas those presented here are in current prices. While the current price format does not allow for the analysis of trends in productivity over time, it does facilitate comparisons in the levels of productivity across industries for a given reference year
- most importantly, the estimates presented in this article contain a more detailed industry breakdown according

to the Standard Industrial Classification 2003 (SIC 2003), than is available in the Statistical Bulletin

The published ABI data, on which these labour productivity estimates are based, can be found at www.statistics.gov.uk/abi. National, rather than regional, employment estimates from ABI/1 have been used as these are provided on a consistent basis with ABI/2 data. Finalised data are available 18 months after the end of a given reference year. The most recent finalised data available relate to the 2007 reference year. It is important to note that ABI revisions arising from quality and omissions issues are only taken back two years. This means that the ABI is only consistent on a rolling basis for the reference years 2007 and 2006 which should be taken into account when interpreting the time series of estimates. Approximate GVA per job estimates are not available prior to 1998. This is because although approximate GVA data are available from the ABI from 1995 onwards, an employment measure consistent with this is not available until 1998².

Quality issues

The output measure used in the production of these results is 'approximate' GVA in basic prices. This differs from the GVA estimates published in the Input-Output Supply and Use Tables which are compiled in accordance with the 1995 European System of Accounts (ESA 95). The primary differences between the two are that the approximate GVA omits adjustments for taxes and subsidies or income received in kind. Additionally the GVA estimates contained in the Supply-Use framework are subject to conceptual, quality and coherence adjustments. These are described in greater detail in **Box 1**.

For certain industries, the ABI estimate

of approximate GVA per job is judged to be of low quality and in these cases the measure has been withdrawn. This applies for the following industries:

- Agriculture, hunting and related service activities (SIC 01); Forestry, logging and related service activities (SIC 02); and Fishing (SIC 05). These measures have primarily been withdrawn due to the prevalence of grants and subsidies in these industries. Additionally, data for these divisions has only been collected since 2000/2001, and as such the data are relatively new
- Air transport (SIC 62). For this division the ABI series is of poor quality. Changes in time tend to reflect improvements in measurement rather than real economic change
- Financial intermediation (SIC 65–67); and Public administration, defence and compulsory social security (SIC 75). In the first case financial data is not currently published and in the second case it is not collected by the ABI
- Real estate activities (SIC 70). The approximate GVA measure excludes capital expenditure, and as such, is not a representative measure due to the nature of the real estate industry. For example, there will typically be high levels of capital expenditure and low levels of turnover during the early stages of a project's development and vice-versa in the latter stages
- Research and development (SIC 73) and subdivisions of Activities of membership organisations (SIC 91.1 and 91.3). For these industries, much of their activity takes place within the non-market sector. Since government grants are excluded from the approximate GVA measures the estimates for these divisions have been withdrawn

- Education (SIC 80) and Health and social work (SIC 85). The exclusion of government grants from the data often results in negative values of GVA for these sectors. Furthermore, since the ABI is not distributed to public bodies the estimates are not considered representative of these divisions

For the following industries, although labour productivity estimates are published, users should exercise caution when interpreting the results:

- Manufacture of beverages (SIC 15.9); Manufacture of tobacco products (SIC 16); and Wholesale of food, beverages and tobacco (SIC 51.3). Due to the desire of firms to minimise duty payments, the timing of the release of goods from bonded warehouses is subject to considerable variation. This results in volatile estimates of GVA for these industries
- Manufacture of refined petroleum products (SIC 23.3). Firms in this division tend to change the time at which they report their duty payments. The result is that for some years payments may appear in wholesale and for others they may appear in refining. Despite ONS attempts to minimise the differences in reported duty payments, the GVA estimates are subject to considerable volatility

Due to issues with data quality and volatility the following SIC(2003) divisions have been aggregated as follows:

- Extraction of crude petroleum and natural gas (SIC 1110) and Service activities incidental to oil and gas extraction excluding surveying (SIC 1120) have been aggregated to SIC 1100 level

Box 1

National Accounts adjustments

Conceptual adjustments

These are the adjustments required to translate data sources into National Accounts concepts. These include adjustments to allow for undeclared income in the income measure and adjustments to retail sales to exclude spending by businesses in shops in the household final consumption expenditure measure. These well-established adjustments take place as part of the national accounts compiling process and are made prior to the balancing exercise which takes place under the Supply-Use framework.

Quality adjustments

These adjustments take place after conceptual adjustments are made and are intended to correct for known biases and

discontinuities in the source data. Such adjustments often occur as a result of revisions analysis, for example, correction for systematic under reporting of a component.

Coherence adjustments

These adjustments are applied at the final stage of the balancing process, once the data has been scrutinised and validated against other data sources. The adjustments, which are carried out at a detailed industry and product level, are used to secure a balance between supply and demand, outputs and inputs and reflect the known relative weaknesses in the accounts.

For further information on the National Accounts adjustments see Penneck and Mahajan (1999).

- Manufacture of pulp (SIC 2111) and Manufacture of paper and paperboard (SIC 2112) have been aggregated to SIC 2110 level
- Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi finished goods to Agents involved in the sale of a variety of goods (SIC 5111 to 5119) have been aggregated to SIC 5100 level
- Wholesale of grain, seeds and animal feeds to Wholesale of un-manufactured tobacco (SIC 5121 to 5125) have been aggregated to SIC 5120 level
- Wholesale of tobacco products to Wholesale of coffee, tea, cocoa and spices (SIC 5135 to 5137) have been aggregated to SIC 5135-5137 level.
- Repair of boots, shoes and other articles of leather to Repair not elsewhere Classified (SIC 5271 to 5274 have been aggregated to SIC 5270 level
- Hotels and motels, with restaurants (licensed) (SIC 5511) and Hotels and motels, with restaurants (unlicensed) (SIC 5512) have been aggregated to 5510 level
- Data processing (SIC 7230) and Database activities (SIC 7240) have been aggregated to SIC 72.3/72.4 level.

In addition, some approximate GVA per worker estimates for SIC(2003) divisions at the four-digit level have been suppressed, due to their disclosive nature. This is also true of those divisions where employment is less than 500. However, data for these industries are still included within broader aggregates.

Employment

Labour productivity estimates presented in this article use ABI year-average employment as their input measure. This variable is derived by adjusting the ABI

point-in-time employment estimate using employment measures from the quarterly STES data. This removes elements of seasonality that may be present from using the point-in-time ABI estimates which refer to the month of December. However, it also results in the loss of some consistency between input and output data. The methodology used to calculate this year average employment measure is outlined in **Box 2**. It should be taken into account that the labour productivity estimates are based on output per worker, as opposed to output per hour worked. This will result in underestimates of productivity for those sectors in which part time work is more prevalent and overestimates for those industries in which part time work is less prevalent.

Analysis

In contrast to the estimates contained in the Productivity Statistical Bulletin, the results presented in this article allow for a much more detailed breakdown by industry and service subdivisions. This is particularly true of the service sector, for which the Productivity Statistical Bulletin only contains breakdowns by Distribution, hotels and restaurants; Transport, storage and communication; and Business services and finance. Note, however, that sections J and L (Financial intermediation and Public administration and defence respectively) are not covered by the ABI, and the data for sections M and N (Education and Health and social work respectively) are not considered representative of their industries.

An inspection of the broad sector level results, presented in **Table 1**, show that labour productivity in the service sectors is well below that of the production sectors (excluding SIC 2003 sections A,B,J,L,M,N and divisions 62 and 70 (section K)).

This empirical phenomenon has been a pervasive feature of productivity estimates and is often attributed to the *Baumol Effect*, (Baumol 1967). Also known as *Baumol's Disease*, this is the theory that lower levels (and growth rates) of labour productivity in the service sector are due to higher levels of labour intensity. That is to say that service industries typically use a higher proportion of labour relative to capital inputs in their production process. This relatively high labour intensity means that service industries tend to be worse placed to benefit from advances in technology.

However, these estimates are expressed in current prices and as such do not allow for a consistent assessment of growth in labour productivity. Deflating the manufacturing sector estimates of GVA by the output Producer Prices Index (PPI), and selected service divisions by the relevant experimental Services Producer Prices Index (SPPI) series, allows us to broadly gauge the growth in labour productivity over the period. It must be emphasised that only broad trends in time can be inferred from this deflated data since, as previously mentioned, the revisions to the ABI arising from quality issues or omissions are only taken back two years. Furthermore the coverage of the deflators used for the selected service sector divisions do not perfectly match.

Figure 1 plots the labour productivity estimates for the manufacturing sector and an aggregation of selected service sector divisions,³ for which the output measures have been deflated to constant 2005 prices. In line with the predictions of Baumol's theory, growth over the entire period in the service divisions' productivity is below that of the manufacturing sector. Specifically, using 1998 as the base year, the index of labour productivity for the service industries in 2007 is 123 compared

Box 2

Calculation of ABI year-average employment

ABI year-average employment = ABI year average employees +
ABI working proprietors + ABI unpaid workers

ABI year-average employees is calculated by taking the ABI point-in-time data at the reporting unit level and applying local unit level factors from the STES.

As an example, the STES factor for 2005 would be calculated as below:

$$\frac{(\text{STES December 2004} + (3 \times \text{STES March 2005}) + (3 \times \text{STES June 2005}) + (3 \times \text{STES September 2005}) + (2 \times \text{STES December 2005}))}{12 \times \text{STES December 2005}}$$

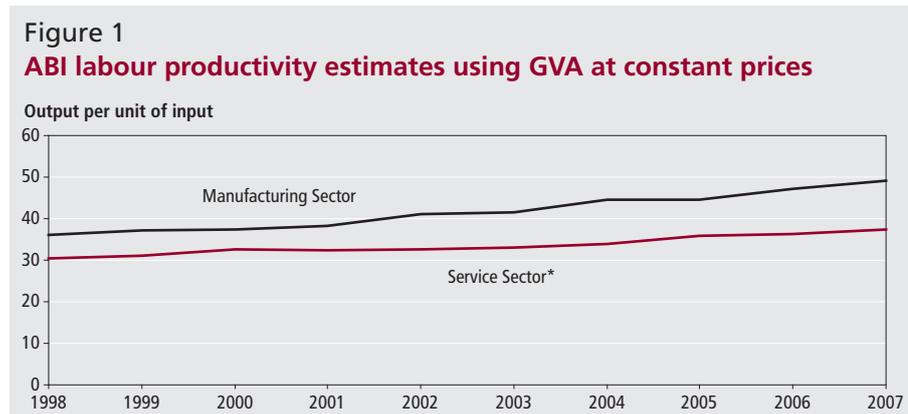
The calculation is performed separately for each of the male/female/full-time/part-time splits by STES SIC section building blocks. They are then applied to each of the December returns before grossing to generate year-average employment levels.

The ABI unpaid workers and ABI working proprietors series cannot be adjusted for seasonality since there is no data available on them from the STES. Although the IDBR (Inter Departmental Business Register) and Labour Force Survey (LFS) contain data on working proprietors and unpaid workers, respectively, it is not considered reliable enough to adjust ABI data at a detailed level.

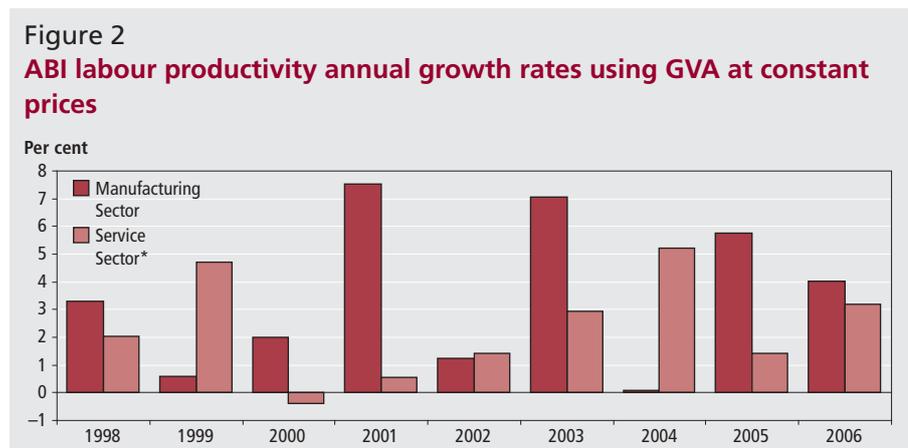
Table 1
ABI 'approximate GVA per job' in current prices

		£ thousands									
SIC03 section	Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
C-0 ¹	All sectors covered by the ABI	28.7	30.1	31.1	32.1	32.8	34.0	36.1	38.0	40.6	42.8
C-E	Production sector	38.5	40.4	42.7	43.7	46.5	47.2	51.7	57.5	60.3	64.3
D	Manufacturing	33.9	35.2	35.9	36.6	39.3	40.2	43.7	44.6	48.2	51.4
F	Construction	27.2	29.8	31.6	35.9	36.7	40.0	41.9	45.4	48.5	52.2
G-0 ¹	Service sector	25.2	26.5	27.2	28.1	28.6	29.8	31.4	33.1	35.0	36.8

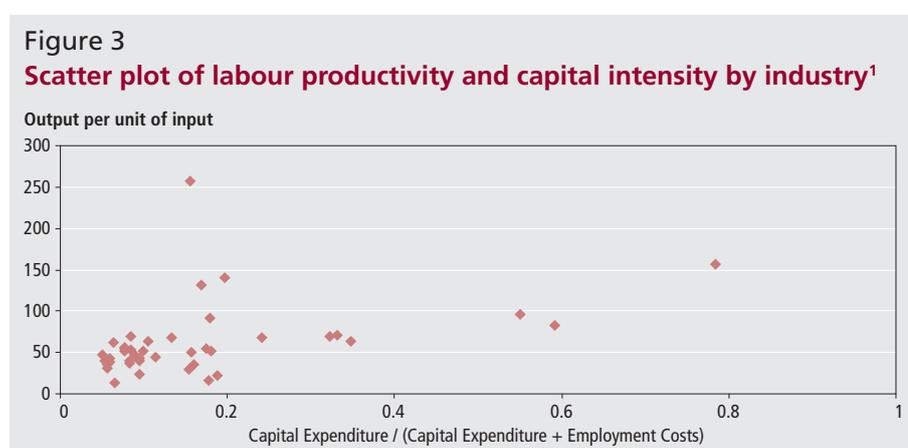
Note: Source: Office for National Statistics
1 Excludes SIC03 sections A,B,J,L,M,N and divisions 62 and 70 (section K).



Note: Source: Office for National Statistics
* See Note 3.



Note: Source: Office for National Statistics
* See Note 3.



Note: Source: Office for National Statistics
1 The data point for section 11 (Extraction of crude petroleum and natural gas; Service activities incidental to oil and gas extraction excluding surveying) has been omitted from this plot in order to allow for a more detailed scale.

with 136 for the manufacturing sector. The year on year growth rates in **Figure 2** show that, for the majority of the period, annual growth rates of labour productivity in the manufacturing sector outstripped those in the service sector.

Turning towards a lower level of analysis, **Table 2** details the five best and worst performing divisions in terms of labour productivity levels at the two digit SIC level. Certain SIC sections at the two digit level have consistently ranked highly in terms of productivity performance. Section 11 (Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying) has ranked at the top for the whole period. Section 41 (Collection, purification and distribution of water) has also ranked consistently highly. At the other end of the spectrum sections 55 (Hotels and restaurants) and 52 (Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods) have ranked consistently low in labour productivity estimates.

These results are broadly consistent with Baumol's theory that more capital intensive industries are better placed to take advantage of technological advances. For example, in 2006 the ratios of capital expenditure to the sum of capital expenditure and employment costs in SIC sections 11 and 41 were 0.72 and 0.78, respectively. The corresponding ratios for sections 55 and 52 were 0.18 and 0.19, respectively. This relationship is explored further in **Figure 3**, which is a scatter plot of labour productivity levels for 2007 against capital expenditure as a proportion of capital expenditure plus employment costs for 2006⁴. Although the ratio is an imperfect means of capturing capital intensity, **Figure 3** suggests a broadly positive correlation between this ratio and labour productivity.

Taken as a whole the results of this tentative analysis suggest that the symptoms of Baumol's disease are still very much a feature of UK labour productivity. A more

Table 2
Rankings of 'approximate GVA per job' for two digit SIC¹

Panel A: Top Five

Rank	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	11	11	11	11	11	11	11	11	11	11
2	16	16	16	16	16	16	16	41	16	16
3	41	23	23	23	41	41	41	61	41	41
4	23	41	61	41	61	61	61	23	61	23
5	61	90	41	61	23	23	23	90	23	61

Panel B: Bottom Five

Rank	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	91	91	91	91	91	91	91	91	91	91
2	55	55	55	55	55	55	55	55	55	55
3	52	18	52	52	52	52	52	52	52	52
4	93	52	18	18	93	93	93	93	93	93
5	18	93	93	93	39	39	17	17	19	92

Note:

1 Excluding SIC divisions 12, 13, 40, 62, 65-67, 70, 73 and 75-85.

Source: Office for National Statistics

comprehensive analysis of productivity growth and its drivers would take the form of a multi-factor productivity approach. Although the required data to perform this analysis at a 4 digit level are not currently available, Turvey (2009), performs this analysis at a broad sector level using National Accounts and labour market data.

Conclusion

Estimates of labour productivity derived from the ABI are useful in allowing for a much more detailed industry breakdown than headline productivity estimates. They also differ from the headline productivity estimates in that they are not subject to the National Accounts coherency and balancing adjustments, which reduce consistency between the input and output measures.

It is important, however, to bear in mind the limitations to these figures. For some industries, the ABI is not representative; for others the ABI offers no coverage at all - notably sections J and L relating to Financial intermediation and Public administration and defence respectively. Finally, note that prices in certain industrial sectors are subject to substantial volatility, which should be borne in mind when interpreting the corresponding labour productivity estimates.

A full set of labour productivity estimates at section, 2 digit and 4 digit SIC level can be found in the **Appendix** in **Tables A1, A2** and **A3**, respectively.

Notes

1. From 2009, the part of the ABI which deals with employment, known as ABI/1, will be replaced with the Business Register Employment Survey (BRES). BRES will replace both the ABI/1 and the Business Register Survey (BRS). For more information see www.ons.gov.uk/about/surveys/a-z-of-surveys/business-register-and-employment-survey/index.html
2. Between 1995 and 1998 employment data was collected using the Annual Employment Survey (AES) which, due to methodological and coding differences, is not consistent with the ABI.
3. Specifically, division H (Hotels and restaurants) and elements of divisions I (Transport, storage and communication), K (Real estate, renting and business activities), O (Other community, social and personal service activities) and G (Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods).
4. The ratios for 2006 are plotted against the 2007 labour productivity estimates as it is the prior level capital expenditure that is likely to influence the current level of productivity.

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APPENDIX

Table A1
Current Price 'Approximate GVA per job' for 1998 to 2007, Industry Sections¹

			£ thousands									
Section	Sub section	Industry	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
C-O		All sectors covered by the ABI	28.7	30.1	31.1	32.1	32.8	34.0	36.1	38.0	40.6	42.8
C-F		Production sector plus construction	36.1	38.0	40.1	41.8	43.9	45.3	49.0	53.6	56.8	60.6
C-E		Production sector	38.5	40.4	42.7	43.7	46.5	47.2	51.7	57.5	60.3	64.3
G-O		Service sector	25.2	26.5	27.2	28.1	28.6	29.8	31.4	33.1	35.0	36.8
H-O		Service sector excluding Wholesale and Retail trade	26.7	27.7	29.0	29.6	30.2	31.3	33.1	35.4	36.7	39.0
C		Mining and Quarrying	162.8	198.3	297.4	316.3	288.1	260.5	297.9	369.9	378.3	443.3
	CA	Mining and Quarrying of Energy Producing Materials	238.0	295.7	496.0	533.0	472.2	428.6	477.9	601.4	639.2	693.8
	CB	Mining and Quarrying except Energy Producing Materials	49.9	52.8	53.5	55.5	49.8	48.3	61.6	74.0	59.8	68.1
D		Manufacturing	33.9	35.2	35.9	36.6	39.3	40.2	43.7	44.6	48.2	51.4
	DA	Manufacture of Food Products, Beverages and Tobacco	35.9	37.4	38.0	39.8	43.4	44.7	47.7	*	50.3	52.1
	DB	Manufacture of Textiles and Textile Products	19.6	18.7	19.9	22.8	24.4	25.0	26.4	29.7	28.4	32.8
	DC	Manufacture of Leather and Leather Products	20.1	24.4	28.9	28.6	34.4	27.8	27.0	30.0	25.7	31.2
	DD	Manufacture of Wood and Wood Products	25.0	23.3	25.9	25.7	26.9	30.2	33.7	34.8	31.5	37.5
	DE	Manufacture of Pulp, Paper and Paper Products; Publishing and Printing	36.1	39.4	40.6	40.4	42.7	42.0	45.4	45.4	45.5	47.1
	DF	Manufacture of Coke, Refined Petroleum Products and Nuclear fuel	84.0	120.0	88.9	97.5	87.3	84.4	103.4	92.8	117.9	139.8
	DG	Manufacture of Chemicals, Chemical Products and Man-made Fibres	52.5	55.2	60.9	62.5	63.5	66.8	70.8	77.5	90.1	91.7
	DH	Manufacture of Rubber and Plastic Products	29.8	28.9	30.7	31.8	33.2	34.1	36.0	38.0	36.5	40.6
	DI	Manufacture of Other Non-metallic Mineral Products	32.8	33.5	34.8	36.0	40.1	41.9	46.1	46.0	48.7	52.1
	DJ	Manufacture of Basic Metals and fabricated Metal Products	30.4	29.5	30.2	30.7	31.5	32.6	35.6	37.3	41.2	44.9
	DK	Manufacture of Machinery and Equipment not elsewhere classified	33.0	32.7	33.5	32.8	36.9	38.8	39.8	42.2	46.5	47.3
	DL	Manufacture of Electrical and Optical Equipment	35.2	36.6	39.1	31.4	37.4	39.7	44.2	43.5	47.9	50.1
	DM	Manufacture of Transport Equipment	39.9	42.8	38.2	43.8	45.3	43.2	48.1	49.7	53.7	59.1
	DN	Manufacturing not elsewhere classified	25.6	26.3	25.4	27.8	27.9	28.2	32.1	33.7	34.6	41.8
E		Electricity, Gas and Water Supply	109.9	114.9	107.2	110.6	132.2	127.4	135.5	169.9	187.0	175.4
F		Construction	27.2	29.8	31.6	35.9	36.7	40.0	41.9	45.4	48.5	52.2
G		Wholesale and retail Trade; Repair of Motor Vehicles, Motorcycles and Personal and Household Goods	22.7	24.5	23.9	25.6	25.7	27.0	28.6	28.8	31.7	32.7
H		Hotels and Restaurants	11.3	11.9	12.6	13.1	13.8	13.6	15.0	14.9	15.6	16.1
I		Transport, Storage and Communication	38.5	38.5	39.7	39.5	40.4	43.6	45.4	48.7	52.9	55.6
K		Real Estate, Renting and Business Activities	31.1	32.1	34.0	34.4	34.8	36.4	38.2	40.9	43.0	46.1
O		Other Community, Social and Personal Service Activities	23.0	25.0	25.1	26.3	27.0	27.4	29.4	32.2	29.5	29.7

Note:

1 Excluding SIC Divisions 12, 65-67, 70, 75-85 and also 13 in 2003-2007.

Source: Office for National Statistics

Table A2

Current Price 'Approximate GVA per job' for 1998 to 2007, Two Digit SIC¹

		£ thousands									
SIC03		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
10	Mining of Coal and Lignite; Extraction of Peat	46.1	37.0	41.9	37.7	35.8	40.2	36.9	32.1	37.5	55.0
11	Extraction of Crude Petroleum and Natural Gas; Service Activities Incidental to Oil and Gas Extraction excluding Surveying	330.1	419.2	703.0	766.0	657.3	573.5	611.5	744.4	770.1	820.8
14	Other Mining and Quarrying	50.3	52.9	53.5	55.5	49.8	48.3	61.6	74.0	59.8	68.1
15	Manufacture of Food Products and Beverages	33.9	35.3	35.9	38.2	41.4	42.8	45.5	*	48.2	49.9
16	Manufacture of Tobacco Products	166.3	188.4	211.3	178.9	245.6	211.2	250.6	*	251.9	257.8
17	Manufacture of Textiles	21.8	21.1	22.5	24.0	25.0	26.5	25.2	26.6	28.3	31.5
18	Manufacture of Wearing Apparel; Dressing and Dyeing of Fur	17.0	15.9	16.8	21.0	23.4	22.7	28.8	36.2	28.5	35.9
19	Tanning and Dressing of Leather; Manufacture of Handbags, Saddlery, Harness and Footwear	20.1	24.4	28.9	28.6	34.4	27.8	27.0	30.0	25.7	31.2
20	Manufacture of Wood and Products of Wood and cork, except Furniture; Manufacture of Articles of Straw and Plaiting Materials	25.0	23.3	25.9	25.7	26.9	30.2	33.7	34.8	31.5	37.5
21	Manufacture of Pulp, Paper and Paper Products	35.1	38.0	37.7	39.2	43.1	40.2	40.7	37.4	36.5	44.6
22	Publishing, Printing and Reproduction of Recorded Media	36.4	39.9	41.4	40.7	42.6	42.4	46.5	47.3	47.5	47.6
23	Manufacture of Coke, Refined Petroleum Products and Nuclear Fuel	84.0	120.0	88.9	97.5	87.3	84.4	103.4	92.8	117.9	139.8
24	Manufacture of Chemicals and Chemical Products	52.5	55.2	60.9	62.5	63.5	66.8	70.8	77.5	90.1	91.7
25	Manufacture of Rubber and Plastic Products	29.8	28.9	30.7	31.8	33.2	34.1	36.0	38.0	36.5	40.6
26	Manufacture of Other Non-metallic Mineral Products	32.8	33.5	34.8	36.0	40.1	41.9	46.1	46.0	48.7	52.1
27	Manufacture of Basic Metals	33.8	30.6	34.8	32.0	29.3	30.5	43.5	43.8	52.5	67.3
28	Manufacture of Fabricated Metal Products, except Machinery and Equipment	29.4	29.2	28.9	30.4	32.1	33.1	33.9	35.8	38.8	40.0
29	Manufacture of Machinery and Equipment not elsewhere classified	33.0	32.7	33.5	32.8	36.9	38.8	39.8	42.2	46.5	47.3
30	Manufacture of Office Machinery and Computers	52.9	38.2	39.0	35.5	61.2	62.9	73.5	45.1	49.5	52.9
31	Manufacture of Electrical Machinery and Apparatus not elsewhere classified	26.8	29.8	31.2	30.7	30.4	32.4	35.6	38.3	40.3	42.4
32	Manufacture of Radio, Television and Communication Equipment and Apparatus	42.9	47.8	51.7	24.1	35.0	37.5	41.7	39.4	56.1	62.5
33	Manufacture of Medical, Precision and Optical Instruments, Watches and Clocks	32.6	34.0	36.5	37.3	40.3	43.1	48.2	50.9	51.4	51.0
34	Manufacture of Motor Vehicles, Trailers and Semi-Trailers	37.4	33.8	30.4	37.4	37.5	37.3	43.9	43.2	49.3	55.3
35	Manufacture of Other Transport Equipment	43.6	55.5	48.9	52.0	56.2	51.4	53.8	58.0	59.2	63.0
36	Manufacturing of Furniture; Manufacturing not elsewhere classified	25.5	26.1	25.1	27.4	27.3	27.6	29.7	32.0	31.4	38.0
37	Recycling	28.9	30.9	30.7	32.7	35.9	36.3	59.2	49.1	60.1	71.6
41	Collection Purification and Distribution of Water	94.6	91.8	78.4	94.4	129.5	104.7	117.2	154.1	159.3	156.4
45	Construction	27.2	29.8	31.6	35.9	36.7	40.0	41.9	45.4	48.5	52.2
50	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of Automotive Fuel	28.2	30.2	29.6	33.6	36.5	38.7	39.6	35.8	39.1	42.8
51	Wholesale Trade and Commission Trade, except of Motor Vehicles and Motorcycles	38.5	40.3	38.7	43.2	41.4	44.4	48.5	49.2	52.9	56.3
52	Retail Trade, except of Motor Vehicles and Motorcycles; Repair of Personal and Household Goods	14.8	16.4	16.6	16.8	17.4	18.0	18.9	19.5	21.5	21.5
55	Hotels and Restaurants	11.3	11.9	12.6	13.1	13.8	13.6	15.0	14.9	15.6	16.1
60	Land Transport; Transport Via Pipelines	25.9	27.3	28.6	27.9	29.5	28.6	27.3	30.7	32.8	36.2
61	Water Transport	70.1	61.9	78.9	85.0	106.2	85.3	112.4	120.7	123.6	131.9

Table A2 continued

		£ thousands									
SIC03		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
63	Supporting and Auxiliary Transport Activities; Activities of Travel Agencies	42.3	42.8	39.5	41.7	41.5	45.2	48.5	51.8	59.0	63.1
64	Post and Telecommunications	50.1	48.1	50.5	48.4	48.2	57.2	60.8	63.8	69.1	69.4
71	Renting of Machinery and Equipment Without Operator and of Personal and Household Goods	59.0	57.1	52.8	63.4	66.3	65.9	64.6	71.4	71.2	83.2
72	Computer and Related Activities	46.7	47.0	44.2	46.4	50.0	51.1	56.2	61.6	64.5	70.0
74	Other Business Activities	27.3	28.2	31.4	30.6	30.5	32.1	33.5	35.6	37.9	40.1
90	Sewage and Refuse Disposal, Sanitation and Similar Activities	66.0	74.7	62.8	56.2	82.1	76.3	75.4	89.9	105.2	96.5
91	Activities of Membership Organisations not elsewhere classified	11.2	10.6	8.8	8.1	8.9	8.1	10.2	10.4	14.8	13.3
92	Recreational, Cultural and Sporting Activities	25.7	27.6	28.7	30.4	31.3	31.3	32.5	35.5	27.9	30.1
93	Other Service Activities	16.6	19.2	20.6	22.5	20.2	21.7	23.7	25.1	25.0	23.4

Note:

1 Excluding SIC Divisions 12, 13, 40, 65-67, 70, 73 and 75-85.

Source: Office for National Statistics

Table A3

Current Price 'Approximate GVA per job' for 1998 to 2007, Four Digit SIC¹

£ thousands										
SIC03	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1010	46.7	36.9	42.1	37.6	34.7	40.2	37.0	31.0	37.2	55.4
1100	330.1	419.2	703.0	766.0	657.3	573.5	611.5	1361.9	770.1	820.8
1411	49.5	28.4	46.4	53.4	53.7	51.8	54.2	46.1	61.8	53.2
1412	48.2	59.4	*	50.1	52.9	*	*	*	*	*
1421	56.8	58.8	56.9	59.5	50.5	48.1	69.2	68.7	64.2	78.0
1422	36.5	44.6	47.6	41.3	41.9	43.5	44.3	47.5	39.8	56.7
1430	*	*	*	*	*	*	*	*	*	*
1440	70.0	75.5	80.5	63.6	87.1	86.7	63.7	91.1	*	*
1450	18.5	38.4	56.9	55.4	54.3	43.9	54.2	38.3	29.0	36.7
Manufacturing										
1512	17.5	17.2	20.1	25.1	29.2	24.0	23.4	24.8	21.4	24.5
1513	26.4	24.2	25.1	25.9	28.7	29.2	28.0	30.5	27.7	31.8
1520	17.7	17.6	17.5	21.5	22.6	24.3	26.4	29.2	25.9	39.2
1531	38.2	60.3	57.7	56.4	56.5	60.5	64.6	48.0	55.7	61.2
1532	29.9	51.8	54.1	50.7	48.1	50.2	52.2	54.8	35.1	34.1
1533	31.7	29.5	28.3	38.5	31.3	30.1	34.8	34.8	32.2	38.2
1551	35.0	31.0	34.8	34.9	47.7	45.0	38.3	35.8	46.2	50.3
1552	34.5	27.5	27.3	25.7	34.1	42.5	39.2	40.9	36.6	48.5
1561	66.9	62.6	61.2	58.3	*	*	*	76.1	92.3	*
1562	76.8	48.5	66.0	86.4	*	*	*	39.8	7.7	*
1571	29.0	38.9	20.3	32.1	40.0	43.8	39.4	35.0	46.8	45.7
1572	63.2	58.7	60.8	65.0	78.1	63.4	79.3	87.0	87.1	113.3
1581	17.2	18.5	20.6	21.7	24.4	26.5	29.4	26.5	28.2	27.9
1582	23.9	24.4	26.3	26.4	24.9	30.0	35.1	47.0	41.7	44.8
1584	46.3	45.7	55.7	60.3	62.6	76.5	90.4	77.9	80.4	101.4
1586	52.5	78.1	100.1	99.7	101.5	111.6	101.9	137.2	117.1	108.0
1587	39.9	35.8	32.8	39.3	47.4	56.2	54.9	67.1	53.2	39.4
1589	*	36.0	36.6	38.8	36.9	45.2	45.7	50.2	61.1	45.0
1591	83.3	72.3	78.5	83.3	87.4	104.9	135.4	150.3	173.6	187.0
1596	57.1	74.9	68.1	62.6	69.1	58.2	53.7	52.2	67.1	35.8
1597	47.8	35.7	40.5	55.7	47.5	69.2	57.8	54.4	59.1	88.9
1598	54.2	63.4	55.2	60.0	54.6	63.7	71.2	63.2	62.1	58.1
1600	166.3	188.4	211.3	178.9	245.6	211.2	*	*	251.9	257.8
1711	22.8	18.7	30.4	35.1	65.0	*	*	19.4	27.3	11.6
1712	22.5	27.8	25.6	27.3	23.1	23.0	20.6	29.8	28.7	36.2
1713	17.9	20.4	28.5	24.3	31.5	23.2	23.3	27.1	22.8	16.1
1716	26.5	16.6	21.9	22.5	22.8	22.5	24.0	14.4	*	28.7
1721	21.5	17.5	22.2	24.6	27.5	17.3	25.0	15.0	17.4	15.2
1722	20.8	29.3	18.2	22.2	22.9	29.8	24.0	14.1	16.0	24.6
1723	24.8	21.6	19.1	33.8	22.9	22.7	21.4	19.1	22.0	37.1
1724	27.1	27.2	25.4	29.7	31.9	35.0	32.6	30.1	32.5	36.4
1725	26.8	12.5	19.6	18.8	*	*	10.7	31.9	37.4	168.0
1730	25.9	23.2	25.7	29.8	33.6	33.7	28.7	23.9	27.9	32.6
1740	16.5	21.0	20.0	22.6	20.9	27.2	23.5	28.0	26.5	26.7
1751	25.9	25.4	26.2	25.4	29.6	28.1	30.1	33.7	34.1	40.7
1752	28.7	24.9	26.1	31.7	23.5	28.8	30.0	23.7	19.8	41.5
1753	37.4	32.9	31.5	31.0	43.6	35.7	34.4	39.7	31.2	32.6
1754	25.8	19.0	24.1	25.1	21.9	28.0	29.7	27.3	37.1	43.6
1760	28.2	21.7	24.8	24.6	28.9	26.3	23.3	17.9	27.7	39.2
1771	22.4	20.4	15.8	17.2	26.0	19.7	20.7	22.9	18.8	25.2
1772	16.1	16.0	20.2	14.9	18.7	15.2	17.2	18.2	24.3	19.1
1810	25.8	33.5	20.1	15.1	23.3	44.4	49.2	27.0	*	*
1821	17.2	15.9	24.8	20.9	31.1	22.4	25.4	31.7	34.6	35.4
1822	14.9	17.1	16.8	24.1	26.5	27.6	32.7	28.0	27.9	43.9
1823	20.1	14.6	17.6	20.6	16.2	24.6	22.4	29.9	28.0	30.7
1824	17.8	14.2	14.1	17.7	20.8	16.6	27.5	31.2	27.9	29.0
1910	22.2	29.7	28.4	21.2	34.0	36.2	40.8	41.0	36.5	36.7
1920	20.3	26.3	20.3	19.2	29.8	21.7	24.3	31.2	18.9	29.2
1930	19.7	22.8	33.1	36.2	36.7	28.9	24.7	25.7	29.4	31.1
2010	27.1	27.5	23.5	23.2	28.0	31.4	33.7	40.7	34.1	42.1
2020	43.3	38.5	37.9	32.2	35.8	40.8	44.4	43.4	57.7	76.2
2030	21.3	20.4	26.0	26.1	27.1	30.8	34.9	34.5	28.3	34.2
2040	28.6	21.8	25.2	24.6	23.0	25.7	27.9	29.9	29.8	30.9
2051	23.4	21.2	22.6	23.8	23.6	24.5	25.6	29.2	*	*
2052	25.5	18.4	28.8	*	*	29.9	*	*	*	*
2110	43.7	49.5	46.8	*	*	51.9	*	*	43.1	67.6
2121	31.9	30.8	29.9	31.1	34.0	34.2	37.6	38.4	32.6	37.0
2122	44.8	43.9	52.0	55.5	66.4	59.6	52.4	41.5	48.6	53.6

Table A3 continued

£ thousands										
SIC03	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2123	29.8	35.4	36.7	29.8	30.9	37.3	38.5	40.9	27.8	33.0
2124	24.7	55.0	32.9	45.0	40.1	32.8	30.4	44.3	31.1	40.7
2125	29.5	35.3	40.3	36.7	34.0	30.0	32.6	32.9	36.4	38.7
2211	44.2	59.0	49.0	50.8	52.7	56.1	55.9	67.2	62.2	55.6
2212	51.1	53.8	55.2	50.6	51.7	47.8	55.1	54.6	51.7	54.5
2213	42.4	45.2	50.4	46.9	48.7	59.5	56.5	58.4	57.5	60.3
2214	99.7	26.6	46.1	48.3	78.4	75.1	40.8	41.3	104.4	54.0
2215	10.9	24.7	25.7	33.3	35.7	22.3	37.7	35.2	40.0	29.7
2222	31.9	33.7	35.6	34.6	36.9	34.2	39.5	34.0	39.0	40.1
2223	27.4	26.8	25.7	25.5	25.5	27.4	29.4	30.0	30.5	33.1
2225	29.8	30.8	37.8	39.1	37.9	31.0	39.0	51.6	40.4	43.6
2231	62.2	46.0	63.6	39.6	27.9	52.2	61.8	46.1	23.9	65.0
2232	51.6	53.4	43.3	53.9	55.1	48.3	49.2	45.1	53.0	46.9
2233	43.0	47.8	21.4	35.9	40.5	46.1	21.5	62.6	79.5	30.0
2320	114.4	171.3	121.0	*	*	*	*	238.4	*	249.2
2330	60.5	83.9	60.4	*	*	*	*	*	*	74.4
2413	33.5	35.4	42.7	55.4	59.2	67.9	66.9	66.5	95.2	90.8
2414	81.6	63.4	74.2	84.1	100.7	86.1	99.1	183.7	206.6	144.5
2415	37.8	41.1	53.2	55.7	55.2	69.7	68.6	59.6	49.7	68.9
2416	41.9	39.1	54.6	44.3	45.8	60.2	52.9	61.5	65.2	66.6
2417	41.2	46.2	53.9	66.9	56.1	65.5	67.1	63.0	59.1	70.4
2420	69.6	69.6	83.6	75.7	89.1	85.6	83.4	78.1	64.3	82.8
2430	38.4	37.5	41.8	39.7	48.4	48.8	57.2	58.9	62.1	68.0
2441	35.0	52.7	39.6	50.9	38.8	40.5	31.1	36.1	43.4	108.9
2442	73.7	76.4	82.6	94.7	81.6	96.2	95.7	116.0	120.3	123.9
2451	31.7	39.9	36.8	38.7	46.7	42.7	63.2	63.2	67.2	56.0
2452	38.5	49.8	64.2	55.9	50.3	50.0	48.5	44.6	40.1	28.3
2461	35.3	29.0	33.0	33.6	29.0	35.4	38.1	31.2	30.6	60.4
2462	51.1	42.6	56.8	48.9	53.7	46.4	63.5	65.3	53.6	70.5
2463	40.3	42.3	47.7	47.7	54.1	54.8	66.0	77.0	74.0	69.7
2464	70.7	121.8	51.5	49.7	47.4	46.1	*	64.9	62.2	88.8
2465	34.2	44.7	38.2	40.3	39.3	44.5	*	49.8	17.1	32.4
2466	52.5	47.1	60.8	54.6	52.2	52.9	60.7	68.5	86.0	81.0
2470	52.7	53.9	67.9	53.7	128.2	98.0	73.5	75.6	104.2	90.1
2511	43.4	43.9	37.0	43.1	66.9	66.6	70.3	69.5	67.2	71.8
2512	21.1	22.3	24.2	19.6	24.0	28.9	22.5	42.9	46.3	23.7
2513	27.6	26.9	30.4	27.5	33.8	35.1	34.7	36.1	38.2	34.6
2521	33.9	32.3	38.0	42.1	39.1	38.7	38.9	41.5	42.4	43.6
2522	34.7	31.7	31.6	35.4	34.5	36.6	41.2	41.9	37.9	40.1
2523	25.7	25.7	27.8	30.9	29.7	30.3	32.7	34.8	34.1	40.8
2524	26.6	26.5	27.8	25.8	27.8	28.9	31.6	32.7	30.8	37.5
2612	*	*	23.2	*	32.6	*	*	33.1	37.1	42.9
2613	40.7	44.8	44.1	44.3	47.4	48.3	54.6	53.6	38.9	42.1
2614	34.7	33.9	35.8	35.3	27.2	42.7	55.5	56.7	56.9	77.7
2615	28.2	17.4	47.6	36.1	25.8	35.3	41.6	31.3	42.2	39.2
2621	18.1	15.7	17.0	16.7	19.3	21.6	22.9	23.8	22.3	27.0
2622	36.1	44.2	40.9	40.0	43.7	43.7	77.4	*	65.4	64.4
2624	41.5	23.7	*	*	*	*	*	*	*	*
2625	10.7	14.6	19.1	28.3	7.0	20.1	23.2	28.9	17.8	17.9
2626	28.6	31.5	33.2	29.3	31.3	32.1	28.5	34.1	26.1	32.4
2630	29.6	22.0	21.4	20.9	15.9	24.2	32.6	28.3	25.7	33.3
2640	36.7	36.9	33.0	37.0	38.8	45.9	49.4	48.3	47.5	46.7
2651	64.4	77.1	95.6	96.0	97.0	115.2	82.3	69.4	92.9	93.6
2661	33.0	33.2	32.9	35.3	42.7	41.7	48.2	48.6	43.2	47.9
2662	122.3	124.5	114.3	153.6	145.0	148.8	171.9	170.4	213.1	247.3
2663	47.7	55.0	41.2	48.1	74.7	60.7	73.0	57.1	106.5	63.2
2664	49.2	28.4	42.1	48.4	27.8	*	*	*	*	*
2665	27.5	30.9	32.4	21.2	32.4	*	*	75.8	*	*
2666	22.9	24.9	33.0	50.5	22.1	29.6	32.9	30.2	32.3	30.5
2670	24.5	23.5	23.5	34.0	40.3	23.2	28.6	33.5	30.5	30.7
2681	35.4	24.8	29.0	30.8	25.5	29.4	33.7	35.3	24.5	32.5
2682	36.7	33.0	44.1	40.5	44.0	46.2	46.5	52.7	58.1	60.9
2710	38.7	32.2	35.3	18.7	16.3	21.8	49.2	39.5	49.9	91.3
2721	23.1	23.3	34.5	29.4	34.8	30.0	32.6	48.6	74.7	65.5
2722	33.1	29.8	29.8	39.8	38.3	34.8	46.4	53.3	60.8	58.7
2731	22.1	22.4	26.7	27.1	28.5	30.1	40.0	35.2	37.6	*
2732	45.1	37.8	32.3	39.7	24.5	36.5	54.1	16.7	32.5	*
2733	37.1	26.9	38.9	26.8	26.9	37.7	50.1	53.0	63.6	52.0
2734	26.3	39.0	27.3	26.6	27.4	34.4	33.2	45.4	43.7	48.4

Table A3 continued

£ thousands										
SIC03	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2735*****	32.4	22.9	57.1	15.6	19.3	**	**	**	**	**
2741	66.2	99.2	117.9	187.3	104.1	72.7	130.0	161.6	169.6	182.2
2742	39.8	39.8	37.9	41.7	40.5	39.6	44.6	53.1	62.4	65.8
2743	31.5	24.1	37.0	39.9	31.0	48.6	94.1	76.8	58.2	161.2
2744	33.1	24.4	43.6	32.4	28.9	39.3	38.0	33.5	53.2	52.1
2745	45.6	35.4	41.8	45.7	44.6	48.7	52.1	54.3	56.7	66.3
2751	26.6	24.8	26.7	27.8	28.8	27.4	31.3	32.7	44.2	35.3
2752	24.2	24.1	27.2	25.6	31.4	35.2	33.2	33.0	30.2	44.1
2753	23.6	19.9	26.6	25.8	30.9	28.5	28.8	32.2	36.2	27.1
2754	24.3	24.1	34.3	33.7	25.1	22.9	29.3	34.3	34.5	33.6
2811	33.5	33.5	30.7	31.8	32.7	35.2	35.7	34.3	42.0	48.4
2812	30.0	25.1	26.0	30.4	28.3	28.1	34.9	33.2	36.5	40.0
2821	26.3	27.5	28.0	36.9	32.5	42.9	39.0	41.8	39.1	33.5
2822	34.9	37.3	31.1	36.5	37.6	35.7	37.3	49.8	48.8	59.7
2830	38.6	32.8	38.3	39.8	39.4	41.2	48.6	56.3	63.6	53.9
2840	27.8	27.7	29.0	30.7	28.4	25.3	27.1	29.6	37.5	35.4
2851	30.0	27.5	24.6	27.7	29.0	29.2	29.6	31.2	34.2	35.7
2852	28.4	28.7	29.0	27.8	30.3	31.8	33.2	35.5	36.0	35.4
2861	30.5	29.8	18.1	*	*	*	36.7	87.0	92.0	65.2
2862	31.2	24.1	31.1	30.1	35.9	32.5	31.6	37.5	34.4	32.2
2863	20.3	25.0	22.1	*	*	*	30.8	33.2	37.8	34.7
2871	26.5	29.4	23.5	25.3	27.3	29.7	43.0	31.0	58.2	52.3
2872	52.4	59.7	60.8	59.9	66.3	55.8	54.2	59.8	55.2	58.1
2873	26.3	32.9	29.1	28.8	33.3	36.5	41.1	46.3	43.2	76.4
2874	25.8	25.7	25.4	26.5	26.6	33.7	36.2	28.2	35.1	36.8
2875	24.6	26.5	26.6	25.4	27.7	29.7	33.1	36.6	36.5	34.7
2911	53.3	42.2	34.9	41.9	48.8	38.9	57.5	62.9	58.8	53.3
2912	36.8	33.2	38.6	35.0	33.9	38.8	40.4	43.5	49.5	45.9
2913	34.8	33.7	35.8	36.9	38.8	37.3	39.1	41.1	36.2	47.4
2914	32.8	29.9	32.9	28.7	32.9	35.4	23.6	32.1	37.5	45.1
2921	25.3	27.2	33.8	34.1	35.7	40.6	42.4	34.5	40.8	41.0
2922	30.6	31.8	35.6	29.8	36.6	38.6	39.2	47.4	49.4	49.2
2923	33.3	30.9	29.4	37.6	38.1	37.5	38.5	43.4	46.5	47.4
2924	30.2	30.2	30.4	32.1	28.9	36.3	39.1	34.4	39.2	45.3
2931	49.7	36.0	41.2	51.2	68.1	76.6	*	7.0	11.7	58.2
2932	23.2	29.1	27.2	25.8	32.3	33.8	*	34.5	37.5	34.1
2940	32.7	42.6	39.5	30.9	40.9	32.1	34.5	44.2	41.5	45.9
2951	37.5	25.4	25.8	34.9	29.5	76.7	41.4	42.5	53.9	56.7
2952	39.8	46.0	33.6	40.9	48.5	58.7	53.0	46.7	65.0	63.5
2953	29.8	34.2	32.1	30.4	36.0	37.6	39.0	44.9	52.0	40.2
2954	21.3	20.8	27.7	21.9	31.7	30.4	28.3	38.3	43.3	28.5
2955	25.3	19.6	38.6	41.5	32.5	26.8	41.6	31.9	39.0	50.6
2956	35.5	32.3	33.5	30.7	34.6	35.5	39.0	41.9	42.9	44.5
2960	32.1	32.7	37.9	31.4	42.7	44.6	46.3	56.0	66.8	63.8
2971	27.0	25.0	30.0	28.8	35.8	38.3	42.7	30.9	38.8	36.0
2972	24.1	28.4	28.4	22.0	27.6	27.4	33.8	33.4	34.7	23.2
3001	20.2	18.3	30.6	27.1	31.5	45.6	49.3	40.9	48.3	52.2
3002	62.5	43.4	41.3	37.7	70.3	67.7	82.1	47.1	50.2	53.2
3110	24.3	29.9	31.4	28.0	28.4	30.7	34.5	43.3	48.2	48.7
3120	31.9	32.7	31.6	33.9	34.4	34.8	39.0	37.5	35.9	38.1
3130	26.6	26.2	29.5	30.4	25.7	34.9	42.1	25.1	31.6	47.7
3140	28.1	26.4	29.5	23.2	25.6	27.7	27.3	34.9	35.7	47.2
3150	22.1	26.4	28.3	26.6	29.1	29.0	27.9	39.1	44.9	35.8
3161	19.3	29.8	32.5	25.8	28.0	30.2	28.5	27.6	27.9	54.6
3162	28.4	30.6	33.4	33.9	30.8	32.7	38.3	38.3	44.2	41.5
3210	36.5	38.6	44.7	34.5	39.5	39.0	40.2	45.2	41.1	47.7
3220	63.2	69.3	65.5	10.0	27.2	38.5	41.8	54.5	64.0	73.9
3230	25.8	26.0	34.4	32.8	40.9	34.1	43.8	34.9	71.1	73.0
3310	31.2	36.1	37.3	34.2	41.5	37.2	41.2	43.7	45.3	45.7
3320	33.0	33.0	38.8	40.3	43.8	50.5	54.7	50.4	59.9	53.7
3330	39.4	39.3	38.0	28.6	40.1	37.2	45.9	61.5	43.8	53.1
3340	30.4	32.9	25.7	36.1	24.4	30.2	37.7	37.7	40.1	51.5
3350	20.9	23.4	28.7	23.6	29.7	34.4	37.4	38.3	36.7	62.3
3410	44.2	38.3	31.9	46.6	44.8	44.9	56.5	49.9	62.3	73.8
3420	26.1	26.2	26.0	26.4	29.8	30.7	33.4	36.8	38.9	37.1
3430	32.7	30.9	29.9	31.8	32.6	32.0	34.3	37.7	38.9	41.4
3511	34.2	51.5	30.6	28.0	29.1	33.8	37.4	31.2	35.9	57.3
3512	21.4	22.8	23.4	38.5	25.9	26.9	32.8	28.0	30.6	33.6
3520	*	46.0	37.0	34.0	36.9	32.5	28.7	54.4	53.3	34.1

Table A3 continued

£ thousands										
SIC03	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
3530	53.4	61.9	56.6	62.1	69.9	61.2	63.9	65.7	68.9	71.5
3541	22.0	21.7	35.1	51.1	73.5	63.1	44.6	43.3	42.7	60.5
3542	16.7	26.1	37.8	26.8	17.9	19.5	22.2	22.6	42.5	37.3
3543	34.6	22.4	43.3	39.6	30.4	31.1	32.4	33.3	39.4	40.7
3550	31.0	19.5	21.2	20.7	20.7	32.0	35.3	26.7	41.3	24.4
3611	23.3	26.4	23.2	24.9	26.9	24.3	27.1	31.8	31.8	35.6
3612	31.9	28.9	30.4	32.0	28.4	30.0	34.5	39.4	43.2	46.3
3613	32.0	31.2	31.3	29.6	27.9	29.3	32.3	37.4	32.6	39.3
3614	22.5	22.8	20.3	24.1	25.6	26.7	24.8	26.9	27.9	36.1
3615	24.6	24.6	23.1	25.7	24.1	24.6	25.0	24.4	29.3	30.4
3621	66.5	40.0	31.3	29.4	*	*	*	*	*	*
3622	27.8	33.4	36.4	39.6	*	*	*	33.3	*	*
3630	16.2	21.1	25.9	34.5	25.0	28.1	32.5	26.6	25.9	29.0
3640	26.0	27.4	32.1	34.2	35.1	32.3	32.1	46.2	33.2	28.7
3650	29.9	27.6	33.6	29.9	31.5	31.3	39.5	37.5	34.7	32.7
3661	23.4	33.2	40.0	33.1	27.0	49.3	35.8	23.2	*	*
3662	19.3	26.4	30.3	29.8	22.2	27.4	32.3	32.1	*	*
3663	22.4	23.9	23.0	25.4	26.3	25.0	30.1	28.4	24.6	38.2
3710	39.4	36.7	38.7	33.3	48.5	50.8	92.5	54.4	79.2	98.2
3720	19.1	23.3	20.9	31.8	23.9	25.6	34.0	38.0	45.1	49.5
Electricity, gas and water supply										
4100	94.6	91.8	78.4	94.4	129.5	104.7	117.2	154.1	*	156
Construction										
4511	32.0	34.1	39.9	39.2	44.3	36.2	39.0	36.6	*	49.5
4512	67.6	50.4	25.0	43.8	25.0	27.6	26.9	28.0	24.6	156.4
4521	28.6	32.1	34.0	40.5	42.3	48.5	51.4	54.6	79.2	50.6
4522	23.1	26.4	29.4	30.1	33.2	34.7	35.0	40.6	44.0	52.3
4523	26.6	28.2	26.6	34.0	34.6	34.0	40.2	45.5	45.6	45.2
4524	42.2	25.6	36.9	17.5	33.9	80.6	59.0	54.4	89.0	86.4
4525	22.8	32.7	35.3	34.0	37.4	30.0	34.4	46.7	51.5	53.9
4531	27.3	27.5	29.4	31.9	34.4	35.6	37.1	39.2	43.7	36.8
4532	31.9	29.1	28.2	30.3	31.2	38.4	37.3	36.7	29.2	37.8
4533	28.5	25.5	26.8	29.9	31.9	34.5	34.6	32.6	35.3	44.5
4534	19.8	21.6	29.3	32.8	27.5	36.1	28.4	43.0	30.6	39.1
4541	30.9	30.7	25.4	32.9	32.5	34.6	51.1	49.1	50.8	54.7
4542	27.3	26.5	32.2	35.2	28.4	37.4	32.6	39.8	51.8	50.8
4543	27.8	27.9	35.0	37.2	42.0	39.6	32.4	34.2	47.8	49.6
4544	18.8	22.8	26.1	26.0	26.8	28.0	27.6	32.5	34.1	40.0
4545	25.5	31.4	24.9	34.3	21.9	31.4	37.6	34.8	40.7	40.8
4550	29.8	36.0	31.5	39.6	40.3	34.7	49.6	48.6	54.7	58.4
Distribution										
5010	34.9	37.7	35.8	43.5	47.6	51.3	51.1	48.2	51.9	54.7
5020	22.4	25.3	24.2	24.6	25.8	25.9	24.6	26.8	27.3	31.9
5030	24.5	24.2	23.6	25.2	30.3	30.9	36.1	27.5	30.7	38.6
5040	33.3	20.1	36.1	29.2	30.9	32.9	30.9	19.8	29.8	32.8
5050	17.0	18.5	22.8	28.3	23.8	31.2	39.5	31.6	34.8	30.8
5110	40.0	40.4	36.8	45.0	40.9	49.3	67.3	50.7	44.3	48.6
5120	24.8	31.2	23.8	31.4	25.3	32.3	29.4	33.8	35.2	43.4
5131	32.7	23.0	22.6	31.8	42.8	33.0	36.7	38.0	37.9	31.4
5132	22.4	29.4	25.6	28.3	29.0	27.2	34.9	35.1	49.4	38.1
5133	33.4	29.2	31.7	28.8	34.7	27.0	43.4	54.7	56.8	57.2
5134	50.0	46.5	46.0	61.8	63.7	49.7	54.5	47.8	50.7	65.2
5135-37	6.6	117.3	36.4	81.6	50.7	19.3	45.2	66.8	44.2	30.8
5138	26.8	33.3	23.9	21.5	28.2	27.8	39.5	36.5	36.8	50.2
5139	16.5	23.1	20.0	26.2	25.2	33.2	32.2	25.7	42.0	40.8
5141	40.0	35.3	36.4	41.1	40.0	39.3	36.1	35.7	40.0	49.3
5142	37.0	38.0	35.7	40.9	40.7	53.1	52.3	50.0	38.8	52.9
5143	62.0	53.0	53.5	54.9	53.3	54.9	60.0	43.0	59.8	72.8
5144	33.7	37.7	33.6	27.7	31.1	26.1	29.5	27.2	25.9	26.8
5145	28.9	23.5	35.0	33.9	31.7	35.0	36.3	34.9	27.5	44.2
5146	44.5	63.9	60.8	63.2	66.3	80.7	71.0	97.0	86.6	103.7
5147	32.4	38.3	36.0	31.3	37.0	35.1	37.2	37.3	41.9	35.8
5151	69.4	107.4	72.4	94.1	126.8	212.3	276.4	282.9	263.9	215.6
5152	30.4	39.2	32.0	35.8	43.0	40.8	54.8	60.0	69.2	83.3
5153	29.8	27.7	28.1	34.7	29.6	38.0	38.6	37.4	41.6	48.9
5154	30.3	30.5	28.5	29.1	31.2	32.3	35.8	37.7	42.3	36.3

Table A3 continued

£ thousands										
SIC03	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
5155	58.0	65.6	50.1	55.3	39.8	46.8	52.2	61.5	49.3	47.3
5156	44.4	44.0	45.8	38.2	32.5	40.5	38.1	85.7	43.5	54.9
5157	31.1	31.4	28.0	36.3	36.4	44.3	53.9	69.7	53.4	93.7
5164****	57.0	49.0	61.9	66.9	58.2	**	**	**	**	**
5170****	33.0	28.3	32.2	40.8	29.4	**	**	**	**	**
5181***	44.3	37.8	30.6	43.3	30.7	29.1	37.6	39.8	52.0	47.1
5182***	44.1	35.4	41.4	46.8	42.2	47.6	53.9	53.5	48.9	71.8
5183***	37.2	27.9	40.4	49.8	30.6	34.1	42.5	39.4	44.8	31.0
5184****	**	**	**	**	**	52.0	**	**	**	**
5185****	**	**	**	**	**	42.9	**	**	**	**
5186****	**	**	**	**	**	48.7	**	**	**	**
5187***	51.1	47.6	47.0	50.8	45.7	46.2	43.4	55.0	64.3	55.7
5188***	23.9	24.9	26.0	30.3	37.6	36.5	44.5	45.8	40.3	48.6
5190****	**	**	**	**	**	35.2	**	**	**	**
5211	16.2	17.3	16.9	14.6	14.4	14.6	14.9	15.7	17.4	17.4
5212	15.5	14.3	15.4	17.0	19.7	20.9	19.9	21.8	28.8	24.3
5221	8.9	10.8	10.2	12.5	12.6	12.5	14.8	14.6	16.3	16.6
5222	13.0	14.6	13.8	13.3	17.5	16.1	17.1	19.5	19.3	18.7
5223	14.2	12.1	13.9	15.7	15.2	17.4	13.6	19.0	15.2	22.7
5224	9.6	12.5	11.2	12.3	12.5	11.8	13.4	14.2	15.3	15.8
5225	7.0	6.0	7.7	7.2	8.7	8.2	9.0	7.5	5.4	10.5
5226	6.4	7.8	8.3	9.9	7.3	9.0	11.2	12.4	7.6	14.2
5227	11.3	14.3	13.8	15.3	15.3	14.8	15.3	16.6	17.5	20.5
5231	15.7	15.4	16.4	18.5	21.4	20.1	23.6	27.7	33.7	30.7
5232	13.4	8.6	29.5	28.2	30.1	33.7	38.4	27.5	40.8	28.8
5233	10.5	15.2	12.1	12.1	15.7	15.6	19.1	15.6	24.2	19.2
5241	12.0	14.5	15.9	15.0	15.3	15.3	16.6	14.9	12.6	20.0
5242	12.6	18.7	17.6	19.1	19.2	20.4	20.8	22.4	25.3	23.7
5243	10.5	10.3	11.9	13.1	14.5	15.8	16.3	18.5	18.6	17.9
5244	19.1	21.2	23.1	24.0	23.8	25.1	26.8	23.0	23.4	21.8
5245	18.6	16.1	18.9	22.5	22.6	20.6	25.3	23.2	27.6	25.2
5246	17.5	22.3	20.9	20.7	21.8	21.7	23.9	22.2	24.3	22.4
5247	10.5	11.0	12.3	13.9	14.8	14.7	15.2	14.5	16.6	17.8
5248	13.9	16.5	17.3	19.0	19.2	21.8	22.1	20.7	22.0	23.9
5250	20.1	20.2	23.1	27.4	23.9	21.8	31.4	32.7	27.3	32.1
5261	26.4	23.3	15.9	19.4	24.1	23.6	28.9	30.4	40.4	50.9
5262	8.6	9.5	8.5	8.9	6.7	9.5	9.6	16.0	10.7	16.2
5263	18.1	16.9	24.9	22.5	22.7	21.6	23.2	30.7	29.8	33.4
5270	13.9	19.2	19.6	17.3	17.0	18.1	21.2	22.4	29.1	33.1
Hotels and catering										
5510	15.9	18.1	18.6	19.2	18.7	18.6	20.5	20.9	22.4	23.5
5521	13.2	12.6	17.9	13.9	13.4	14.0	14.2	14.2	9.9	14.5
5522	36.5	18.7	32.7	34.6	32.2	34.4	38.7	42.0	38.1	40.3
5523	15.7	14.4	18.8	17.1	20.9	19.4	20.5	23.1	19.0	22.9
5530	9.8	10.4	11.6	11.9	12.0	11.8	12.5	12.6	12.8	14.0
5540	10.3	10.4	10.5	11.6	12.7	12.9	14.7	13.8	15.3	14.3
5551	8.1	*	9.8	11.7	13.7	16.5	7.6	21.8	8.4	12.6
5552	9.6	9.8	10.3	10.1	13.1	11.6	13.8	14.7	13.6	14.2
Transport, storage and communication										
6010	32.9	39.2	47.2	50.8	60.0	42.2	36.0	44.3	44.7	47.6
6021	27.9	25.7	24.6	22.6	22.7	25.5	25.2	25.9	30.0	31.6
6022	18.0	17.6	17.0	14.1	18.2	18.1	18.0	18.3	18.3	23.7
6023	16.8	18.5	18.4	14.7	18.6	20.2	20.6	26.3	23.6	22.6
6024	25.3	27.7	29.1	29.2	29.8	29.7	28.3	32.3	34.6	38.7
6110	74.0	71.7	84.8	93.7	115.1	94.1	117.9	126.3	135.0	141.2
6120	16.3	18.2	34.5	28.1	32.9	27.0	37.3	26.6	19.9	29.1
6311	27.6	35.9	37.8	37.4	41.8	48.0	46.4	55.5	66.7	65.2
6312	29.7	31.5	29.7	29.9	30.2	34.3	35.0	38.5	38.4	38.9
6321	88.7	92.6	67.6	81.8	69.5	52.1	85.1	65.0	98.4	100.9
6322	53.3	65.4	53.0	53.2	66.4	71.5	63.7	64.3	82.4	79.0
6323	95.6	85.9	83.8	92.7	84.6	86.4	91.4	96.6	92.5	82.7
6330	25.6	25.0	24.3	27.2	29.6	37.1	31.4	39.1	37.5	47.2
6340	39.6	43.7	45.2	37.1	37.0	38.9	43.1	52.3	57.6	69.3
6412	30.0	27.4	*	*	*	*	*	27.7	*	*
6420	84.9	82.4	83.7	73.2	80.9	97.2	111.1	115.5	119.3	123.4

Table A3 continued

£ thousands										
SIC03	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Renting and business activities										
7110	104.5	106.1	79.6	116.6	104.9	107.0	109.0	111.7	121.4	141.3
7122	19.9	48.0	40.8	18.0	13.2	14.6	23.4	16.3	28.3	29.3
7131	58.1	53.7	25.8	26.6	35.4	49.0	40.2	53.4	82.1	75.6
7132	41.5	41.6	42.3	44.0	49.0	48.9	48.9	56.6	55.2	67.9
7133	202.8	67.8	151.1	189.5	101.3	69.8	100.8	91.0	132.5	151.9
7134	52.8	53.9	49.8	54.6	59.2	57.3	55.3	52.1	57.8	73.0
7140	24.7	26.8	26.1	31.7	35.6	30.3	30.4	33.1	26.2	25.2
7210	43.0	31.2	28.4	40.6	26.7	47.0	66.7	53.0	59.5	57.6
7220	52.4	49.0	50.6	49.7	53.7	54.5	57.6	67.7	66.4	74.9
7221****	**	**	**	**	**	58.6	57.7	48.6	40.3	63.3
7222****	**	**	**	**	**	54.3	57.6	68.4	67.1	75.2
72.3/72.4	55.4	65.8	55.2	54.6	54.4	51.1	56.3	51.3	58.1	71.9
7250	26.9	35.9	36.0	44.5	39.9	38.2	41.5	44.1	38.9	23.0
7260	28.6	36.0	29.2	36.4	44.4	43.3	51.3	52.3	57.5	65.2
7411	36.0	37.9	43.5	45.7	45.9	47.0	49.6	53.7	59.0	59.0
7412	38.6	38.4	39.3	44.3	44.9	45.7	44.6	48.0	57.9	55.5
7413	19.6	25.0	25.6	23.6	24.6	22.9	31.5	25.6	33.1	30.4
7414	49.5	49.1	53.8	46.2	42.3	47.1	46.6	52.9	56.0	63.8
7415	69.1	29.0	37.8	51.0	43.2	15.1	18.3	2.7	8.0	12.5
7420	39.5	37.9	40.6	41.7	38.3	46.4	45.8	50.2	50.6	55.1
7430	29.5	29.7	30.1	28.7	31.7	44.3	45.2	39.7	53.6	42.7
7440	39.2	61.3	62.6	53.8	56.4	60.7	53.9	75.7	63.3	67.7
7450	17.6	19.4	22.2	20.1	21.7	22.2	24.1	24.7	27.2	28.4
7460	14.1	15.6	17.2	17.4	20.0	19.7	20.8	23.7	25.3	27.2
7470	6.0	6.5	6.8	7.8	8.5	9.5	9.7	9.8	9.8	11.9
7481	19.6	23.1	27.9	21.9	22.3	24.8	31.6	32.1	33.5	29.0
7482	20.8	22.1	20.1	25.8	29.7	23.9	36.3	32.3	40.1	46.3
7485***	23.8	29.1	22.1	27.5	25.6	29.3	37.5	34.7	32.1	29.5
7486****	**	**	**	**	**	21.5	16.4	18.3	16.2	21.4
7487***	35.7	37.3	42.7	37.3	35.2	36.9	42.0	42.5	44.2	43.7
Other services										
9000	66.0	74.7	62.8	56.2	82.1	76.3	75.4	89.9	105.2	96.5
9001****	**	**	**	**	**	182.8	165.7	200.7	233.1	200.4
9002****	**	**	**	**	**	37.7	41.3	48.6	60.5	56.6
9003****	**	**	**	**	**	48.7	39.9	46.7	62.0	48.9
9111	30.0	26.6	27.1	26.6	33.6	25.1	35.1	30.4	29.7	49.7
9112	25.0	21.9	21.4	17.5	19.9	23.7	26.4	36.8	41.5	34.1
9120	32.0	32.0	28.9	30.6	38.2	28.2	33.0	35.8	41.7	42.0
9131	-1.4	-4.7	-4.4	-6.5	-7.6	-4.1	-6.0	-6.6	-3.1	-4.8
9132	2.7	*	-3.2	-2.8	-1.4	-1.3	-1.0	-4.6	-0.2	0.3
9133	10.1	11.3	8.9	8.8	8.3	8.0	9.5	11.4	15.4	13.9
9211	28.9	56.9	50.5	28.0	25.8	48.4	36.0	40.0	78.7	42.5
9212	108.0	75.9	106.4	169.4	123.9	143.6	126.2	172.4	255.6	150.2
9213	18.8	17.2	21.6	20.3	28.4	34.6	29.7	30.2	24.6	23.8
9220	65.6	66.2	78.7	88.6	90.5	81.6	96.1	66.6	21.3	26.1
9231	33.9	34.8	32.7	32.7	35.2	38.8	41.0	34.7	35.0	49.6
9232	19.9	17.4	15.9	12.6	16.4	21.1	21.0	24.1	17.8	20.3
9233	29.6	24.7	32.1	35.1	41.3	42.0	38.1	40.8	22.7	22.0
9234	37.1	25.3	21.4	31.4	48.5	24.6	31.1	26.7	31.8	39.0
9240	61.3	66.8	73.3	103.3	*	44.8	54.9	77.9	86.1	106.3
9253	10.7	14.1	5.8	8.5	8.4	8.0	9.6	8.9	10.8	14.0
9261	11.1	8.7	9.8	10.1	9.8	11.5	11.4	12.4	13.7	17.2
9262	13.9	17.3	16.8	18.9	20.4	22.7	20.6	23.5	23.9	24.2
9271	24.1	30.1	29.8	26.5	34.4	30.5	36.4	40.2	37.8	44.5
9272	11.3	11.5	10.6	14.0	13.1	13.5	14.4	13.7	16.7	9.5
9301	14.9	15.8	20.2	18.2	19.6	17.6	15.9	17.6	21.2	21.0
9302	10.2	11.4	12.7	13.9	12.3	11.7	13.9	13.7	15.1	15.2
9303	19.6	24.7	22.5	30.8	28.5	29.9	32.7	28.0	26.8	28.7
9304	18.7	17.8	24.8	25.1	20.2	22.6	16.4	18.4	26.7	21.4
9305	20.5	23.9	24.9	27.4	24.7	29.7	33.0	37.9	35.2	31.5

Notes:

1 Excluding SIC Divisions 12, 13, 40, 65-67, 70, 73 and 75-85.

***** SIC discontinued from 2003.

**** New SIC from 2003.

*** Change of industry classification from SIC92 to SIC03 – pre-2003 data have been assigned to the new classification.

** Not available.

* Information suppressed to avoid disclosure or because employment estimate is less than 500.

Source: Office for National Statistics

ARTICLE

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The economic impact of tourism across regions and nations of the UK

SUMMARY

This article reports on work undertaken by the Tourism Intelligence Unit (TIU)¹, based within Office for National Statistics (ONS), to measure the economic impact of tourism at the regional level. The methodologies and data analysis presented look at the demand and supply components of tourism with the aim of providing a reliable measure of the regional Gross Value Added (GVA) of tourism. Two measures of GVA have been identified as international best practise². GVA of the tourism-related industries (GVA-TI) provides a robust measure of the total supply-side value of those industries which meet the demand of tourists (as well as of residents). However, Tourism Direct Gross Value Added (TD-GVA) is recommended as the principle indicator of the regional value of tourism as it moderates the value TD-GVA in the light of the proportion of consumption made by tourists (as distinct from consumption made by residents in those industries).

Introduction

Tourism as a sector is often considered, perhaps mistakenly, as a relatively minor engine of economic development when compared with sectors such as retail or manufacturing. It is recognised, however, that tourism can play a major role in relieving poverty in developing regions and countries, and in supporting the regeneration of obsolete and run-down parts of cities in developed countries. The study of tourism's economic impact becomes perhaps more relevant in the regional context, due to its natural dependence on specific locations and amenities. In the case of the United Kingdom, a recognised lack of coordination in the production of official statistics for tourism both at the national and regional level renders even more difficult a precise evaluation of the net economic effects of the sector on both the national and the regional economies. This paper represents a groundbreaking study in presenting a simple accounting methodology for the production of regional figures consistent with national headline figures contained in the Experimental UK Tourism Satellite Account (E-UKTSA)³ currently under production in the ONS. The final aim of our methodology is to reconcile the demand and supply of tourism related activities at the regional level in the UK.

Measuring the volume of tourism requires the simultaneous consideration of its demand and supply components. Tourism as an activity is defined by what tourists do and what they spend their money on – it is defined by tourism demand, not by any formal classification by industry or sector.

Expenditure by tourists takes place in many different industrial sectors, and constitutes a varying proportion of the total expenditure in each of those sectors. In addition, the measurement of tourism is made even more complex by the lack of a production function and a clearly identifiable output. Finally, tourism is characterized by highly fragmented demand, which is served to a significant degree by small and medium-sized firms. This poses further problems of measurement due to the difficulties of measuring the economic activities of very small firms, which are more difficult to survey.

The measurement of tourism's economic impact represents a complex procedure even at the national level. National headline figures resulting from synthesizing different sources of information are, however, sufficiently accurate and allow for the reconciliation of demand and supply side activities. The production of national data on tourism economic activity is *per se* very important in that it represents an important step forward in comparing the performance of the sector both internationally and across industrial sectors. The methodological framework to obtain national figures is standardized and promoted internationally through the Tourism Satellite Account (TSA). The TSA allows for the computation of a demand to supply ratio, which is considered central in the TSA framework allowing for the computation of TD-GVA.

The measurement of tourism sub-nationally is more demanding. The same data sources used to obtain national figures

become less accurate when considered at a lower degree of aggregation (for example regionally rather than nationally or, in a time perspective, quarterly rather than annual) and more volatile over time. There is also a lack of well established international recommendations. The TSA is broadly recognized as the most appropriate method to measure the economic impact of tourism but, being based on Supply and Use Tables (SUT) produced at the national level, is not easily adaptable to sub-national estimates. Notwithstanding these difficulties, the TSA framework can be adopted to play a fundamental role in the production of regional figures. The construction of the TSA represents a complex exercise of classification of all the data sources available to measure the components of tourism demand and supply and represents a necessary step in building up the expertise to move to the sub-national level measurements.

In the remainder of this paper a simple methodology to reconcile the demand and supply of tourism is proposed and accompanied by some preliminary figures. The methodology is mainly designed to allow English Regional Development Agencies to assess the contribution of tourism within regions in a consistent form, allowing a robust performance comparison across regions. The current work is part of the wider context of the development of an Integrated System of Tourism Statistics (ISTS) within the Tourism Intelligence Unit (TIU) at ONS, whose central component is the E-UKTSA. Regional figures are produced to be

consistent with the headline figures reported in the E-UKTSA. The following section introduces ONS methodology for reconciling demand and supply figures of tourism related economic activities and details the steps leading to the computation of our TD-GVA figures. The third section displays figures based on the methodology. Section four draws some conclusions and pointers for further research.

A simple methodology to reconcile demand and supply of tourism

The methodology presented in the current work is mainly aimed at optimizing the amount of information from all the data sources available at the regional level. This is achieved through compiling and analysing data which are produced within ONS and also data sourced externally. ONS data sources entirely cover the measurement of the supply side of tourism, in other words the ensemble of industries grouped by international recommendations in the Standard International Code of Tourism Activities (SICTA), which includes 42 five-digits SICs aggregated in 10 industries (Box 1 summarizes the SIC codes by industry). On the demand side, the only component of tourists' consumption measured within the ONS is the inbound expenditure of tourists. The consumption of overnight domestic tourism and the expenditure of domestic excursionists (or tourism day visits) are all collected from external suppliers.

The Annual Business Inquiry (ABI) 2006,

which includes a scaling factor to ensure that data are representative at the regional level, is the main source for measuring the supply side of tourism. The first step in constructing a measure of Gross Value Added of Tourism Industries (GVA-TI) is to generate a GVA-TI(%) measure in order to apportion the total supply of commodities to those in the tourism related SICTAs.

The GVA-TI(%) statistic reports GVA in the SICTAs (see Box 1) as a percentage of total GVA, such that

$$GVA - TI(\%) = \frac{\sum_{i=1}^N GVA_i^{ABI}}{\sum_{k=1}^K GVA_k^{ABI}} \times 100$$

where $n = 1, 2, \dots, 42$ is meant to sum GVA over SICTAs and $k = 1, 2, \dots, 638$ sum the GVA over the complete set of 5-digits SICs composing the whole economy. This ratio is important for showing the relative importance of tourism related activities in relation to the overall regional economy.

Although GVA-TI(%) is derived from a unique dataset and hence has the advantage of internal consistency, there are two important issues to bear in mind when interpreting the statistics. First, tourism is defined by the activities of tourists and what they spend their money on – so is a demand rather than a supply concept. Tourists' spending only accounts for a proportion of the expenditure recorded in each sector of the tourism-related industries, the balance representing the expenditure of residents in those sectors. Therefore, in producing

Box 1

International definition of tourism related sectors defined on the basis of SIC07 codes

Industry	SIC07	Industry	SIC07
Railway passenger transport.	49100	Transport Equipment Rental	77110
Road Passenger transport	49320		77341
	49390		77351
Water Passenger transport	50100	Sporting and recreational activities	77210
	50300		92000
Air Passenger transport	51101		93110
	51102		93199
Accommodation for Visitors	55100		93210
	55201		93290
	55202	Country-specific tourism characteristic activities	82301
	55209		82302
	55300	Cultural Activities	90010
	55900		90020
Food and beverage serving activities	56101		90030
	56102		90040
	56103		91020
	56210		91030
	56290		91040
	56301		
	56302		
	68209		
	68320		

TD-GVA some further apportionment is required.

Second, this index can suffer from an under-representation of small firms which are below the £61,000 VAT threshold since one of the main sources of data excludes firms not VAT registered. For firms below the £61,000⁴ VAT threshold it is not compulsory to report their turnover to Revenues and Customs (HMRC), which represents the main source to update the Inter Departmental Business Register (IDBR)⁵. The ABI itself represents a stratified sample drawn from the IDBR.

ABI data version used in this study includes 110,292 observations in total, of which 9.3 per cent are below the VAT threshold. The percentage of firms below the VAT threshold decreases to 7.3 per cent when only considering the firms operating in tourism related industries, which total 21,691. These results are reversed, however, when considering the economic importance of small firms. The share of turnover produced by small firms represents 8.6 per cent when considering the overall economy but increases to 17.3 per cent when looking only at the SICTAs. This apparently counter-intuitive effect is mainly due to the weights used to rescale the turnover variable. The weighting system seems to reflect the broadly accepted view that tourism as a sector is reliant to a large degree on medium and small enterprises.

The formula for $GVA-TI(\%)$ can also be computed at the regional level providing a good indicator to compare regional economic performance.

This ratio can be used to calculate $SP-TI_i^{SUT}$ which denotes the tourism related supply of products at purchaser prices for each of the $i = 1, 2, \dots, 12$ regions and expressed in SUT units.

$$SP - TI_i^{SUT} = \left(\frac{TOTGVA_i^{ABI}}{TOTGVA_{UK}^{ABI}} \times TOT - SP^{SUT} \right) \times GVA - TI(Ratio)_i^{ABI}$$

The first part of the formula (in brackets) computes the total supply of products at purchaser prices in each region by using GVA shares based on the ABI to apportion the total supply reported in the SUT ($TOT-SP^{SUT}$). Using the SUT as a numeraire allows regional totals summing up to national UK figures to be obtained.

The second part of the formula uses the $GVA-TI(Ratio)$ to compute what is attributable to the tourism related industries present in region i . This gives regional totals of tourism related supply of products at purchasers' prices.

Having constructed a comprehensive set of

figures for the supply side the next task is to identify the expenditure on domestic tourism, and to use this to proportion the supply-side measure of GVA in tourism-related industries as between tourists and residents 'at leisure'. The essential point is that tourism is defined as the activities and expenditure of 'visitors' or 'tourists' – these are people away from their 'usual environment' of where they live, work and go about their daily life. 'Leisure' is a term used in this context to describe the similar activities and expenditure of people but *within* their usual environment, such as residents. Taken together, they account for the expenditure in the tourism related industries.

Calculating UK tourism consumption is more complex due to the numerous data sources that exist. Furthermore these data sources change according to the component of the tourism consumption being considered. There are four components of tourism consumption which need to be captured:

- spending within the UK by inbound visitors from overseas
- spending by domestic overnight visitors
- spending on day visits (sometimes called 'excursionists'); and
- domestic spending of outbound residents on aspects of an overseas trip before they leave the UK

As mentioned already the only demand component measured in ONS is the expenditure of inbound visitors through the International Passenger Survey (IPS). The expenditure of domestic overnight visitors is contained in the UK Tourism Survey (UKTS) implemented by Taylor Nelson Sofres (TNS) and commissioned by the national tourist boards. Tourism day visits expenditure is measured by the English Leisure Visits Survey (ELVS) from 2005 which was commissioned by English Nature and the National Parks in England. VisitBritain have conducted a projection exercise which gives data covering day visit expenditure for England, Scotland, and Wales. Here, however, data from a previous survey, the Great Britain Day Visit Survey (GBDVS) is also relied on from 2002/3 to apportion expenditure shares across the Great Britain regions as this information is not available from ELVS. Therefore, in the remainder of the paper the acronym GBDVS/ELVS reflects the use of the two surveys to arrive at day visit expenditure data at the regional level. The last component of the demand side is represented by the domestic expenditure of outbound tourists before leaving the country. This is the only

component for which data sources are not available and some degree of modelling is required.

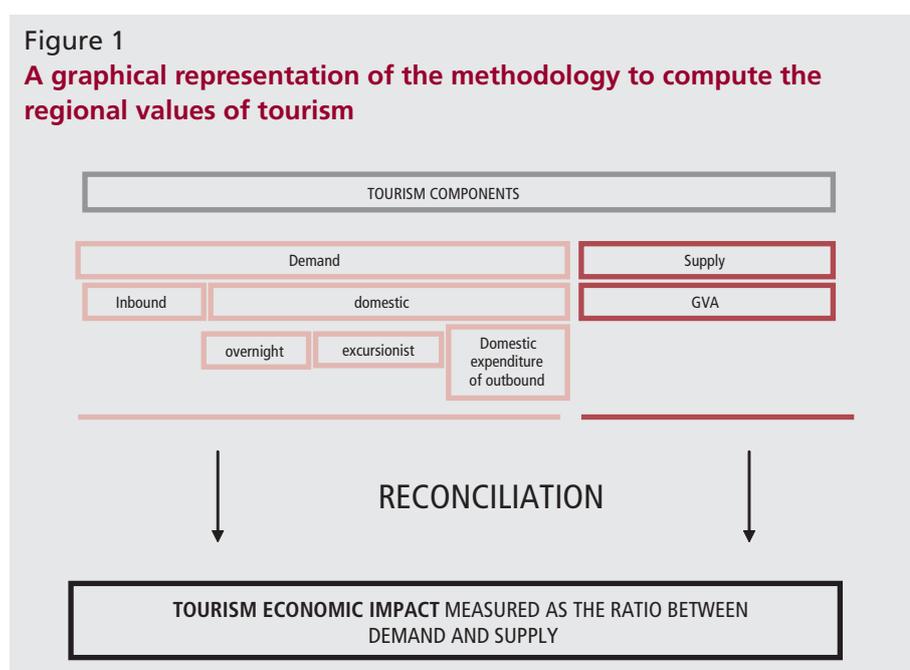
The IPS, UKTS and GBDVS/ELVS are all available at the regional level. The expenditure on tourism day visits for Northern Ireland is not covered by the GBDVS/ELVS and obtained from a Tourism Satellite Account based on a reference year of 2003. Data from IPS and UKTS are transformed in three years averages to smooth out possible anomalous features. Based on the three years averages, regional shares are computed and applied to headline figures of the E-UKTSA.

The consumption of outbound tourism flows is modelled on the basis of the sectoral structure as broken down in the E-UKTSA. Regional shares for each of the components are then computed through the ABI to apportion the tourism industries total as reported in the E-UKTSA. As an example, consider the domestic outbound tourism expenditure in railways. Table 2 of the E-UKTSA reports a figure of around £482 million for the expenditure of domestic outbound tourists in railway passenger transport before leaving the country. In order to apportion this figure across regions the ABI is used to compute the turnover shares of each region within the railway passenger sector. Regional total domestic expenditure is obtained as follows:

$$DomOutExp_i = \left(\sum_{k=1}^5 \frac{Turnover_{i,k}^{ABI}}{Turnover_k^{ABI}} \right) \times Expenditure_k^{E-UKTSA}$$

where $k = 1, 2, \dots, 5$ is used to compute shares and apportion over the five main components of outbound tourists' domestic expenditure – railway passenger transport, road passenger transport, water passenger transport, air passenger transport, travel agencies and other reservation services activities. The simple apportionment formula also makes clear that the shares are based on the ABI and these are then used to apportion the headline figures from the E-UKTSA.

Such an approach allows a robust approximation of the regional figures for outbound tourists' domestic expenditure where direct data sources are not available although two warnings need to be provided. First, using a supply side data source to apportion a demand component brings with it an evident conceptual contradiction. Second, the regional shares for each of the individual tourism industries as defined by international recommendations can equal zero. This in some cases brings some very counter-intuitive results, for example stating



Source: TIU

Table 1
The economic impact of tourism by regions and nations for the year 2006

Region	Total tourism expenditure (billion)	Total GVA (billion)	GVA-TI (per cent)	DSR (per cent)	GVA-TI (billion)	TDGVA (billion)
East Midlands	5.2	74.7	5.1	2.8	3.8	2.1
Eastern	9.8	102.1	6.3	3.8	6.4	3.9
London	20.7	247.5	8.2	3.4	20.3	8.3
North East	2.8	35.9	6.0	3.1	2.1	1.1
North West	7.9	108.6	8.3	2.9	9.0	3.1
South East	18.2	181.9	8.0	4.0	14.6	7.2
South West	7.6	76.9	8.9	4.0	6.9	3.1
West Midlands	6.3	89.7	6.2	2.8	5.5	2.5
Yorkshire and the Humber	5.2	81.3	5.6	2.5	4.6	2.1
Total England	83.7	998.6	7.3	3.3	73.3	33.4
Northern Ireland	1.9	29.8	6.7	2.5	2.0	0.7
Scotland	8.5	113.4	5.2	3.0	5.9	3.4
Wales	4.0	35.5	7.9	4.5	2.8	1.6
Total UK	98.1	1177.2	7.1	3.3	83.9	39.2

Source: Annual Business Inquiry 2006, Supply and Use Tables 2006, International Passenger Survey (average 2006, 2007, 2008), UK Tourism Survey (average 2006, 2007, 2008), Great Britain Day Visit Survey 2002/3, English Leisure Visits Survey, 2005, Authors' calculations

that the share of passenger railway transport in a given region could be zero.

Reconciliation between demand and supply sources is then obtained by computing the 'demand to supply' ratio. This represents the most important figure within the TSA framework⁶, reflecting a simple ratio of the sum of all the demand side data components to the total obtained from the supply side data components:

$$DS(ratio)_i = \frac{TotInbExp_i + TotDomNightExp_i + TotDomDayVis_i + TotOutDomExp_i}{TOT - SP_i^{SUT}}$$

This simple ratio is usually expressed as

a percentage. In the numerator all the components of tourism for each of the 12 regions $i = 1, 2, \dots, 12$ are summed – these are total inbound tourism $TotInbExp_i$, total domestic overnight expenditure $TotDomNightExp_i$, total domestic expenditure by day visitors $TotDomDayVis_i$, and total domestic expenditure of outbound tourists before they leave the region $TotOutDomExp_i$. The denominator is just the total supply of products at purchasers' prices for the region i in SUT units apportioned through the ABI.

Figure 1 provides a graphical summary of the most important demand and supply components to be reconciled.

Finally, the demand to supply ratio can

be employed to obtain figures for Tourism Direct Gross Value Added (TDGVA). The total Gross Value added of the UK is reported in the SUT which is apportioned by region using ABI based shares and then multiplied by the DS(Ratio):

$$TDGVA_i^{SUT} = GVA_i^{SUT} \times DS(Ratio)_i$$

It is worth stressing that although all the most important figures present in the TSA can be reported it is not possible, however, to attain the complete TSA framework at the regional level. This is mainly due to the lack of regional SUTs, which would enable the regional breakdown of TDGVA sector by sector.

Results based on the methodology

Table 1 summarises the main indicators obtained by implementing the methodology outlined in this article. The rest of this section then presents further data on the supply side of tourism and its demand components, and finally showing how the two are reconciled in the construction of the TD-GVA statistic.

Figure 2/Table 2 compares the shares of each UK region in the total and tourism-specific economies. The respective figures are taken from the numerator and the denominator of the $GVA-TI(\%)$ formula. London accounts for around 21 per cent of the overall UK GVA and around 24 per cent in the tourism economy. Relative shares of the tourist economy compared to the share of the overall economy are also higher in Wales, the South West, the South East and the North West.

It is also worth considering that there may be a downward bias in the respective shares of the tourism sector for regional economies with a relatively higher share of rural activities. For example, if a farm rents out tourist accommodation during seasonal peaks of the year, but the turnover generated by this activity does not exceed the turnover generated by the farm in agriculture connected activities, then the enterprise would be classified as operating in the agriculture sector in the ABI and not included in the measurement of tourism related activities.

Figure 3/Table 3 displays the GVA generated by tourism industries (GVA-TI) expressed in percentages of total GVA for each region. The South West is the region displaying the highest share of tourism activities to the overall economy (8.91 per cent), followed by North West (8.31 per cent), London (8.22 per cent), South East (8.04 per cent) and Wales (7.92 per cent). The figures presented in Figure 3 are still exclusively

Figure 2
Regional shares with respect to the overall UK economy and with respect to the tourism related sector economy for the year 2006



Source: ABI 2006

Table 2
Regional shares with respect to the overall UK economy and with respect to the tourism related sector economy for the year 2006

Region	Overall economy (per cent)	Tourism economy (per cent)
East Midlands	6.3	4.5
Eastern	8.7	7.6
London	21.0	24.3
North East	3.0	2.6
North West	9.2	10.8
South East	15.5	17.4
South West	6.5	8.2
West Midlands	7.6	6.6
Yorkshire and the Humber	6.9	5.4
Total England	84.8	87.3
Northern Ireland	2.5	2.4
Scotland	9.6	7.0
Wales	3.0	3.4
Total UK	100.0	100.0

Source: ABI 2006

Figure 3
GVA-TI in regional/national economies, 2006



Source: ABI 2006

based on the production side of the tourism sector and, hence, they cannot be considered as consumption trends of the sector.

Turning to the demand side, **Figure 4/ Table 4** reports for each region the values of tourism expenditure broken down into the four component parts. London displays the highest level of expenditure derived from inbound visitors, in the order of £8 billion. This reflects the importance of London as a pole of attraction for leisure tourists as well

as business tourists. Figures for domestic overnight visitors' expenditure appear to be spread more equally among regions, with the South West, Scotland and the South East representing the top three regions followed by London and the North West. The largest component of tourism consumption is domestic excursionists' expenditure. In this case South East (£9.1 billion) is ranked at the top of distribution followed by London and the Eastern region with £5.5 billion

each. These figures are possibly explained by the population distribution as amenities close to more populated areas have a clear comparative advantage in attracting excursionists. It is also worth stating at this stage that the figures presented for day visitors do not include business day visitors and are representative only of excursions, or day visits, undertaken during the persons own time.

The final component of tourism consumption is represented by the domestic expenditure of outbound tourists *DomOutExp*. As discussed in the previous section this is the only component for which direct data sources are not available and for which some degree of modelling is required. Domestic consumption of outbound tourists seems to be very unevenly distributed across regions with London and the South East together accounting for sixty percent of the overall total figure. This could be supported by the fact that London represents the main route to overseas countries by air (with four international airports) and the South East is the region with the highest proportion of water passenger transport.

We have separated this last component within the table from the inbound and domestic expenditure as the latter refers more specifically to tourism expenditure in terms of the UK as a destination, for many in the sector this expenditure will be of particular interest for policy purposes.

The Demand to Supply Ratio represents a good measure of the economic importance of the tourism sector *within* regions. **Figure 5** displays the ranking of the regions. Wales turns up to be top ranked with around 4.5 per cent followed by South East and South West both with 4 per cent.

The demand to supply ratio is the central part of the analysis because it allows for the computation of the Tourism Direct GVA (TDGVA). TDGVA represents the amount of GVA directly coming from visitors' expenditure and represents the most 'accurate' figure for tourism expenditure. The demand to supply ratio is important for showing what share of the sector is directly connected to tourists and what share is instead generated by residents' expenditure. The value of regional TDGVA is presented in **Figure 6**.

The results suggest London and the South East contribute most significantly to tourism within the UK with a joint supply share over 35 per cent and a demand share around 40 per cent. However, London has a disproportionate share of inbound tourism (about half of all inbound tourism spending in the UK takes place in London) and a relatively low share of domestic tourism.

Table 3
The domestic supply at purchasers' prices for the overall regional/ national economies and for the tourism industries, 2006

Region	Total GVA (billion)	GVA-TI (billion)	GVA-TI (per cent)
East Midlands	187	10	5.1
Eastern	256	16	6.3
London	620	51	8.2
North East	90	5	6.0
North West	272	23	8.3
South East	456	37	8.0
South West	193	17	8.9
West Midlands	225	14	6.1
Yorkshire and the Humber	204	11	5.6
Total England	2502	183	7.3
Northern Ireland	75	5	6.7
Scotland	284	15	5.2
Wales	89	7	7.9
Total UK	2949	210	7.1

Source: ABI 2006

Conclusions and redirection for further research

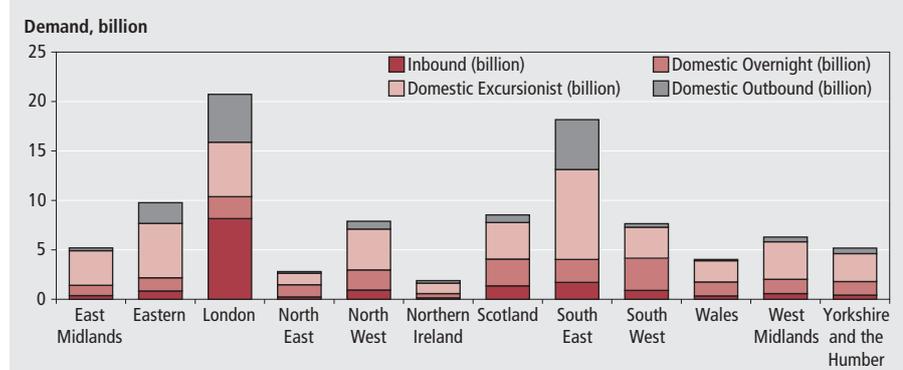
Expenditure by tourists in the UK directly accounts for 3.3 per cent⁷ of the overall economy directly connected to tourism related activities. Overall tourism consumption amounts to £98 billion within the UK economy. This article focuses on regional breakdowns contributing to these national totals highlighting the importance of tourism sector within regions and across regions. Even if the construction of regional TSAs is out of the scope of the present paper, the figures derived from the methodology are presented in a demand-supply framework that is consistent with the headline figures of the E-UKTSA.

When comparing tourism sector performance across regions, there is no doubt that London represents an outlier for both the production and the demand in tourism related activities. This however should be seen in view of another important consideration which is that the performance of regions in terms of tourism's economic impact tends to be in line with the performance of their overall economy. In that respect London can be considered an outlier also in relation to its share on the overall economy. Some exceptions are represented by Wales and the South West for which the ranking is slightly improved when looking at tourism.

The ranking changes substantially when looking at the reconciliation of demand and supply. The *within*-regional dimension of the tourism sector would not be affected by the dimension effect of the overall economy, and, hence, this represents a very useful like for like comparison of the importance of tourism related activities across regions. Regions usually lying at the bottom of the ranking based on their contribution to the UK economy can escalate the ladder to the top as is the case with Wales. The demand to supply ratio is very important in that can be directly compared with the national 3.3 per cent figure derived from the E-UKTSA given that its regional counterpart is computed in a completely consistent way.

At this point it is worth commenting further on the difference between the measures of TDGVA (£39.2 billion or 3.3%) and tourism consumption (£98.1 billion). The former is an output or product measure whilst the second is an expenditure or demand measure. The conceptual difference between the two can perhaps be better understood by referring to the Supply Use Tables (SUT) terminology. The demand figure will be higher because it is reported in purchasers' prices as opposed to TDGVA which is reported in basic prices.

Figure 4
The demand components of tourism across regions for the year 2006



Source: As Table 4

Table 4
The demand components of tourism across regions for the year 2006

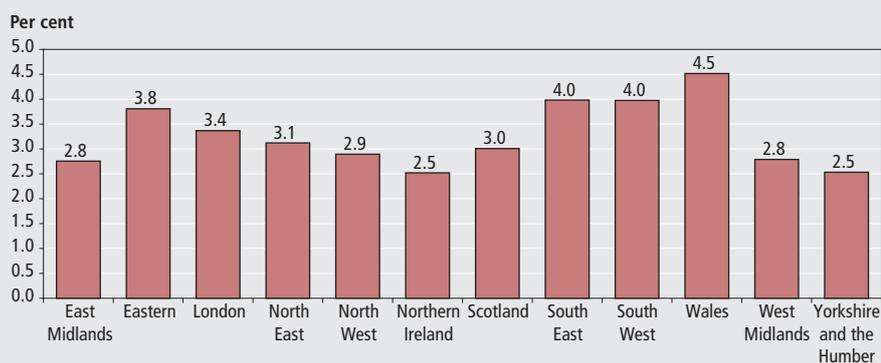
Region	UK as a destination			Expenditure in UK of tourists going outbound (billion)	Total Demand (billion)
	Inbound (billion)	Domestic Overnight (billion)	Domestic Excursionist (billion)		
East Midlands	0.4	1.0	3.5	0.3	5.2
Eastern	0.8	1.3	5.5	2.1	9.8
London	8.2	2.2	5.5	4.8	20.7
North East	0.2	1.2	1.2	0.2	2.8
North West	0.9	2.0	4.1	0.8	7.9
South East	1.7	2.3	9.1	5.0	18.2
South West	0.9	3.3	3.1	0.4	7.6
West Midlands	0.6	1.5	3.8	0.5	6.3
Yorkshire and the Humber	0.4	1.4	2.8	0.6	5.2
Total England	14.1	16.3	38.7	14.6	83.7
Northern Ireland	0.1	0.4	1.1	0.3	1.9
Scotland	1.4	2.7	3.7	0.8	8.5
Wales	0.3	1.4	2.1	0.1	4.0
Total	16.0	20.8	45.6	15.7	98.1

Source: International Passenger Survey (IPS) for the inbound tourists' expenditure, UK Tourism Survey (UKTS) for the overnight domestic tourists' expenditure, and the Day Visit Surveys (GBDVSIELVS) for the expenditure of leisure domestic day visitors and authors' calculation for the domestic expenditure of outbound visitors.

However, tourism is clearly important in other regions and nations, in Wales and the South West, for example, there will clearly be much investment in the tourism 'product'

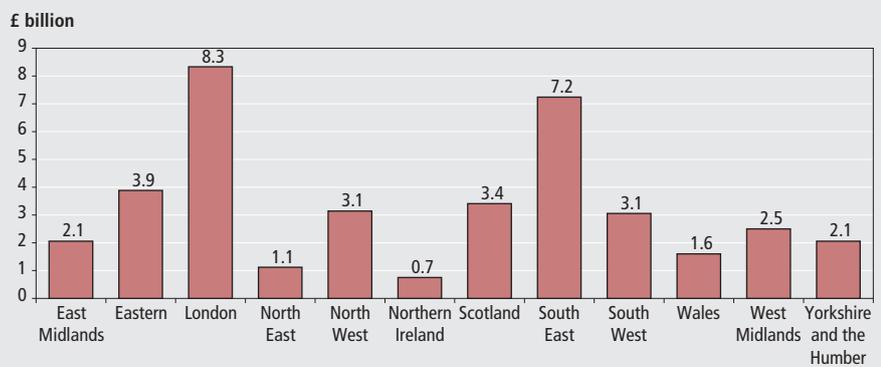
and as a result the TDGVA and tourism consumption figures are high in relation to their general economic performance and population.

Figure 5

Demand to Supply Ratio (Tourism Direct GVA as a percentage of total GVA in each region or nation) for the year 2006

Source: Authors' calculations

Figure 6

Tourism Direct GVA expressed in billion pounds for the year 2006

Source: Authors' calculations

TDGVA incorporates taxes less subsidies on production, compensation of employees, and gross operating surplus and mixed income. The demand figure will also include total intermediate and final consumption at purchasers' prices.

The results presented in this paper represent an important step towards the construction of regional figures for the tourism sector. These results are destined to be improved in accuracy in the near future, mainly due to two advancements in the measurement of the tourism demand. As already mentioned, the excursionists' expenditure data used in this study do not include business visits and a new GB day visits survey is currently under preparation which, it is hoped, will address this issue. IPS data for inbound tourism expenditure does not include the money spent on travel tickets paid to UK companies (mainly airlines). The TIU are currently exploring the use of UK Civil Aviation Authority data to correct the IPS headline figures for inbound tourism expenditure as reported in the E-UKTSA. This would, in turn, increase the regional figures.

Further improvements could be induced

by improvements to the supply side, this time due to the breakdown of figures for air transport into freight and passenger. The Supply and Use tables report only the aggregate of air transport without distinguishing between the two subclasses. Obviously for tourism purposes it would be better to report only the passenger supply figures. Preliminary research carried on for the realization of this improvement has shown that passenger transport accounts for more than 90 per cent of the overall figure reported in the national accounts. Hence, the improvement will not induce major changes in the results shown in the current paper.

An area for further research is to assess the extent to which tourism represents an engine for economic growth and development across and within regions. One of the main questions that requires an answer is whether tourism should be considered as a relief to poverty or a restraint to growth for those regions where its overall impact on the economy is relatively high. Other important questions on the agenda include: what are the potential environmental impacts of the tourism sector? And, does tourism promote the acquisition of new technologies locally?

All these issues are out of the scope of this paper, but will benefit from these results, which can be used as an important starting point.

Notes

- 1 The Tourism Intelligence Unit was established in ONS in August 2008. The commitment to work on the production of regional figures for the tourism sector has been triggered by the Regional Development Agencies (RDAs) through their funding of the English Tourism Intelligence Partnership, which was instrumental in the setting up of the TIU.
- 2 United Nations World Tourism Organisation, Statistical Office of the European Communities, Organisation for Economic Co-operation and Development (2008), Tourism Satellite Account: Recommended Methodological Framework (TSA:RMF 2008), New York, Luxembourg, Paris, Madrid
- 3 The E-UKTSA has reference date 2006. ONS/TIU has already started considering improvements to the current experimental version to move towards a true publication for a UKTSA 2007. This will automatically imply an update of the regional figures.
- 4 The VAT threshold changes periodically. The one considered in this article refers to the period 1 April 2006 to 31 March 2007.
- 5 According to ONS' internal sources the IDBR covers 99 per cent of the economic activity of the UK. Furthermore, part of the information missed due to the VAT threshold is regained through the Pay As You Earn (PAYE) scheme, which is also used to construct the IDBR.
- 6 It is worthwhile stressing that while at the regional level we are able to have a headline reconciliation of demand and supply (as is done at the national level with the TSA), we cannot consider the result of the present methodology to be the production of regional TSAs. The most important reason for this is the lack of a consistent set of supply and use tables produced on a regional basis.
- 7 This figure could appear relatively low, but it is worthwhile mentioning that it more than doubles the agriculture contribution. The figure has been derived through the construction of a UK TSA, which is now moving towards publication.

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ARTICLE

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Regional economic indicators

with a focus on gross disposable household income

SUMMARY

This quarter, the Regional Economic Indicators article focuses on Gross Disposable Household Income (GDHI) which is a key measure of economic welfare and of the prosperity of residents living in a region. This article analyses the dispersion in GDHI per head between UK regions and sub-regions between 1995 and 2008. The regular part of the article then gives an overview of the economic activity of UK regions in terms of their Gross Value Added (GVA), GVA per head and labour productivity. This is followed by a presentation of headline indicators of regional welfare, other drivers of regional productivity and regional labour market statistics. The indicators cover the nine Government Office Regions of England and the devolved administrations of Northern Ireland, Scotland and Wales. These 12 areas comprise level 1 of the European Nomenclature of Units for Territorial Statistics (NUTS level 1) for the UK. The term 'region' is used to describe this level of geography for convenience in this article.

The last three editions of the Regional Economic Indicators articles focussed on labour productivity, a workplace indicator, in order to assess overall regional economic performance. This article focuses on income, a residence-based indicator, which is a key measure of economic welfare and of the prosperity of residents living in a region.

To measure income as the key determinant of welfare in a region, Gross Disposable Household Income (GDHI) is the preferred measure. While it is the case that policymakers often use GVA per head as a measure of regional income (and welfare) of people living in a region, GDHI is preferable because as Dunnell (2009) has explained, GVA per head has several weaknesses as a measure. For example, GVA is an indicator of activity and does not take account of people commuting in and out of regions to work, or to other sources of income which are unrelated to current work, such as pensions and investment incomes.

Gross Disposable Household Income represents the amount of money left available within the household sector for spending or saving, 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. In order to make reliable comparisons across regions, GDHI per head of the resident population is used in this article as it takes account of relative sizes of regions.

This section presents and analyses the differences in GDHI per head between UK regions and sub-regions between 1995 and 2008 in the light of the recently published regional GDHI estimates up to 2008. It should be noted that the estimates of GDHI are at current basic prices and as such do not take inflation effects or regional price differentials into account.

Table 1 presents GDHI per head in each of the 12 NUTS 1 regions, as well as the average for the UK as a whole, between 1995 and 2008.

Table 1 shows London has the highest GDHI per head. The next highest GDHI per head is in the South East followed by the East of England, which together with London comprise the 'Greater South East'. The regions with the lowest GDHI per head in 2008 were the North East, Wales and Yorkshire and The Humber.

Over the 1995 to 2008 period, all regions had an average growth rate of GDHI per head below the UK average except for London, South East, Scotland and Northern Ireland. The higher growth rate in Northern Ireland enabled it to move from having the lowest GDHI per head in 1995 to the fourth lowest in 2008. Similarly, the higher than average growth rate in Scotland caused its GDHI per head to rise closer to the UK average over the same period. Incomes in London and the South East, meanwhile, diverged further ahead of the national average over the 1995-2008 period.

Disparities in average household income in NUTS 1 regions mask sub-regional

Table 1
Headline gross disposable household income per head at current basic prices: by NUTS1 region

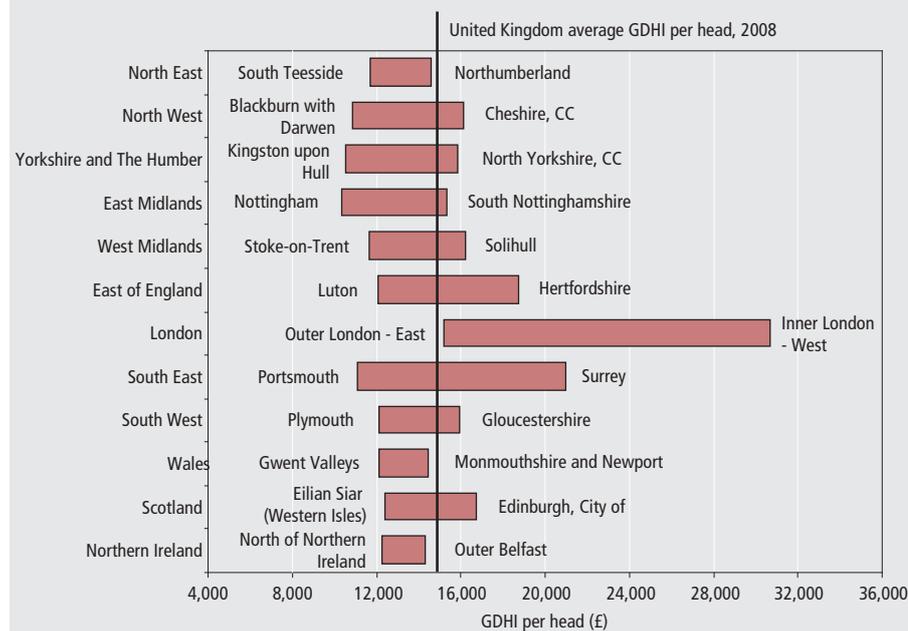
	United Kingdom ¹	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland
1995	8,665	7,557	7,989	7,952	8,071	8,010	9,247	10,457	9,671	8,702	7,754	8,267	7,549
1996	9,217	8,001	8,484	8,435	8,534	8,484	9,840	11,127	10,406	9,276	8,146	8,765	7,951
1997	9,816	8,451	9,013	8,974	9,069	8,991	10,477	11,947	11,208	9,832	8,551	9,272	8,345
1998	10,230	8,724	9,371	9,334	9,409	9,329	10,919	12,574	11,784	10,220	8,803	9,568	8,633
1999	10,613	9,014	9,706	9,655	9,678	9,674	11,340	13,129	12,245	10,589	9,098	9,867	8,971
2000	11,146	9,431	10,162	10,128	10,184	10,171	11,951	13,743	12,868	11,084	9,585	10,374	9,422
2001	11,827	9,969	10,743	10,680	10,848	10,758	12,764	14,542	13,674	11,776	10,212	10,996	9,988
2002	12,209	10,338	11,094	10,991	11,246	11,097	13,181	14,981	14,017	12,157	10,676	11,412	10,358
2003	12,759	10,811	11,569	11,484	11,805	11,589	13,733	15,696	14,588	12,699	11,141	11,987	10,947
2004	13,061	11,063	11,824	11,756	12,129	11,834	14,002	16,178	14,851	13,017	11,435	12,265	11,264
2005	13,555	11,473	12,247	12,166	12,590	12,229	14,414	16,911	15,354	13,508	11,914	12,796	11,862
2006	13,935	11,786	12,569	12,426	12,866	12,539	14,740	17,520	15,747	13,850	12,270	13,267	12,318
2007	14,315	12,039	12,874	12,718	13,178	12,845	15,057	18,223	16,155	14,156	12,561	13,659	12,788
2008 ²	14,872	12,543	13,386	13,115	13,611	13,337	15,509	19,038	16,792	14,680	13,073	14,301	13,260
Average annual percentage growth, 2000–2008 ²	4.2	4.0	4.1	3.9	4.1	4.0	4.1	4.7	4.3	4.1	4.1	4.3	4.4

Notes:

- 1 UK less Extra-regio.
- 2 Provisional.

Source: Office for National Statistics

Figure 1
GDHI per head: by distribution of NUTS3 areas within each NUTS1 region, 2008¹



Note:

- 1 Provisional.

Source: Office for National Statistics

variations. **Figure 1** shows the NUTS3 distribution of GDHI per head among the NUTS 1 regions in 2008 showing the spread between the sub-region with the highest and lowest GDHI per head for each NUTS 1 region.

Table 2 provides more detail on the respective GDHI per head totals for 2008 for each of the NUTS3 sub-regions in each NUTS1 region. Several observations can be made from the figure and the table:

- overall, GDHI per head in most NUTS3 sub-regions does not differ substantially from the national average. More than three quarters of the sub-regions (104 out of 133) fall within 1 standard deviation from the mean. GDHI per head in 71 of those are below the mean
- all regions except for North East, Wales and Northern Ireland have at least one NUTS3 sub-region where

GDHI per head averages above the UK mean. However, only three regions, London, South East and South West have more sub-regions with GDHI per head above the UK average than below

- there are just seven NUTS3 sub-regions where GDHI per head is greater than one standard deviation above the mean, and each is located in the 'Greater South East'. Furthermore, three of these sub-regions actually have GDHI per head two standard deviations above the national average
- there are 22 sub-regions where the region's average GDHI per head is more than one standard deviation below the mean. These areas are spread across all regions except London and Scotland. The West Midlands and the North West have the most sub-regions in this category. There are no sub-regions in the UK where the GDHI per head is less than two standard deviations away from the mean
- the highest levels of dispersion between sub-regions within a NUTS1 region are observed in London and the South East

Figure 2 shows the overall dispersion in household income for 133 NUTS3 regions in the UK from 1995 to 2008. Dispersion is measured as the coefficient of variation, which is the standard deviation across the NUTS 3 regions divided by the UK mean. An increase in dispersion means greater disparity in the spread of GDHI per head across the sub-regions and

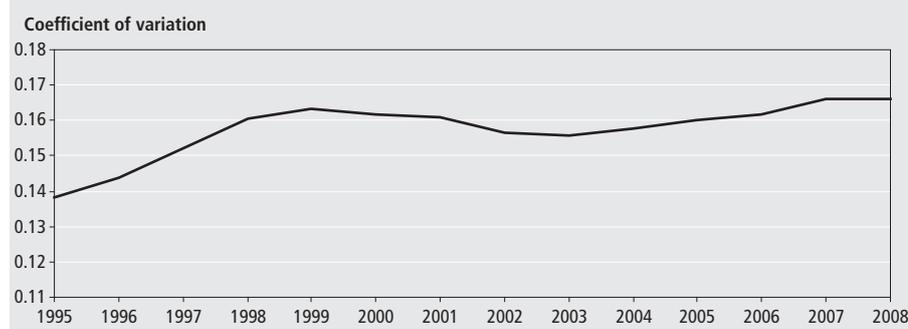
Table 2

Distribution of GDHI per head in NUTS 3 areas, by NUTS 1 region, 2008

	Number of regions					Total
	£9,954 – £12,413 between 1 and 2 standard deviations below the mean	£12,414 – £14,872 up to 1 standard deviation below the mean	£14,873 – £17,332 up to 1 standard deviation above the mean	£17,333 – £19,791 between 1 and 2 standard deviations above the mean	> £19,792 greater than 2 standard deviations above the mean	
North East	2	5	0	0	0	7
North West	4	7	2	0	0	13
Yorkshire and The Humber	2	7	1	0	0	10
East Midlands	2	6	2	0	0	10
West Midlands	5	3	4	0	0	12
East of England	1	5	3	1	0	10
London	0	0	2	2	1	5
South East	2	2	7	1	2	14
South West	1	4	7	0	0	12
Wales	2	10	0	0	0	12
Scotland	0	18	5	0	0	23
Northern Ireland	1	4	0	0	0	5
Total	22	71	33	4	3	133

Source: Office for National Statistics

Figure 2
Dispersion of GDHI per head across NUTS3 sub-regions



Source: Office for National Statistics

a decrease in the total means reduced disparity. The figure shows that dispersion increased slightly from 1995 to 2008 from around 0.14 to above 0.16. However, while the trend was slightly upwards, the absolute level of the coefficient of variation remained low, suggesting that cross-regional dispersion in GDHI per head is relatively low in the UK. This low coefficient of variation is to be expected given that GDHI per head does not differ significantly from the national average in the majority of sub-regions.

Figure 3 displays the GDHI per head in 1995 and the growth rate of GDHI per head between 1995 and 2008 in each NUTS3 area. Examining data this way gives some insight to the overall dispersion shown in Figure 2.

Figure 3 illustrates, in line with figure 2, that there has been a weak trend towards slightly increased disparity over the 1995 to 2008 period. This has been led by a number of sub-regions (such as Inner London-West, Surrey and Buckinghamshire CC) that had

relatively high incomes in 1995 achieving higher than average growth rates to 2008 while a number of sub-regions (such as Nottingham and Blackburn with Darwen) that had relatively low incomes in 1995 had lower than average growth rates over the period, producing a divergence in income inequalities between these two sets of sub-regions.

However, such a picture is far from universal. Many areas that had relatively low income per head in 1995 achieved above average annual growth rates to 2008, enabling some convergence in GDHI per head between these sub-regions and the UK average. This was particularly the case for sub-regions of Scotland and Northern Ireland such as West Lothian, Orkney Islands, North of Northern Ireland and West and South of Northern Ireland. This implies that while overall income dispersion across the UK sub-regions increased only slightly from 1995 to 2008, the relative ranking of some sub-regions changed considerably. Some sub-regions that had low levels of GDHI per head in

1995 caught up with the national average and others fell further behind.

It should be noted that in the above analysis the growth rates of GDHI per head are at current basic prices and as such do not take into effect any potential regional price differentials over the 1995 to 2008 period.

Factors contributing to regional disparities

So far, the analysis has provided a general overview of income distribution among UK regions. This section examines the components of household income to offer some insight into disparities that exist between and within regions.

GDHI per head is influenced by productivity and labour market outcomes. Additionally, household income depends on public policy such as taxation and on sources of income apart from work including social transfers. The components of GDHI reflect these outcomes and give an insight into the differences in GDHI per head between and within regions.

GDHI can be split into the following components, all of which can be expressed as per head of resident population to facilitate regional comparisons:

- Compensation of employees
- Operating surplus and mixed income
- Net property income
- Net current transfers

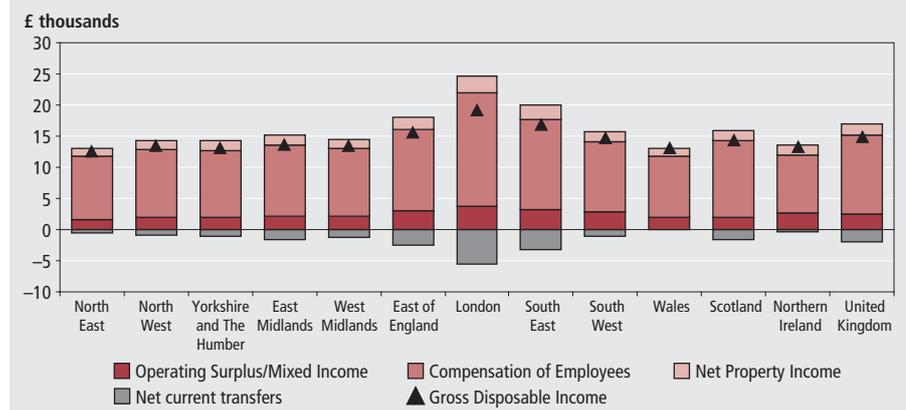
The first three of these components represent the 'balance of primary income'. Regional disparities in the 'earnings' components (compensation of employees and operating surplus and mixed income)

Figure 3
GDHI per head in 1995 and average annual growth rate of GDHI per head between 1995 and 2008



Source: Office for National Statistics

Figure 4
GDHI per head and components, by NUTS 1 region, 2008¹



Note:

1 Provisional.

Source: Office for National Statistics

of primary income are largely related to current economic activity and therefore usually reflect different productivity and labour market outcomes in regions. Net current transfers are equivalent to the ‘balance of secondary income per head’. In essence, this represents the redistribution of primary income.

Figure 4 presents a breakdown of NUTS1GDHI per head in 2008 into the shares of these 4 components.

Compensation of employees provides a measure of labour income which comprises wages and salaries plus employers’ social contributions, typically in the form of pension or health benefits. As shown in Figure 4, compensation of employees is by far the biggest source of income in every region, accounting for approximately three quarters of primary income. As such, it plays the major role in determining a region’s GDHI per head. Compensation of employees per

head is closely related to the productivity performance of regions with the highest levels occurring in the regions of the ‘Greater South East’.

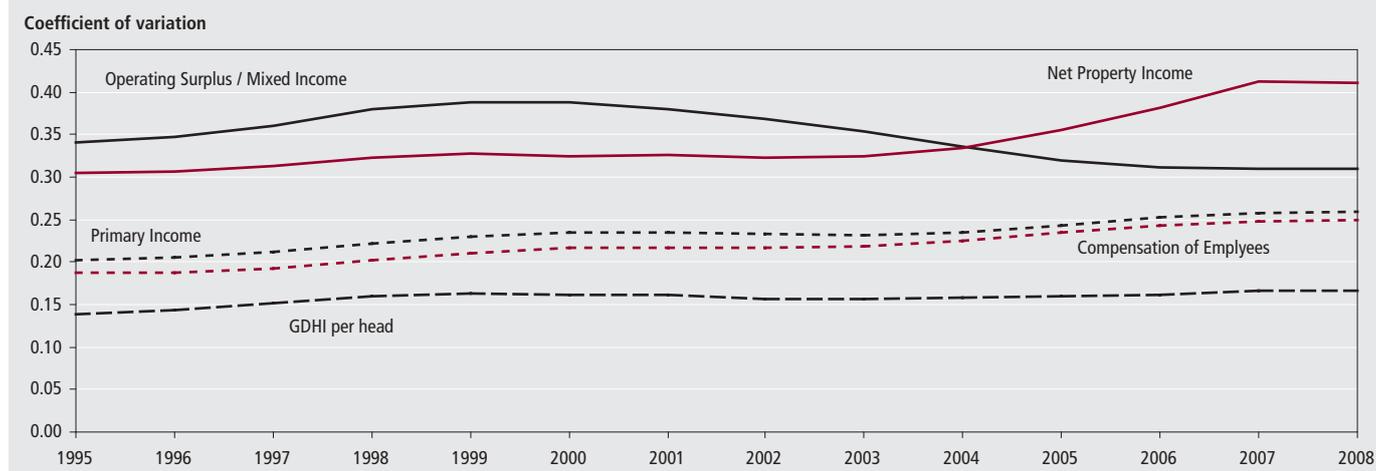
Operating surplus and mixed income combines income from operating surplus, which is a mixture of actual rental from housing and imputed rental of owner-occupiers, and from mixed income which represents the income of the self-employed. Operating surplus and mixed income are also somewhat correlated with the economic performance of a region with regions with higher productivity tending to have higher income per head in this category. However, the dispersion between regions is higher for operating surplus and mixed income than it is for productivity or for compensation of employees. This is because the South East, South West and East of England regions each receive a higher share of total UK operating surplus and mixed incomes than they do of

compensation of employees. The opposite is true for all other regions. Differences in property markets would appear the most probable explanation of this.

Net property income is equal to property income received (in the form of interest, rent on land, dividends or other income distributed from companies) less interest and rent on land paid out. Similar to the other components of primary income, net property income per head tends to be positively correlated with economic performance but as with operating surplus and mixed income, the dispersion amongst regions in terms of net property income is greater than that for productivity or compensation of employees. The South East and East of England, in particular, have relatively high levels of net property income while the North East has a low level relative to its productivity performance.

Net current transfers, equivalent to the “balance of secondary income per head”, consists of social benefits less social contributions (such as National Insurance and pensions) and other current transfers less taxes on income and wealth. In essence, this represents the redistribution of “primary income”, which is the sum of the three components above. Due to its construction, this term will be routinely negative (it captures virtually all of the contributions to public services by accounting for current taxes, but not all of the benefits received as it does not include the value of services such as health and education provision), but its magnitude is of particular interest in analysing the extent of the redistribution of income across regions.

Figure 5
Dispersion of primary income



Source: Office for National Statistics

Given the progressive nature of the UK tax system, the magnitude of net current transfers from a region is highly correlated with its level of primary income. For example, almost a third of primary income in Inner London West was transferred outwards. In contrast, NUTS2 sub-regions of West Wales and the Valleys and Cornwall and the Isles of Scilly were net recipients of secondary income, which accords with these areas having the lowest levels of compensation of employees per head and relatively low net property income per head amongst UK sub-regions in 2008. Similarly, Merseyside and Devon had negligible outward transfers from their areas.

Regional dispersion of primary income

Figure 5 shows the NUTS3 dispersion of individual components of primary income together with the dispersion of GDHI (repeated from Figure 2) between 1995 and 2008.

The spread of GDHI per head across the sub-regions is much smaller than the spread of the individual primary income components. In other words, primary income is distributed across the regions in a less equitable manner than is GDHI. This confirms that the impact of secondary income on GDHI is to narrow inequalities by redistributing primary incomes amongst the regions.

Compensation of employees is the major source of primary income and Figure 5 shows widening dispersion of compensation of employees across the sub-regions over the 1995 to 2008 period. The disparities in operating surplus and mixed income and net property income components are higher

than the disparity in the compensation of employees component. In the case of operating surplus and mixed income this disparity has fallen since 1999 but for net property income it rose sharply between 2004 and 2008.

Overall, Figure 5 shows that the disparity of total primary incomes between the regions has widened through the 1995 to 2008 period by a greater extent than GDHI. This shows that increased secondary income transfers have been necessary over this period to prevent a larger widening of the disparity of GDHI across the regions.

Regional overview

Key figures on a regional basis indicate that:

- in 2008 London was the region with the highest productivity, in terms of GVA per hour worked, at 33 percentage points above the UK average and diverged further from it while Northern Ireland had the lowest productivity, at 19 percentage points below the UK average.
- South East and East of England were the only other regions with a productivity performance above the UK average (4 and 0.7 percentage points respectively) in 2008.
- the total value of goods exports decreased in all the regions except in Scotland (up by 4.8 per cent) and North West (up by 0.3 per cent) between 2008 and 2009, but there were significant differences among regions. West Midlands had the largest percentage decline in the value of goods exports (down by 19.3 per cent).

- the South East of England had the highest employment rate in the third quarter of 2009, at 77.0 per cent; Northern Ireland had the lowest rate, at 67.3 per cent. The average employment rate in the UK was 72.4 per cent.

Headline indicators

In order to gain an overview of the economic performance of UK regions, this article discusses a selection of economic indicators. Currently, the most widely used indicator of regional economic performance is Gross Value Added (GVA) per head. Policymakers frequently use GVA per head as a headline indicator of regional productivity and of regional incomes when comparing and benchmarking regions that differ in geographical size, economic output and population. However, as Dunnell (2009) has explained, productivity and income are very different concepts.

GVA per head is calculated as the simple ratio of the economic activity in a region divided by the number of people living in a region, while productivity is defined as the ratio of GVA divided by the labour input (jobs or hours worked) used to create it. GVA per head does not take account of:

- people commuting in and out of regions to work
- regional differences in the percentages of residents who are not directly contributing to GVA, such as young people or pensioners, and
- different labour market structures across regions, such as full- and part-time working arrangements

Therefore, GVA per hour worked or

GVA per filled job are more appropriate productivity indicators. It needs to be noted that these indicators also depend on pricing thus productivity can fall/rise with decreasing/increasing prices. As regional price deflators do not yet exist, GVA estimates used in productivity figures are in nominal, not real terms, therefore it is not possible to isolate volume changes from price changes.

Similarly, Gross Disposable Household Income (GDHI) per head is a better measure of regional incomes than GVA per head. For example, due to commuting, residents might derive their incomes from economic activity in another region, which is not captured by GVA per head of their region. They may also have sources of income which are unrelated to current work, such as pensions and investment incomes. GDHI, therefore, is one of the determinants of the welfare of the people in the region.

Regional performance

GVA is a good measure of the economic output of a region. In December 2009, ONS published GVA estimates for 2008 and revised estimates for previous years. **Table 3** shows the regional economic performance in terms of workplace-based GVA and GVA per head and their respective average annual growth over the period 1998 to 2008. Although GVA per head is not a good indicator of regional productivity or income, it does take account of variations in geographical size among UK regions and therefore allows better comparisons than using GVA in total.

The estimates show that London had the highest GVA (£266.8 billion) and GVA per head (£35,000) in 2008, followed by the South East (£182.1 billion and £21,700, respectively). London's GVA per head was 71 per cent above the average for the UK, while that of South East was 6 per

cent above the average. The North West generated the third highest GVA (£119 billion), but was eighth in terms of its GVA per head (£17,300). Northern Ireland had the lowest GVA in 2008, while Wales had lowest GVA per head (26 per cent below the UK average).

In terms of average annual percentage growth of nominal GVA between 1998 and 2008, London, East of England, South West, South East and Northern Ireland had the highest GVA growth. Average annual percentage growth of GVA in these regions was equal to or above the UK growth. The lowest growth occurred in West Midlands and North West. Average annual percentage growth of GVA per head between 1998 and 2008 was higher than the UK average in London, Scotland, South East, South West and Northern Ireland, while West Midlands and Yorkshire and The Humber grew slowest over the same period.

Table 3

Workplace-based gross value added and gross value added per head at current basic prices: by NUTS1 region

	UK ¹	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland
GVA (£ million)													
1998	769,500	26,600	78,500	58,000	49,900	63,200	66,700	146,800	109,200	58,900	29,700	64,600	17,400
2008 ²	1,259,600	40,700	119,000	88,500	80,100	94,700	111,700	266,800	182,100	98,500	45,400	103,400	28,700
Average annual percentage growth 1998–2008 ²	5.1	4.3	4.2	4.3	4.8	4.1	5.3	6.2	5.2	5.3	4.3	4.8	5.1
GVA per head (£)													
1998	13,200	10,400	11,600	11,700	12,100	12,000	12,600	20,800	13,800	12,100	10,200	12,700	10,400
2008 ²	20,500	15,800	17,300	17,000	18,100	17,500	19,500	35,000	21,700	18,900	15,200	20,000	16,200
Average annual percentage growth 1998–2008 ²	4.5	4.3	4.1	3.8	4.1	3.8	4.5	5.3	4.6	4.6	4.1	4.6	4.5

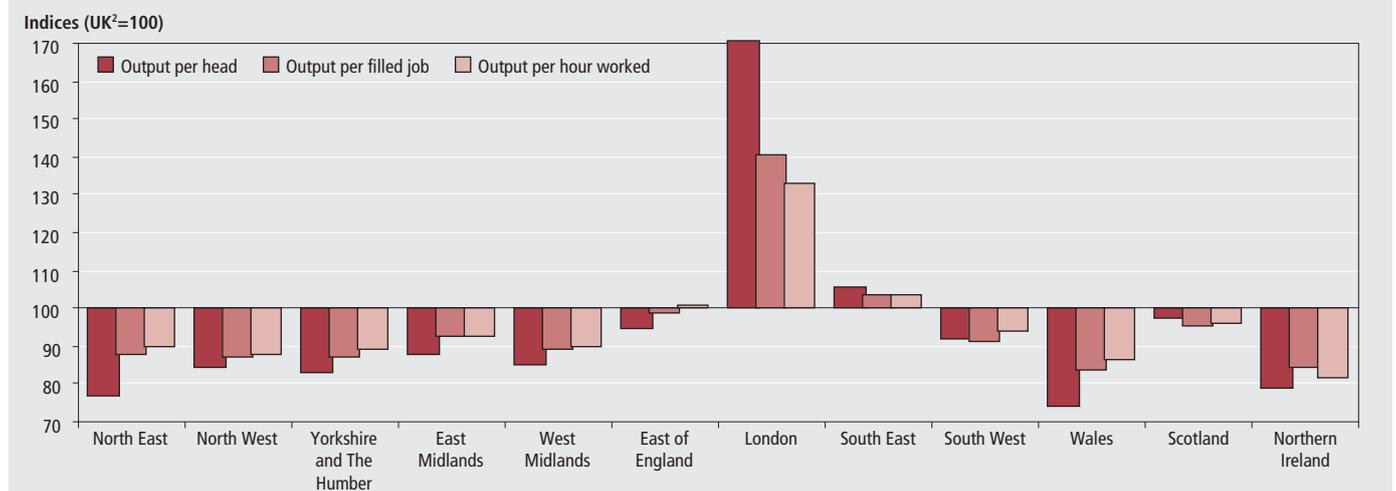
Notes:

- 1 UK less Extra-regio and statistical discrepancy.
- 2 Provisional.

Source: Regional Accounts, Office for National Statistics

Figure 6

Comparison of regional economic indicators: by NUTS1 region, 2008¹



Notes:

- 1 Provisional.
- 2 UK less Extra-regio statistical discrepancy.

Source: Office for National Statistics

Labour productivity

To compare regions in terms of productivity, GVA per hour worked is the preferred indicator. At lower levels of geography, 'hours worked' estimates are not yet available and GVA per filled job should be used. These two measures of productivity divide GVA by the labour input, namely hours worked in all jobs or the number of jobs used to create it.

GVA per hour worked and GVA per filled job take account of commuting effects and different age profiles, and the former also accounts for variations in labour market structures, such as full- and part-time working arrangements and job share availability.

Productivity estimates for 2008 and revised estimates for previous years were published in February 2010. These estimates make use of the GVA figures presented in Table 3, and updated 'filled jobs' and 'hours worked' estimates.

It should be noted that the productivity figures presented here use unsmoothed GVA as their output measure as opposed to headline GVA, which is calculated as a five-year moving average. The unsmoothed measure is used to ensure consistency with the labour input data (Dey-Chowdhury et al 2008), but raises some concerns about increased volatility of productivity estimates compared to those based on headline GVA. The question of whether to smooth productivity figures after dividing unsmoothed GVA by labour data, and presenting these as headline estimates, is one which will be addressed by ONS in the coming months.

Figure 6 shows that in 2008 GVA per

filled job and GVA per hour worked exhibited smaller differences from the UK average than the catch-all indicator GVA per head. This is mainly due to commuting patterns. London, for example, has a very high GVA per head, mainly due to incoming workers generating a high GVA, which is then divided by a much lower resident population. Productivity indicators, on the other hand, divide regional GVA by the jobs or hours worked used to create it.

Figure 7 shows the regional GVA per hour worked productivity index on a time series basis from 2000 to 2008. In 2008, London, the South East and the East of England were the only three regions with a productivity performance above the UK average. The East of England saw the strongest improvement in its relative performance from below the UK average in 2000 to above average in 2008. London continued to improve its relative performance, therefore diverging further from the UK average. Relative productivity in the South East weakened slightly in 2008, but it remained above the UK average over the period. Northern Ireland and Wales had the lowest relative productivity compared to the UK average in 2008. Relative productivity in most regions diverged from the UK average between 2000 and 2008. The strongest divergence below the UK average productivity over this period was experienced in the North West, Wales and Northern Ireland. This indicates that these regions' productivity grew by less than the UK average, therefore widening the productivity gap between regions.

The focus section has investigated GDHI and the contribution of its components in detail. Figure 8 presents indices of GDHI per head for 1996, 2000, 2004 and 2008, showing movements in regional household income relative to the UK average over time. It is evident that the GDHI per head is above the UK average only in the regions of the 'Greater South East'. Of these regions, London has consistently had the highest GDHI per head since 1996 and is diverging from the national average. The South East and East of England, on the other hand, are getting closer to the national average as they experienced relatively lower growth in household income compared to the national average between 2000 and 2008. Most of the regions with relatively lower household income diverged further from the national average while improvements against national average are evident in the devolved administrations between 2000 and 2008.

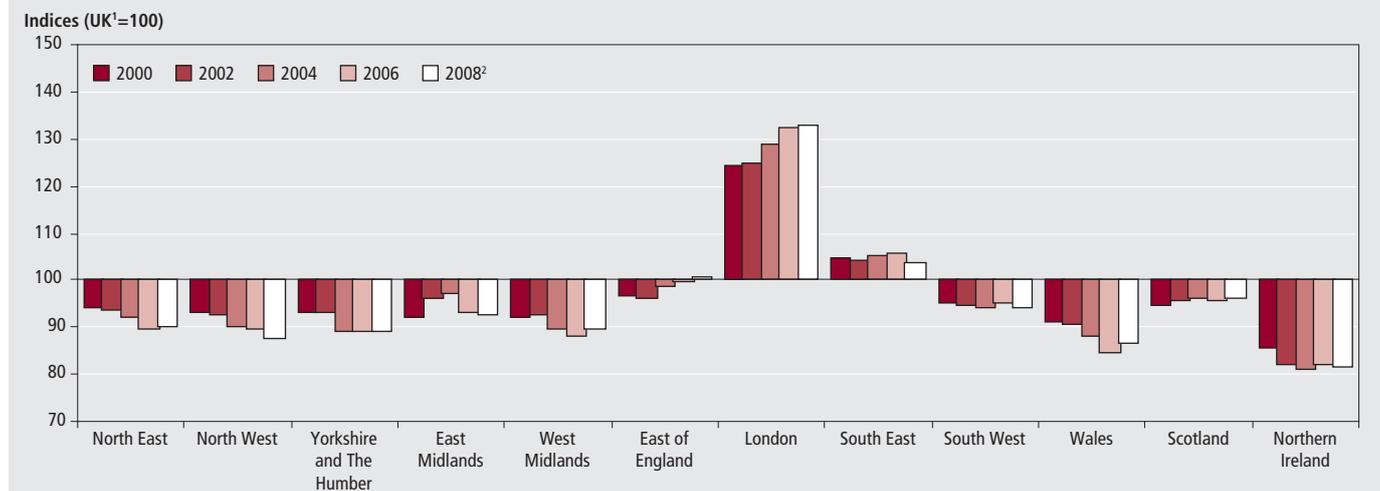
Gross median weekly earnings represent another indicator of regional welfare.

Figure 9 shows the gross median weekly pay for all full-time employees, split into female and male full-time employees, living in each region in April 2009.

As in previous years, London was the region with the highest gross median weekly pay, at £598.60, followed by the South East, at £536.60 and the East of England, at £509.40. These were the only regions above the UK average of £488.70. North East (£438.80), Northern Ireland (£440.80), and Wales (£449.90) recorded the lowest earnings in April 2009.

Females across the UK regions received

Figure 7
GVA per hour worked: by NUTS1 region

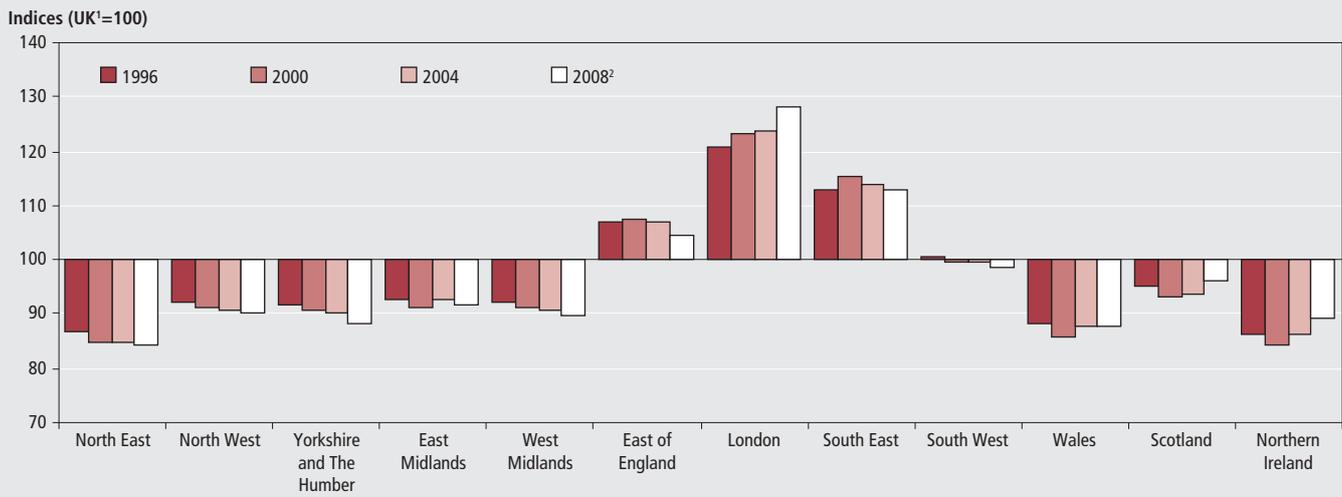


Notes:

- 1 UK less Extra-regio and statistical discrepancy.
- 2 Provisional.

Source: Office for National Statistics

Figure 8
Headline gross disposable household income per head: by NUTS1 region

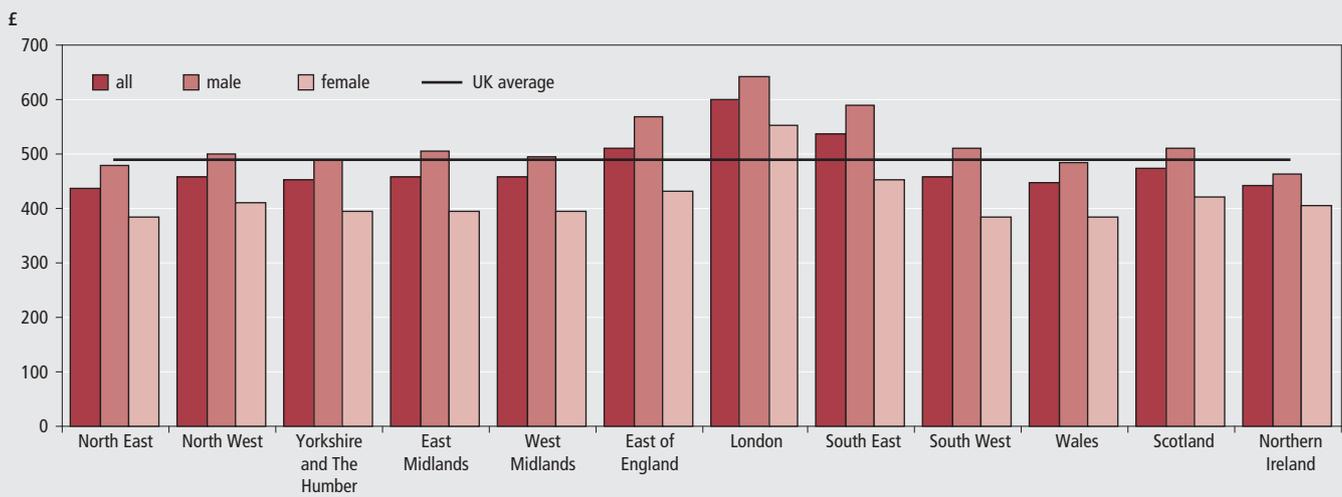


Notes:

- 1 UK less Extra-regio.
- 2 Provisional.

Source: Office for National Statistics

Figure 9
Gross median weekly pay of all full-time employees:¹ by NUTS1 region, April 2009



Note:

- 1 Residents of the respective region.

Source: Annual Survey of Hours and Earnings, Office for National Statistics

lower pay than males. In Northern Ireland, the discrepancy was smallest, while it was largest in the South East and East of England. In terms of annual average percentage growth over the four years to 2009, pay for females outperformed that for males except in the South West. The highest annual average growth rate for male pay was observed in the North East while Scotland had the highest annual average growth rate for male pay between 2005 and 2009.

Drivers of productivity

HM Treasury and Department for Business, Innovation and Skills (BIS) formerly known as Department for Business Enterprise and Regulatory

Reform (BERR) have identified five key drivers of productivity – investment, innovation, enterprise, competition and skills – that can help explain differences in productivity across regions.

Alongside these five key drivers, other factors, such as connectivity, industrial structure and region-specific assets can have a strong influence on regional productivity performance.

This article uses expenditure on Research and Development (R&D) by businesses as a measure of innovation; the numbers of business births and deaths and survival rates as an indicator for enterprise; UK regional trade in goods serves as a measure of competition; and the qualifications of the current working-

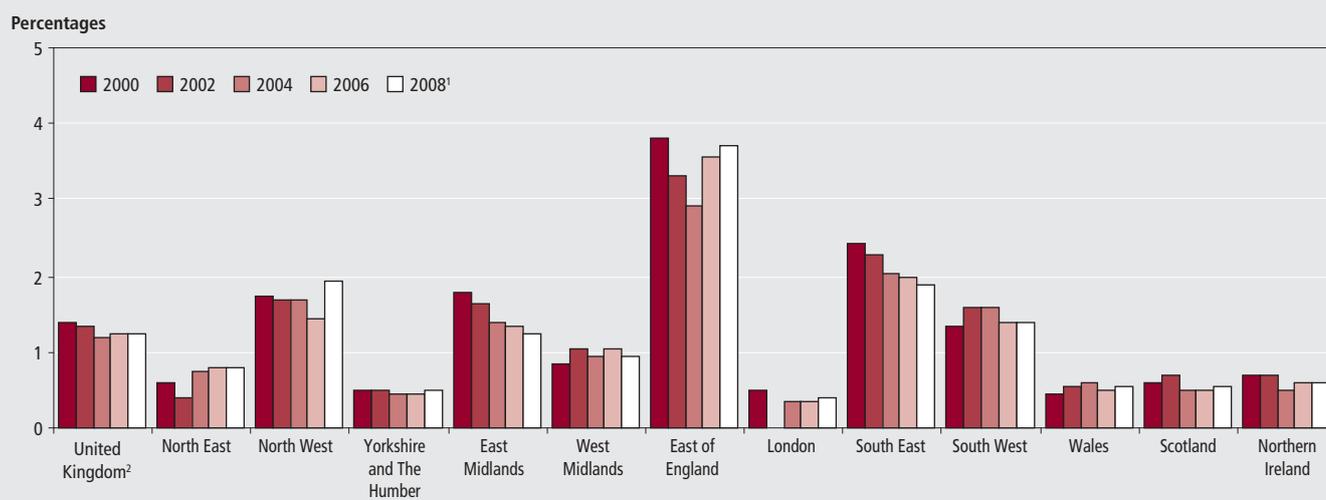
age population and those of young people, who represent the future workforce, to provide an indicator for the skills driver.

Innovation

Innovation is a necessary, although not sufficient, condition for economic success and is therefore recognised as an important driver of productivity. Innovation comprises, among others, the development of new technologies that increase efficiency and the introduction of new, more valuable goods and services. It also includes intangibles such as new methods of working and improvements to services.

R&D represents one of the determinants to the innovation process and is defined

Figure 10
Business expenditure on R&D as a percentage of workplace-based GVA: by NUTS1 region



Notes: Source: *Regional Accounts and Business Enterprise Research & Development, Office for National Statistics*

- 1 Provisional.
- 2 UK less Extra-region and statistical discrepancy.

Figure 11
Business expenditure on R&D by NUTS1 region: broad industry groups, 2008



Note: Source: *Business Enterprise Research & Development, Office for National Statistics*

- 1 Other includes agriculture, hunting and forestry, fishing, extractive industries, electricity, gas and water supply and construction. The expenditure on other industries across the UK was less than 2 per cent of the total expenditure.

by the Organisation for Economic Co-operation and Development (OECD) in its Frascati Manual, which proposes a standard practice for surveys on R&D, as ‘creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to create new applications’. The OECD definition of R&D covers the following:

- basic research: experimental and theoretical work to obtain new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view
- applied research: work undertaken

to acquire new knowledge, which is directed primarily towards a specific practical aim, and

- experimental development: systematic work, drawing on existing knowledge, which is directed at producing new materials, products or devices, installing new processes, systems and services, or at improving substantially those already produced or installed

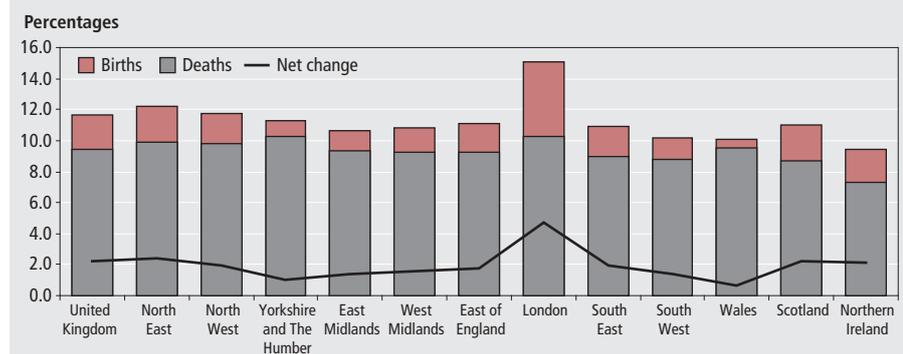
The OECD definition excludes education, training and any other related scientific, technological, industrial, administrative or supporting activities. However, innovation depends on a wider set of inputs than R&D, including skills training, design, software and organisational investment by firms. HM Treasury Economics Working Paper

No. 1 quantifies these broader knowledge economy inputs at UK level; more work is needed before these factors can be measured effectively at regional level.

Figure 10 presents statistics on Business Enterprise Research and Development (BERD), which are consistent with internationally agreed standards. Figures for 2008 published on 11 December 2009 show business expenditure on R&D as a percentage of workplace-based GVA in 2000, 2002, 2004, 2006 and 2008. This is a measure commonly used in regional comparisons as it takes account of the size of regional economies. The figure shows that, since 2000, the East of England has been the region with by far the highest percentage of R&D expenditure in terms of GVA, with 3.7 per cent in 2008. The North West and the South East regions had the second highest percentage (1.9 per cent) which has, however, been declining in the South East since 2000. These three regions together also accounted for 62 per cent of the total expenditure on R&D in 2008.

London had the lowest R&D expenditure as a share of its regional GVA in 2008 (0.4 per cent). Yorkshire and the Humber, Wales and Scotland had the second lowest shares in the UK in 2008, at 0.5 per cent each. London’s very low share of expenditure on R&D does not necessarily suggest low levels of innovation but may be due to it having a large concentration of service industries, which may be less R&D intensive (within the OECD definition) if, for example, they rely heavily on human capital. It may also reflect the choice businesses make over locating their R&D activities.

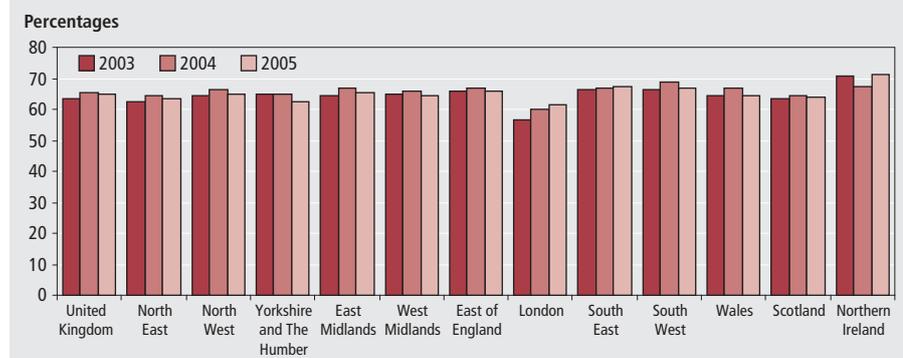
Figure 12
Enterprise births, deaths¹ and net change as a percentage of enterprise stock: by NUTS1 region, 2008

**Note:**

1 Provisional.

Source: Business Demography, Office for National Statistics

Figure 13
Percentage of units surviving three years: by year of birth and NUTS1 region



Source: Business Demography, Office for National Statistics

Approximately three quarters of the R&D expenditure in the UK was made in the manufacturing sector in 2008.

Figure 11 shows that in most regions except in the Greater South East the share of the R&D expenditure on manufacturing was over 80 per cent of their respective expenditure. The figure also shows that East of England accounted for 26 per cent of the total R&D expenditure in the UK in 2008 and had the highest level of R&D expenditure on both manufacturing and services. This may suggest that some London R&D occurs in the surrounding regions such as Cambridge technology start-ups.

Enterprise

Enterprise is another driver of productivity. It is defined as the seizing of new business opportunities by both start-ups and existing firms. New enterprises can bring innovative processes and technologies to the market, forcing existing ones to improve their productivity in order to remain competitive. A relatively large proportion of enterprises joining and leaving the stock can be seen as desirable,

as new enterprises entering the market are considered to bring innovative processes and technologies that drive up productivity and force unproductive enterprises to leave the market.

The February 2009 edition of this article focused on business demography in UK regions, using the newly published ONS series of enterprise births and deaths, which includes enterprises registered for VAT and also those registered for pay-as-you-earn (PAYE). It needs to be noted that enterprise statistics relate to the place of registration of the enterprise, even though the enterprise may consist of more than one local unit, possibly in different regions.

Figure 12 shows the number of births and deaths of enterprises as a proportion of the active enterprise stock in 2008. The difference between the two represents the net change, which is calculated as a proportion of total stock. In 2008, across all regions, the net changes were positive due to higher proportions of enterprises joining the stock than leaving it. These proportions were largest in London (4.7 per cent), followed by the North East (2.4

per cent). The lowest rate of net change was in Wales (0.6 per cent).

These rates were mainly driven by small enterprises with fewer than 5 employees which is approximately 80 per cent of the total enterprise stock

As well as analysing births and deaths of enterprises, it is useful to look at how long these enterprises survive. The Business Demography series contains data showing the number of years survived by enterprises born in the years 2003 to 2005.

Figure 13 shows the proportion of enterprises born in 2003, 2004 and 2005 that survived for at least three years each. It shows that, overall in the UK, survival rates increased from 63.6 per cent of enterprises born in 2003 to 65.3 per cent of those born in 2004 and went back down slightly to 64.7 per cent of those born in 2005.

Patterns were similar across regions. In most regions enterprises born in 2004 had the highest three year survival rates compared to 2003 and 2005. Northern Ireland had the highest three year survival rates which were above the UK average for the enterprises born in all three years while London stands out as the region with the lowest rates. Figure 12 has shown that London had the highest percentage of births and deaths of enterprises and that survival rates were relatively low.

They could be an indication of London's ability to exploit short-term business opportunities. At the same time, it may suggest that many of the new enterprises born will not provide long-term growth and employment.

Competition

Vigorous competition enhances productivity by creating incentives to innovate and ensure that resources are allocated to the most efficient firms. It also forces existing firms to organise work more effectively through imitations of organisational structures and technology. One indicator of competition is the volume of exports. Even though exports do not represent competition within a region, they still provide an indication of how international regions are in their outlook, and how able they are to face global competition.

HM Revenue & Customs (HMRC) publishes statistics on regional trade in goods to the EU and non-EU destinations by statistical value. Trade in goods by definition excludes trade in intangibles and services. The statistical value of export trade is calculated as the value of the goods

Table 4
UK regional trade in goods – statistical value of exports:¹ by NUTS1 region

	£ million												
	United Kingdom	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland
EU Exports													
2008 Q1	34,980	1,634	3,182	1,744	2,196	2,405	3,314	2,304	4,937	1,817	1,485	1,493	880
2008 Q2	37,251	1,629	3,365	1,885	2,119	2,506	3,595	2,438	5,354	1,937	1,631	1,492	971
2008 Q3	35,742	1,619	3,283	1,913	2,013	2,137	3,222	2,850	5,096	1,707	1,647	1,536	874
2008 Q4	32,677	1,442	2,859	1,826	1,904	1,993	2,895	2,377	5,156	1,562	1,329	1,519	840
2008 Total	140,651	6,324	12,690	7,369	8,232	9,041	13,026	9,969	20,543	7,023	6,092	6,040	3,564
2009 Q1 ²	31,131	1,334	3,097	1,614	1,852	1,799	2,822	2,435	4,909	1,666	1,187	1,330	787
2009 Q2 ²	29,345	1,311	2,958	1,466	1,783	1,701	2,898	2,393	4,366	1,565	1,178	1,230	759
2009 Q3 ²	30,183	1,352	2,895	1,474	1,699	1,636	2,944	2,727	4,560	1,436	1,164	1,335	715
2009 Q4 ²	32,231	1,485	2,910	1,742	1,815	1,877	3,498	2,489	4,871	1,472	1,254	1,428	759
2009 Total	122,890	5,481	11,860	6,296	7,149	7,013	12,162	10,044	18,706	6,139	4,783	5,322	3,020
Non-EU exports													
2008 Q1	23,867	1,164	2,452	1,641	1,743	1,767	2,167	3,195	3,892	1,053	869	1,833	555
2008 Q2	27,803	1,335	2,862	1,712	1,941	1,989	2,509	3,660	4,993	1,178	1,074	2,066	639
2008 Q3	28,265	1,357	2,936	1,707	1,914	2,142	2,267	3,577	5,173	1,373	1,312	2,103	623
2008 Q4	28,181	1,112	2,807	1,522	2,089	1,900	2,252	3,749	5,430	1,306	1,298	2,224	806
2008 Total	108,116	4,969	11,056	6,582	7,686	7,798	9,195	14,181	19,488	4,910	4,553	8,226	2,622
2009 Q1 ²	22,909	977	2,766	1,260	1,958	1,209	1,893	2,711	4,090	1,149	1,074	1,978	510
2009 Q2 ²	24,812	881	2,540	1,263	1,995	1,504	2,001	2,934	4,722	1,164	1,241	2,337	606
2009 Q3 ²	25,050	1,014	3,383	1,365	1,751	1,588	1,954	2,883	4,654	1,078	933	2,502	454
2009 Q4 ²	28,654	1,273	3,271	1,511	1,787	2,268	2,328	3,172	5,910	1,122	968	2,816	525
2009 Total	101,425	4,145	11,960	5,399	7,490	6,569	8,177	11,699	19,377	4,514	4,216	9,632	2,095
Total Exports													
2008 Q1	58,847	2,798	5,634	3,385	3,939	4,171	5,480	5,499	8,829	2,869	2,354	3,327	1,435
2008 Q2	65,054	2,964	6,227	3,596	4,060	4,495	6,104	6,098	10,347	3,114	2,705	3,558	1,609
2008 Q3	64,008	2,976	6,219	3,620	3,927	4,279	5,490	6,426	10,269	3,080	2,959	3,639	1,498
2008 Q4	60,858	2,555	5,666	3,349	3,993	3,893	5,147	6,126	10,586	2,868	2,627	3,742	1,645
2008 Total	248,767	11,293	23,746	13,950	15,919	16,839	22,221	24,149	40,031	11,932	10,645	14,266	6,187
2009 Q1 ²	54,040	2,311	5,862	2,873	3,810	3,008	4,715	5,145	8,999	2,815	2,261	3,307	1,298
2009 Q2 ²	54,157	2,191	5,498	2,729	3,778	3,205	4,899	5,327	9,088	2,729	2,419	3,566	1,364
2009 Q3 ²	55,233	2,366	6,278	2,840	3,450	3,224	4,899	5,610	9,214	2,514	2,097	3,837	1,169
2009 Q4 ²	60,886	2,758	6,182	3,253	3,601	4,144	5,826	5,661	10,781	2,595	2,222	4,244	1,284
2009 Total	224,316	9,625	23,820	11,694	14,639	13,582	20,339	21,742	38,082	10,653	8,999	14,954	5,115

Notes:

- 1 Components may not sum to totals as Regional Trade Statistics includes estimates made for EU trade below the Intrastat threshold which are included in the 'unknown' region and not displayed in this table.
2 Provisional.

Source: Office for National Statistics

plus the cost of movement to the country's border.

Table 4 presents the latest quarterly estimates up to the end of 2009. The total value of UK goods exports to all destinations decreased by 10 per cent between 2008 and 2009. The total value of goods exports also decreased in all the regions except in Scotland and North West, but there were significant differences among regions. West Midlands had the largest percentage decline in the value of goods exports (down by 19.3 per cent), followed by Northern Ireland (down by 17.3 per cent) and Yorkshire and the Humber (down by 16.2 per cent).

As the European Union (EU) is the main export destination for UK goods, the table separates exports to EU and non-EU destinations. In the UK as a whole, the

value of exports to the EU dropped by 12.6 per cent between 2008 and 2009. With the exception of London (up by 0.7 per cent), all the regions recorded decreases in the value of goods exports to the EU. West Midlands reported the highest drop, by 22.4 per cent.

The total value of the UK exports to the rest of the world declined by 6.2 per cent from 2008 to 2009, with the highest drop occurring in Northern Ireland (down by 20.1 per cent). Scotland and North West were the only two regions that had an increase in the value of their goods exports to the rest of the world, up by 17.1 and 8.2 per cent respectively.

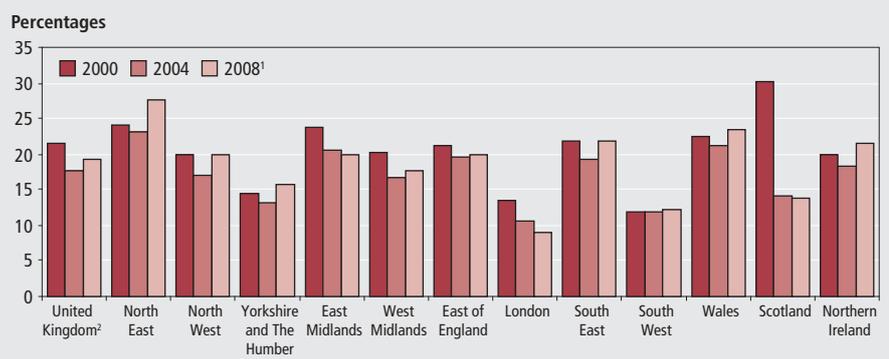
The figures also show that better economic prospects in key markets and a weaker currency is slowly starting to give exports a boost as the downward trend

in the value of total goods exports which began in the third quarter of 2008 was reversed in the second quarter of 2009.

The number of exporters in the UK for the December 2009 quarter compared with the same quarter last year, decreased by 3.4 per cent to 49,756. The East of England region had the largest decrease of 5.1 per cent to 5,393¹. There were no regions where the number of exporters increased.

Figure 14 shows the value of exports of goods as a percentage of workplace-based regional GVA in 2000, 2004 and 2008, which takes account of the differing sizes of regional economies. In 2008, the value of goods exports relative to the size of the regional economy was greatest in the North East and lowest in London. It needs to be noted that these figures show exports of goods as a percentage of

Figure 14
Value of total export goods as a percentage of workplace-based GVA: by NUTS1 region

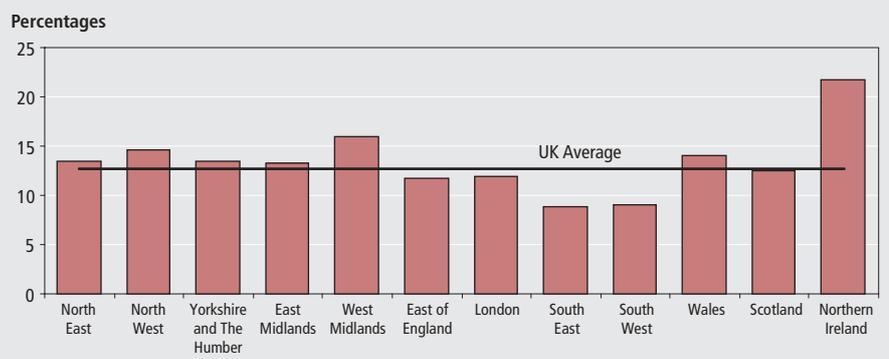


Notes: Source: HM Revenue & Customs, Regional Trade Statistics and Office for National Statistics

1 Provisional.

2 UK less Extra-regio and statistical discrepancy.

Figure 15
Working-age population with no qualifications:¹ by NUTS1 region, 2008



Note: Source: Labour Force Survey, Office for National Statistics

1 For summary of qualifications and equivalents see www.statistics.gov.uk/statbase/Product.asp?vlnk=836.

headline GVA which also includes services and therefore is likely to underestimate the export performance of some regions with a large share of services industries such as London.

In terms of this indicator's change over time, exports relative to GVA were lower in all the regions in 2004 than in 2000, with some recovery in 2008 except in East Midlands, London and Scotland. In Scotland, exports as a percentage of regional GVA dropped significantly between 2000 and 2004, but remained fairly stable over the four years to 2008. The North East had the largest increase in relative export performance, followed by Northern Ireland between 2004 and 2008.

Skills

The skills of workers influence productivity as they define the capabilities that the labour force can contribute to the production process. The concept of skills includes attributes of the workforce, such

as 'softer' or interpersonal skills, which are difficult to measure or to compare in different situations or over time. Therefore, qualifications are often used as proxy indicators. By examining the qualifications, such as degree or equivalent, of the current workforce as well as those of young people, who represent the future capabilities of the labour market, a view of how skills are changing over time and their potential impact on productivity can be analysed. However, as characteristics of local economies dictate which labour skills are required, comparability between regions might be difficult. An alternative approach is to compare the percentage of the working-age population that has no recognised qualifications.

Figure 15 shows the proportion of the working-age population that has no qualifications in each region, alongside the UK average, for 2008. Northern Ireland had the highest proportion of the population with no qualifications (9.1

percentage points above the UK average); whereas the South East and the South West had the lowest proportions, 3.8 and 3.7 percentage points below the UK average, respectively.

Above average proportions of working-age people without a qualification do not necessarily mean that regions have the most unqualified workforce. Due to differing regional skill requirements, people with recognised qualifications might migrate into other regions, where demand for their qualifications is high, while those without any recognised qualifications might migrate out of these other regions. Also, if employers have a strong demand for lower skills and a good supply of appropriate workers, a low skill equilibrium is created in a region.

Regional Skills Partnerships (RSPs) are groups brought together by Regional Development Agencies in each region of England in response to the National Skills Strategy. RSPs aim to strengthen regional structures to make skills provision more relevant to the needs of employers and individuals, covering private, public and voluntary sectors of the economy. They also aim to give regions the flexibility to tackle their own individual challenges and priorities.

Table 5 presents the RSP core indicators, which help to monitor the health of regional and local labour markets and progress towards national skills targets such as those documented in the Leitch Report. These core indicators will be supported by local, more specific, indicators identified by individual RSPs. The choice of '19 to state pension age' for some of the indicators in Table 3 has been influenced by: the increased emphasis on education and training after the age of 16; the plan to raise the standard school leaving age to 18; and alignment with indicators specified in the Local Area Agreements.

In order to assess the future capabilities of the labour force, the percentage of pupils achieving five or more grades A* to C at GCSE level or equivalent in each English region can be used as an indicator². Recent focus on literacy and numeracy has led to a new measure being published, of five or more GCSEs grade A* to C in subjects including English and Mathematics.

Figure 16 shows the percentage of pupils achieving at least five grades A* to C at GCSE level or equivalent in any subjects, and in subjects including English and Mathematics. In 2008/2009, the

Table 5
Regional Skills Partnerships core indicators: by NUTS1 region

Skills outcome indicators	Time period	Percentages									
		North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	England
Percentage of employers with business or training plan, or budget for training	2007	70.6	69.2	69.6	67.9	67.5	67.3	70.0	70.6	68.4	69.1
Percentage of staff with skill gaps	2007	6.3	5.3	4.8	6.8	5.4	7.8	6.7	5.8	6.2	6.1
Skill shortage vacancies (SSVI) as percentage of all vacancies	2007	18.8	17.6	20.1	20.2	15.5	19.6	26.1	22.5	20.9	20.9
Percentage of KS4 pupils achieving 5+ A* to C GCSE (inc Maths and English)	2007/08	44.9	47.4	44.4	47.0	46.1	50.3	50.6	51.7	49.2	47.6
Percentage of 19 year olds qualified to Level 2 or above ¹	2008	75.9	74.3	73.2	73.1	74.9	77.0	77.0	79.6	77.0	76.7
Percentage of 19 year olds qualified to Level 3 or above ¹	2008	43.7	46.1	44.4	46.0	46.9	52.4	51.9	56.9	51.0	49.8
Percentage of 19 to state pension age with Level 2+	2008	69.3	68.1	67.6	67.0	65.8	67.6	71.0	73.1	72.2	69.4
Percentage of 19 to state pension age with Level 3+	2008	46.9	47.1	47.1	46.3	45.2	46.5	55.0	53.7	51.7	49.5
Percentage of 19 to state pension age with Level 4+	2008	25.4	27.4	26.6	27.0	26.2	27.8	40.6	33.6	30.2	30.5
Percentage of 19 to state pension age with no qualifications	2008	13.2	14.4	12.9	12.8	15.6	11.5	11.6	8.5	8.4	11.9
Percentage of working-age population who undertook job-related training in last 13 weeks	2008	20.9	18.9	19.4	20.2	19.4	18.7	18.2	22.2	23.1	20.0
Percentage of 17 year olds in education or work-based learning	end-2007	78.0	77.0	74.0	74.0	78.0	77.0	86.0	77.0	77.0	78.0

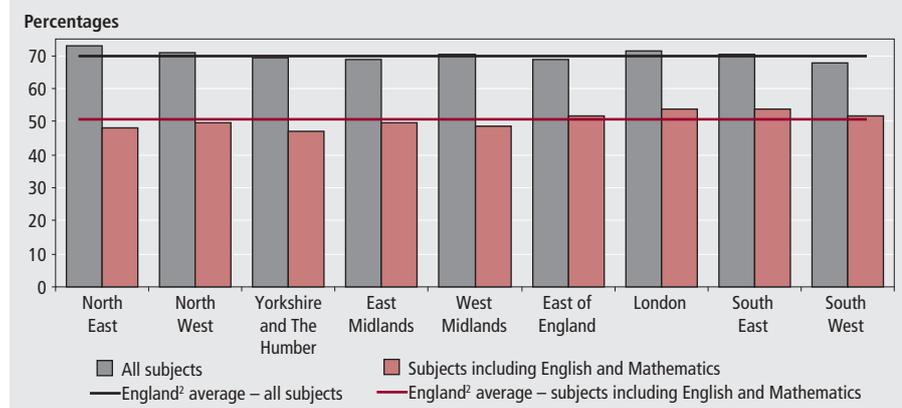
Note:

1 Provisional data from DCSF matched datasets.

Source: Office for National Statistics; Labour Force Survey; Department of Business Enterprise and Regulatory Reform; Department for Children, Schools and Families; Department for Innovation Universities and Skills; National Employers Skills Survey 2007.

Figure 16

Pupils achieving five or more grades A* to C at GCSE level or equivalent in (i) all subjects and (ii) subjects including English and Mathematics: by NUTS1 region, 2008/09¹

**Notes:**

- 1 Revised data, includes attempts and achievements by these pupils in previous academic years.
- 2 The England average includes all schools, not only local authority maintained schools.

Source: Department for Children, Schools and Families

England average for pupils in all schools achieving five or more grades A* to C in any subjects was 70.0 per cent, while it was down to 50.9 per cent if the subjects included English and Mathematics. These were increases of 4.7 and 3.3 percentage points from 2007/08, respectively. Across all English regions, the percentage of pupils achieving at least five grades A* to C in subjects including English and Mathematics was substantially lower compared with achieving the same in any

subjects. Also, regional differences were more pronounced when subjects included English and Mathematics.

In the North East the percentage of pupils achieving five or more grades A* to C in any subjects was 2.8 percentage points above the England average, but the percentage dropped 2.8 points below the average when the subjects included English and Mathematics. The opposite held for the South West and the East of England, where the proportion of pupils achieving

at least five grades A* to C increased above the England average if the subjects included English and Mathematics while it dropped below national average for achieving five or more grades A* to C in any subject. London and South East were the only two regions which performed above national average on both measures.

Investment in physical capital, such as machinery, equipment and buildings, enables workers to produce more and higher quality output. Therefore, investment can have a significant positive impact on productivity. Due to quality concerns regarding the regional allocations of investment, which is recorded at the level of the enterprise and not at the local level, this article does not currently include data on investment.

Nevertheless, as Dunnell (2009) has pointed out, inflows of foreign direct investment (FDI) projects and estimated numbers of associated jobs by region can serve as a narrow indicator of investment. However, FDI does not cover all investment in a region and there is no requirement to notify UK Trade & Investment when undertaking FDI.

The labour market

Table 6 shows the seasonally adjusted employment rate, the number of people of working age in employment, expressed as

Table 6
Employment¹ rates for persons of working age: by NUTS1 region

		Per cent, seasonally adjusted													
		United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Northern Ireland
2006	Oct-Dec	74.5	70.7	72.9	73.7	76.4	72.9	77.1	69.9	78.7	78.2	74.6	71.8	76.2	69.8
2007	Jan-Mar	74.3	70.9	72.4	72.9	76.0	72.5	77.4	70.0	78.2	78.0	74.3	71.6	76.6	70.7
	Apr-Jun	74.5	71.6	72.6	73.3	76.0	72.7	77.4	69.9	78.7	78.1	74.5	71.9	77.1	70.7
	Jul-Sep	74.6	72.0	72.4	73.2	75.7	73.1	77.3	70.8	78.9	78.7	74.7	71.5	76.4	70.0
	Oct-Dec	74.8	71.5	72.9	73.7	75.7	73.2	78.2	70.3	79.0	79.3	75.0	71.7	76.6	69.6
2008	Jan-Mar	74.8	70.1	72.3	73.9	76.4	73.3	77.8	71.1	79.5	78.9	75.0	71.9	76.4	69.8
	Apr-Jun	74.8	70.4	72.2	73.3	75.8	72.5	77.7	71.9	79.5	78.8	74.9	72.3	76.5	70.4
	Jul-Sep	74.4	70.4	71.8	73.3	76.1	71.8	77.4	71.1	79.1	78.8	74.6	70.4	76.0	69.9
	Oct-Dec	74.0	69.9	71.2	72.4	76.2	71.5	77.7	71.4	78.6	78.0	74.3	70.6	75.3	68.5
2009	Jan-Mar	73.5	69.6	71.5	71.7	75.5	70.2	77.8	70.2	78.1	77.7	73.8	70.3	74.9	66.8
	Apr-Jun	72.7	67.4	71.0	71.3	75.3	70.2	77.1	68.8	77.3	76.6	73.0	69.5	74.0	65.8
	Jul-Sep	72.5	68.2	70.7	71.2	74.9	70.0	77.1	68.6	77.1	75.7	72.8	69.0	73.9	66.3
	Oct-Dec	72.4	69.0	70.4	70.7	74.6	70.5	76.2	68.7	77.0	75.5	72.6	68.9	73.5	67.3

Note:

1 Includes employees, self-employed, participants on government-supported training schemes and unpaid family workers.

Source: Labour Force Survey, Office for National Statistics

Table 7
Unemployment rates for persons aged 16 and over: by NUTS1 region

		Per cent, seasonally adjusted													
		United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Northern Ireland
2006	Oct-Dec	5.5	6.8	5.4	6.1	5.8	6.8	4.5	7.7	4.3	3.9	5.6	5.4	5.1	4.2
2007	Jan-Mar	5.5	6.9	5.8	6.3	5.4	6.4	4.8	7.1	4.7	4.0	5.6	5.6	5.0	4.0
	Apr-Jun	5.4	6.3	5.8	5.5	4.9	6.6	4.6	7.2	4.3	4.0	5.5	5.8	4.6	3.8
	Jul-Sep	5.3	6.1	6.0	5.4	5.7	6.4	5.1	6.1	4.5	4.0	5.4	5.2	5.0	3.9
	Oct-Dec	5.2	5.8	5.8	5.4	5.3	5.9	4.4	6.6	4.5	3.7	5.3	5.0	4.9	4.2
2008	Jan-Mar	5.2	6.6	6.0	5.1	5.3	6.2	4.5	6.9	3.9	3.7	5.3	5.3	4.7	4.5
	Apr-Jun	5.3	7.4	6.4	6.0	5.6	6.1	4.6	6.7	4.1	3.8	5.5	5.2	4.2	4.1
	Jul-Sep	5.9	8.1	6.8	6.9	5.9	6.6	4.8	7.4	4.5	4.2	6.0	6.6	4.8	4.1
	Oct-Dec	6.4	8.4	7.9	6.7	6.3	8.0	5.6	7.3	5.0	4.8	6.5	7.0	5.3	5.3
2009	Jan-Mar	7.1	8.4	7.9	8.0	7.1	9.3	6.0	8.2	5.4	5.8	7.2	7.7	6.0	6.2
	Apr-Jun	7.8	9.8	8.5	8.8	7.2	10.5	6.4	8.9	5.9	6.4	7.9	7.7	7.1	6.7
	Jul-Sep	7.8	9.4	8.6	8.7	7.4	10	6.4	9.1	6	6.6	7.9	8.7	7.3	7.1
	Oct-Dec	7.8	9.3	8.5	9.1	7.2	9.4	6.5	9.1	6.2	6.4	7.9	8.6	7.6	6.0

Source: Labour Force Survey

a proportion of the population, from the Labour Force Survey (LFS).

In quarter four (October to December) of 2009, the UK employment rate was 72.4 per cent, down 1.6 percentage points from a year ago and down 0.1 percentage points from quarter three (July to September) of 2009. Regional rates varied from 77.0 per cent in the South East of England to 67.3 per cent in Northern Ireland.

All UK regions experienced annual falls in the employment rate. The largest fall was in London at 2.7 percentage points while the smallest decrease was in the North West at 0.8 percentage points.

Table 7 shows the unemployment rate (according to the internationally-consistent International Labour

Organisation definition) for persons aged 16 and over from the LFS. The UK rate in the fourth quarter of 2009 was 7.8 per cent, up 1.4 percentage points from a year ago and unchanged from the last quarter. Regionally, the rates ranged from 9.4 per cent in the West Midlands to 6.0 per cent in Northern Ireland.

Over the year the unemployment rate rose in all regions. Yorkshire and The Humber had an increase of 2.4 percentage points while the smallest increase was in the North West at 0.6 percentage points.

Table 8 shows economic inactivity rates for persons of working age from the LFS. The UK rate in the fourth quarter of 2009 was 21.3 per cent, up 0.2 percentage points from the previous quarter and up 0.6

percentage point on a year earlier. Across the regions, rates varied from 17.7 per cent in the South East to 28.3 per cent in Northern Ireland.

Compared with a year earlier, three regions had a decrease in the inactivity rate, and thus a corresponding increase in the working-age activity rate. Yorkshire and The Humber had the largest annual fall of 0.4 percentage points. Nine regions had an increase in the economic inactivity rate over the year. The largest annual rise was in London with 1.3 percentage points.

Table 9 shows the number of employee jobs, not seasonally adjusted, from the Employers Surveys. The number of UK employee jobs was 26,436,000, a decrease of 586,000 over the year since December

Table 8
Economic inactivity rates for persons of working age: by NUTS1 region

Per cent, seasonally adjusted

		Yorkshire														Northern	
		United Kingdom	North East	North West	and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Ireland		
2006	Oct-Dec	21.0	24.1	22.8	21.4	18.7	21.7	19.0	24.0	17.7	18.5	20.8	24.0	19.6	27.1		
2007	Jan-Mar	21.2	23.7	23.0	22.1	19.6	22.4	18.5	24.5	17.8	18.6	21.1	24.0	19.3	26.3		
	Apr-Jun	21.2	23.5	22.8	22.4	20.0	22.0	18.7	24.6	17.7	18.5	21.1	23.5	19.1	26.5		
	Jul-Sep	21.1	23.3	22.9	22.5	19.6	21.7	18.4	24.6	17.2	18.0	20.9	24.5	19.5	27.1		
	Oct-Dec	21.0	24.0	22.4	21.9	19.9	22.0	18.0	24.5	17.2	17.5	20.7	24.4	19.4	27.2		
2008	Jan-Mar	20.9	24.9	22.9	22.0	19.2	21.7	18.4	23.5	17.2	18.0	20.7	24.0	19.7	26.8		
	Apr-Jun	20.8	23.8	22.7	21.9	19.5	22.6	18.5	22.9	17.0	18.0	20.6	23.5	20.1	26.5		
	Jul-Sep	20.8	23.2	22.9	21.1	18.9	22.9	18.5	23.1	17.1	17.6	20.5	24.4	20.0	27.1		
	Oct-Dec	20.7	23.5	22.5	22.3	18.5	22.0	17.6	22.9	17.1	17.9	20.4	23.8	20.3	27.7		
2009	Jan-Mar	20.7	23.8	22.2	21.8	18.6	22.3	17.2	23.4	17.2	17.3	20.3	23.6	20.2	28.7		
	Apr-Jun	21.0	25.1	22.2	21.6	18.6	21.2	17.5	24.3	17.7	18.0	20.6	24.4	20.2	29.4		
	Jul-Sep	21.1	24.5	22.4	21.7	18.9	21.9	17.4	24.3	17.9	18.8	20.8	24.1	20.1	28.6		
	Oct-Dec	21.3	23.7	22.8	21.9	19.4	21.9	18.4	24.2	17.7	19.1	21.0	24.3	20.2	28.3		

Source: Labour Force Survey

Table 9
Employee jobs:¹ by NUTS1 region

Thousands, not seasonally adjusted

		Yorkshire														Northern	
		United Kingdom	North East	North West	and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Ireland		
Dec 06		27,150	1,057	3,036	2,231	1,878	2,357	2,384	4,036	3,673	2,217	22,869	1,181	2,382	718		
Dec 07		27,343	1,044	3,041	2,240	1,903	2,353	2,381	4,109	3,744	2,228	23,043	1,164	2,400	736		
Dec 08		27,022	1,036	2,987	2,187	1,876	2,319	2,378	4,063	3,712	2,209	22,767	1,145	2,385	725		
Mar 09		26,575	1,018	2,951	2,154	1,830	2,258	2,333	4,013	3,648	2,188	22,393	1,116	2,354	712		
Jun-09		26,495	1,011	2,944	2,146	1,825	2,246	2,326	3,987	3,651	2,191	22,327	1,123	2,339	706		
Sep 09		26,370	1,003	2,927	2,126	1,839	2,237	2,315	3,969	3,630	2,181	22,227	1,113	2,332	698		
Dec 09		26,436	1,013	2,940	2,128	1,833	2,252	2,308	4,000	3,641	2,163	22,278	1,117	2,336	705		

Note:

Source: Employer surveys.

1 Employee jobs figures are of a measure of jobs rather than people. For example, if a person holds two jobs, each job will be counted in the employee jobs total. Employee jobs figures come from quarterly surveys of employers carried out by ONS and administrative sources.

Table 10
Claimant count rates:¹ by NUTS1 region

Per cent, seasonally adjusted

		Yorkshire														Northern	
		United Kingdom	North East	North West	and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Ireland		
2005		2.7	3.9	2.9	2.9	2.5	3.4	2.1	3.4	1.6	1.6	2.6	3.0	3.2	3.3		
2006		2.9	4.1	3.3	3.3	2.8	3.9	2.3	3.5	1.8	1.8	2.9	3.1	3.2	3.2		
2007		2.7	4.0	3.1	3.0	2.6	3.7	2.1	3.0	1.6	1.6	2.7	2.8	2.8	2.8		
2008		2.8	4.5	3.4	3.3	2.8	3.8	2.2	2.8	1.7	1.7	2.8	3.2	2.8	3.1		
2009		4.7	6.9	5.4	5.7	4.9	6.3	4.0	4.3	3.3	3.4	4.7	5.5	4.5	5.5		
2009	Mar	4.5	6.6	5.1	5.4	4.7	6.0	3.9	4.0	3.2	3.3	4.4	5.3	4.3	5.0		
	Apr	4.6	6.8	5.3	5.6	4.8	6.2	4.0	4.2	3.3	3.4	4.6	5.4	4.4	5.2		
	May	4.7	7.0	5.5	5.7	4.9	6.3	4.0	4.3	3.4	3.4	4.7	5.5	4.5	5.4		
	Jun	4.8	7.0	5.5	5.8	5.0	6.4	4.1	4.4	3.4	3.5	4.8	5.6	4.6	5.5		
	Jul	4.9	7.1	5.6	5.9	5.1	6.5	4.1	4.5	3.5	3.5	4.8	5.6	4.7	5.7		
	Aug	4.9	7.1	5.7	6.0	5.1	6.6	4.2	4.6	3.5	3.5	4.9	5.7	4.7	5.8		
	Sep	5.0	7.1	5.7	6.0	5.1	6.7	4.2	4.6	3.6	3.5	4.9	5.7	4.8	6.0		
	Oct	5.0	7.2	5.7	6.1	5.2	6.7	4.2	4.7	3.6	3.5	5.0	5.7	4.8	6.0		
	Nov	5.0	7.1	5.7	6.1	5.1	6.6	4.2	4.7	3.6	3.5	4.9	5.7	4.9	6.0		
	Dec	4.9	7.1	5.6	6.0	5.1	6.5	4.1	4.6	3.5	3.4	4.9	5.6	4.9	6.1		
	2010	Jan	5.0	7.2	5.7	6.1	5.1	6.5	4.2	4.7	3.5	3.4	4.9	5.6	5.0	6.2	
		Feb	4.9	7.0	5.5	5.9	4.9	6.3	4.0	4.6	3.4	3.3	4.8	5.5	4.9	6.2	
Mar		4.8	6.8	5.3	5.8	4.8	6.2	4.0	4.5	3.3	3.2	4.7	5.3	4.9	6.3		

Note:

Source: Jobcentre Plus administrative system.

1. Count of claimants of Jobseeker's Allowance expressed as a percentage of the total workforce - i.e. workforce jobs plus claimants.

2008. In percentage terms, this was a 2.8 per cent decrease.

There were annual decreases in all twelve regions. The largest percentage decrease was in the West Midlands and the East of England (both -2.9 per cent).

Table 10 shows the claimant count rate (referring to people claiming Jobseeker's Allowance benefits as a proportion of the workforce). The UK rate was 4.8 per cent in March 2010, down 0.1 percentage point since February 2010, and up 0.3 percentage points on a year earlier. This national rate masks large variations between regions and component countries of the UK. For March 2010, the North East had the highest claimant count rate in the UK at 6.8 per cent. The North East was followed by Northern Ireland (6.3 per cent) and the West Midlands (6.2 per cent). The lowest claimant count was measured in the South

West at 3.2 per cent followed by the South East at 3.3 per cent. The claimant count rate was 4.9 per cent in Scotland, 4.7 per cent in England and 5.3 per cent in Wales.

The South West was the only region to show a decrease in the claimant count rate compared with a year ago, down 0.1 percentage point. The largest increases were in Northern Ireland (1.3 percentage points) and London (0.5 percentage points).

Notes

- 1 UK Regional Trade in Goods Statistics, Quarter 4 2009, HM Revenue and Customs at www.uktradeinfo.com/index.cfm?task=td_regstats_press
- 2 For a summary of all different levels of qualifications see 'Notes and definitions' at www.statistics.gov.uk/statbase/product.asp?vlnk=836

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Key time series

1 National accounts aggregates

Last updated: 23/04/10

Seasonally adjusted

	£ million		Indices (2005 = 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
2004	1,202,956	1,070,951	95.9	95.9	98.4	97.9	97.7	98.0	98.2
2005	1,254,058	1,116,648	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	1,325,795	1,181,141	105.7	105.8	101.7	102.9	103.0	102.8	102.7
2007	1,398,882	1,245,735	111.5	111.6	105.4	105.5	105.7	105.7	105.6
2008	1,448,391	1,298,795	115.5	116.3	106.9	106.1	106.2	108.9	109.6
2009	1,395,872	1,260,660	111.3	112.9	101.3	100.8	101.3	110.4	111.5
2004 Q1	294,112	261,280	93.8	93.6	97.9	97.2	96.9	96.5	96.5
2004 Q2	299,142	265,977	95.4	95.3	98.0	97.8	97.6	97.6	97.6
2004 Q3	302,115	269,503	96.4	96.5	97.8	97.9	97.7	98.5	98.8
2004 Q4	307,587	274,191	98.1	98.2	100.0	98.7	98.5	99.5	99.7
2005 Q1	308,723	274,756	98.5	98.4	99.6	99.0	99.0	99.5	99.4
2005 Q2	313,479	279,258	100.0	100.0	101.1	99.7	99.7	100.3	100.3
2005 Q3	313,378	278,669	100.0	99.8	99.2	100.3	100.3	99.6	99.6
2005 Q4	318,478	283,965	101.6	101.7	100.0	101.0	101.0	100.6	100.7
2006 Q1	326,085	291,002	104.0	104.2	101.2	102.1	102.2	101.9	102.0
2006 Q2	327,836	291,886	104.6	104.6	101.5	102.5	102.6	102.0	101.9
2006 Q3	333,542	297,046	106.4	106.4	101.8	103.0	103.1	103.3	103.2
2006 Q4	338,332	301,207	107.9	107.9	102.3	103.8	104.0	103.9	103.8
2007 Q1	344,238	306,154	109.8	109.7	103.6	104.6	104.7	105.0	104.7
2007 Q2	348,010	309,585	111.0	110.9	104.7	105.2	105.4	105.5	105.2
2007 Q3	351,635	313,159	112.2	112.2	105.1	105.8	106.0	106.0	105.8
2007 Q4	354,999	316,837	113.2	113.5	108.0	106.3	106.6	106.5	106.5
2008 Q1	363,438	324,362	115.9	116.2	109.6	107.1	107.2	108.2	108.4
2008 Q2	363,981	324,596	116.1	116.3	107.9	107.0	107.1	108.5	108.6
2008 Q3	361,706	325,359	115.4	116.5	106.3	106.0	106.1	108.8	109.8
2008 Q4	359,266	324,478	114.6	116.2	103.9	104.1	104.2	110.1	111.6
2009 Q1	348,525	315,778	111.2	113.1	102.1	101.4	101.6	109.6	111.3
2009 Q2	345,463	312,335	110.2	111.9	100.3	100.7	101.1	109.4	110.7
2009 Q3	348,982	314,688	111.3	112.7	100.4	100.4	100.9	110.8	111.7
2009 Q4	352,902	317,859	112.6	113.9	102.4	100.9	101.3	111.6	112.4
2010 Q1						101.1	101.5		

Percentage change, quarter on corresponding quarter of previous year

	IHYO	ABML ⁴	YBGO ⁴	IHYR	ABMM ⁴	IHYU	ABML/ABMM ⁴
2004 Q1	5.7	5.4	3.0	3.6	3.4	2.0	1.9
2004 Q2	5.6	5.3	3.4	3.2	3.2	2.3	2.1
2004 Q3	5.2	5.4	2.5	2.6	2.6	2.6	2.8
2004 Q4	5.7	5.9	3.0	2.4	2.4	3.1	3.4
2005 Q1	5.0	5.2	1.8	1.8	2.1	3.1	3.0
2005 Q2	4.8	5.0	3.2	2.0	2.2	2.8	2.7
2005 Q3	3.7	3.4	1.4	2.5	2.6	1.2	0.7
2005 Q4	3.5	3.6	0.0	2.4	2.6	1.1	1.0
2006 Q1	5.6	5.9	1.6	3.2	3.2	2.4	2.6
2006 Q2	4.6	4.5	0.4	2.8	2.9	1.7	1.5
2006 Q3	6.4	6.6	2.6	2.7	2.9	3.7	3.6
2006 Q4	6.2	6.1	2.3	2.8	2.9	3.3	3.1
2007 Q1	5.6	5.2	2.3	2.4	2.5	3.1	2.7
2007 Q2	6.2	6.1	3.1	2.7	2.7	3.4	3.3
2007 Q3	5.4	5.4	3.3	2.7	2.8	2.6	2.5
2007 Q4	4.9	5.2	5.6	2.4	2.6	2.5	2.6
2008 Q1	5.6	5.9	5.8	2.4	2.4	3.1	3.5
2008 Q2	4.6	4.8	3.1	1.7	1.6	2.9	3.2
2008 Q3	2.9	3.9	1.0	0.2	0.1	2.6	3.8
2008 Q4	1.2	2.4	-3.8	-2.1	-2.3	3.4	4.8
2009 Q1	-4.1	-2.6	-6.9	-5.3	-5.2	1.3	2.7
2009 Q2	-5.1	-3.8	-7.1	-5.9	-5.6	0.9	1.9
2009 Q3	-3.5	-3.3	-5.5	-5.3	-4.9	1.9	1.7
2009 Q4	-1.8	-2.0	-1.4	-3.1	-2.7	1.4	0.7
2010 Q1				-0.3	-0.1		

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: 23/04/10

£ million, chained volume measures, reference year 2005, seasonally adjusted

	Domestic expenditure on goods and services at market prices											Gross domestic product at 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 institutions ¹	General government	Gross fixed capital formation	Changes in inventories ²	Acquisitions less disposals of valuables	Total					
ABJR	HAYO	NMRY	NPQT	CAFU	NPJR	YBIM	IKBK	ABMG	IKBL	GIXS	ABMI	
2004	766,856	30,827	262,917	204,756	4,371	-39	1,270,173	306,582	1,576,497	348,894	0	1,227,387
2005	784,140	30,824	268,088	209,758	4,814	-377	1,296,905	330,794	1,627,699	373,641	0	1,254,058
2006	795,595	31,868	272,271	223,305	4,575	304	1,328,132	368,076	1,696,207	406,374	0	1,289,833
2007	815,157	30,040	275,488	240,613	6,561	562	1,368,506	357,677	1,726,183	403,341	0	1,322,842
2008	822,086	30,832	282,681	232,202	1,812	1,295	1,369,962	361,535	1,731,497	401,137	-271	1,330,088
2009	795,847	29,628	288,819	197,592		1,233	1,297,934	323,256	1,621,190	353,383	-3,161	1,264,646
2004 Q1	189,235	7,875	65,615	50,706	-684	-113	314,855	74,389	389,121	84,284	0	304,784
2004 Q2	191,672	7,737	65,323	51,680	603	65	316,727	76,058	392,705	86,139	0	306,510
2004 Q3	192,642	7,664	65,746	51,351	936	8	317,863	76,895	394,700	87,840	0	306,806
2004 Q4	193,307	7,551	66,233	51,019	3,516	1	320,728	79,240	399,971	90,631	0	309,287
2005 Q1	194,294	7,745	66,418	51,092	3,151	-45	322,029	77,762	399,757	89,398	0	310,313
2005 Q2	195,610	7,676	66,986	51,273	1,895	90	323,588	80,830	404,405	91,846	0	312,550
2005 Q3	196,450	7,687	67,265	53,964	187	-292	325,046	84,250	409,304	94,834	0	314,490
2005 Q4	197,786	7,716	67,419	53,429	-419	-130	326,242	87,952	414,233	97,563	0	316,705
2006 Q1	197,278	7,941	67,862	53,372	1,593	106	328,906	95,835	424,741	104,616	0	320,125
2006 Q2	199,392	8,025	67,692	54,499	-153	241	329,912	97,932	427,844	106,555	0	321,289
2006 Q3	198,692	8,012	68,232	56,780	1,844	-30	333,365	86,854	420,220	97,364	0	322,855
2006 Q4	200,233	7,890	68,485	58,654	1,291	-13	335,949	87,455	423,402	97,839	0	325,564
2007 Q1	202,299	7,447	68,394	59,659	1,595	76	338,804	88,279	427,083	99,211	0	327,872
2007 Q2	203,492	7,413	68,650	59,620	655	348	339,510	88,650	428,160	98,193	0	329,967
2007 Q3	204,321	7,471	69,165	59,777	2,086	45	343,909	90,348	434,256	102,647	0	331,609
2007 Q4	205,045	7,709	69,279	61,557	2,225	93	346,283	90,400	436,684	103,290	0	333,394
2008 Q1	206,823	7,693	69,853	59,370	1,136	212	347,212	91,462	438,674	102,979	86	335,781
2008 Q2	206,278	7,789	70,423	59,512	1,835	436	345,968	91,727	437,696	102,201	17	335,511
2008 Q3	205,676	7,723	70,809	57,362	1,440	366	342,315	91,219	433,534	101,037	-104	332,393
2008 Q4	203,309	7,627	71,596	55,958	-2,599	281	334,467	87,127	421,593	94,920	-270	326,403
2009 Q1	200,058	7,556	71,304	51,855		418	326,434	80,888	407,322	88,742	-681	317,899
2009 Q2	198,344	7,470	71,963	48,119		244	323,191	79,466	402,657	86,168	-773	315,716
2009 Q3	198,359	7,354	72,402	49,475		217	322,924	79,938	402,862	87,201	-835	314,826
2009 Q4	199,086	7,248	73,150	48,143		354	325,385	82,964	408,349	91,272	-872	316,205
2010 Q1												316,837

Percentage change, quarter on corresponding quarter of previous year

	IHYR											
2004 Q1	3.4	1.6	4.7	3.8		4.4	0.2	3.5	3.3			3.6
2004 Q2	3.3	0.7	3.2	7.4		3.9	5.3	4.2	7.6			3.2
2004 Q3	3.2	-0.6	2.6	7.1		3.1	6.8	3.8	8.5			2.6
2004 Q4	3.0	-2.1	1.7	2.3		2.7	7.9	3.7	8.4			2.4
2005 Q1	2.7	-1.7	1.2	0.8		2.3	4.5	2.7	6.1			1.8
2005 Q2	2.1	-0.8	2.5	-0.8		2.2	6.3	3.0	6.6			2.0
2005 Q3	2.0	0.3	2.3	5.1		2.3	9.6	3.7	8.0			2.5
2005 Q4	2.3	2.2	1.8	4.7		1.7	11.0	3.6	7.6			2.4
2006 Q1	1.5	2.5	2.2	4.5		2.1	23.2	6.2	17.0			3.2
2006 Q2	1.9	4.5	1.1	6.3		2.0	21.2	5.8	16.0			2.8
2006 Q3	1.1	4.2	1.4	5.2		2.6	3.1	2.7	2.7			2.7
2006 Q4	1.2	2.3	1.6	9.8		3.0	-0.6	2.2	0.3			2.8
2007 Q1	2.5	-6.2	0.8	11.8		3.0	-7.9	0.6	-5.2			2.4
2007 Q2	2.1	-7.6	1.4	9.4		2.9	-9.5	0.1	-7.8			2.7
2007 Q3	2.8	-6.8	1.4	5.3		3.2	4.0	3.3	5.4			2.7
2007 Q4	2.4	-2.3	1.2	4.9		3.1	3.4	3.1	5.6			2.4
2008 Q1	2.2	3.3	2.1	-0.5		2.5	3.6	2.7	3.8			2.4
2008 Q2	1.4	5.1	2.6	-0.2		1.9	3.5	2.2	4.1			1.7
2008 Q3	0.7	3.4	2.4	-4.0		-0.5	1.0	-0.2	-1.6			0.2
2008 Q4	-0.8	-1.1	3.3	-9.1		-3.4	-3.6	-3.5	-8.1			-2.1
2009 Q1	-3.3	-1.8	2.1	-12.7		-6.0	-11.6	-7.1	-13.8			-5.3
2009 Q2	-3.8	-4.1	2.2	-19.1		-6.6	-13.4	-8.0	-15.7			-5.9
2009 Q3	-3.6	-4.8	2.2	-13.7		-5.7	-12.4	-7.1	-13.7			-5.3
2009 Q4	-2.1	-5.0	2.2	-14.0		-2.7	-4.8	-3.1	-3.8			-3.1
2010 Q1												-0.3

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: 12/04/10

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
Dec–Feb 2008	48,907	31,108	29,483	1,624	17,800	63.6	60.3	5.2	36.4
Dec–Feb 2009	49,292	31,363	29,230	2,133	17,929	63.6	59.3	6.8	36.4
Mar–May 2009	49,387	31,365	28,989	2,376	18,022	63.5	58.7	7.6	36.5
Jun–Aug 2009	49,482	31,396	28,930	2,466	18,087	63.4	58.5	7.9	36.6
Sep–Nov 2009	49,580	31,373	28,914	2,459	18,208	63.3	58.3	7.8	36.7
Dec–Feb 2010	49,679	31,326	28,824	2,502	18,353	63.1	58.0	8.0	36.9
Male	MGSM	MGSJ	MGSA	MGSD	MGSJ	MGWH	MGSJ	MGSY	YBTD
Dec–Feb 2008	23,796	16,873	15,930	943	6,923	70.9	66.9	5.6	29.1
Dec–Feb 2009	24,008	17,013	15,726	1,287	6,996	70.9	65.5	7.6	29.1
Mar–May 2009	24,059	17,004	15,550	1,454	7,055	70.7	64.6	8.6	29.3
Jun–Aug 2009	24,111	16,980	15,451	1,529	7,131	70.4	64.1	9.0	29.6
Sep–Nov 2009	24,166	16,908	15,400	1,508	7,257	70.0	63.7	8.9	30.0
Dec–Feb 2010	24,220	16,880	15,348	1,531	7,341	69.7	63.4	9.1	30.3
Female	MGSN	MGSJ	MGSB	MGSE	MGSK	MGWI	MGST	MGSZ	YBTE
Dec–Feb 2008	25,111	14,234	13,553	681	10,877	56.7	54.0	4.8	43.3
Dec–Feb 2009	25,283	14,350	13,504	846	10,933	56.8	53.4	5.9	43.2
Mar–May 2009	25,328	14,361	13,439	922	10,967	56.7	53.1	6.4	43.3
Jun–Aug 2009	25,371	14,415	13,479	936	10,956	56.8	53.1	6.5	43.2
Sep–Nov 2009	25,415	14,464	13,514	951	10,950	56.9	53.2	6.6	43.1
Dec–Feb 2010	25,459	14,446	13,476	970	11,012	56.7	52.9	6.7	43.3
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
Dec–Feb 2008	37,658	29,795	28,191	1,604	7,862	79.1	74.9	5.4	20.9
Dec–Feb 2009	37,837	29,992	27,893	2,099	7,845	79.3	73.7	7.0	20.7
Mar–May 2009	37,885	29,968	27,625	2,344	7,917	79.1	72.9	7.8	20.9
Jun–Aug 2009	37,931	29,961	27,529	2,432	7,971	79.0	72.6	8.1	21.0
Sep–Nov 2009	37,976	29,927	27,504	2,423	8,049	78.8	72.4	8.1	21.2
Dec–Feb 2010	38,021	29,862	27,404	2,459	8,159	78.5	72.1	8.2	21.5
Male	YBTG	YBSL	YBSF	YBSI	YBSO	MGSP	MGSV	YBTJ	YBTM
Dec–Feb 2008	19,631	16,433	15,500	933	3,198	83.7	79.0	5.7	16.3
Dec–Feb 2009	19,756	16,564	15,290	1,273	3,192	83.8	77.4	7.7	16.2
Mar–May 2009	19,784	16,552	15,110	1,442	3,232	83.7	76.4	8.7	16.3
Jun–Aug 2009	19,813	16,516	15,002	1,514	3,297	83.4	75.7	9.2	16.6
Sep–Nov 2009	19,839	16,437	14,948	1,490	3,402	82.9	75.3	9.1	17.1
Dec–Feb 2010	19,866	16,390	14,878	1,512	3,476	82.5	74.9	9.2	17.5
Female	YBTH	YBSM	YBSG	YBSJ	YBSP	MGSQ	MGSW	YBTK	YBTN
Dec–Feb 2008	18,027	13,362	12,691	672	4,665	74.1	70.4	5.0	25.9
Dec–Feb 2009	18,082	13,429	12,603	826	4,653	74.3	69.7	6.2	25.7
Mar–May 2009	18,101	13,416	12,515	901	4,684	74.1	69.1	6.7	25.9
Jun–Aug 2009	18,119	13,445	12,526	919	4,674	74.2	69.1	6.8	25.8
Sep–Nov 2009	18,136	13,490	12,556	934	4,646	74.4	69.2	6.9	25.6
Dec–Feb 2010	18,154	13,472	12,525	947	4,682	74.2	69.0	7.0	25.8

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: 20/04/10

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	EL25	EAD6	CZBH	CDKQ	CBZX	PLLU ³	PLLV ^{3,4}	RNNK ^{3,4}	RNNQ ^{3,4}
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	4.0	1.7	10.8
2009 Feb	3.2	4.6	4.2	0.0	2.5	3.5	3.0	3.7	0.8	8.9
2009 Mar	2.9	4.3	3.9	-0.4	2.2	3.2	2.0	3.2	-0.4	7.5
2009 Apr	2.3	3.8	3.4	-1.2	1.7	2.7	1.3	2.5	-5.8	2.6
2009 May	2.2	3.6	3.3	-1.1	1.6	2.6	-0.3	1.2	-8.8	0.2
2009 Jun	1.8	3.1	2.9	-1.6	1.0	1.9	-1.0	0.3	-12.0	-2.9
2009 Jul	1.8	3.1	2.8	-1.4	1.2	2.1	-1.3	0.2	-12.2	-3.4
2009 Aug	1.6	2.9	2.7	-1.3	1.4	2.3	-0.3	0.8	-7.7	-2.1
2009 Sep	1.1	2.2	2.1	-1.4	1.3	2.0	0.4	1.3	-6.2	-1.2
2009 Oct	1.5	2.6	2.5	-0.8	1.9	2.8	1.8	2.1	0.5	0.9
2009 Nov	1.9	3.0	2.9	0.3	2.7	3.5	2.9	2.0	4.2	0.8
2009 Dec	2.9	2.8	2.6	2.4	3.8	3.8	3.5	2.5	7.4	1.1
2010 Jan	3.5	1.9	1.7	3.7	4.6	3.3	3.8	2.6	7.7	1.4
2010 Feb	3.0	1.4	1.2	3.7	4.2	2.9	4.2	3.0	7.5	2.3
2010 Mar	3.4	1.8	1.6	4.4	4.8	3.5	5.0	3.6	10.1	4.0

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/05_10/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 weekly earnings – total pay	M
2.16A Average weekly earnings – bonus pay	M
2.17 Average weekly earnings – regular pay	M
2.18 Productivity and unit wage costs	M

Weblink: www.statistics.gov.uk/elmr/05_10/data_page.asp

2.19	Regional labour market summary	M
2.20	International comparisons	M
2.21	Labour disputes	M
2.22	Vacancies by size of enterprise	M
2.23	Vacancies by industry	M
2.24	Redundancies: levels and rates	M
2.25	Redundancies: by industry	Q
2.27	Employment levels by country of birth and nationality	M
2.28	Working age employment rates by country of birth and nationality	Q
2.29	Lone parent claimants of Jobseeker's Allowance by age of youngest child	M
2.30	Key out of work benefits	M
2.31	Production industry employee jobs	M
2.32	Public sector employment by industry	Q

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

Weblink: www.statistics.gov.uk/elmr/05_10/data_page.asp

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
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 and unemployment	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@isc.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

2010 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)

2009 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

Business Enterprise Research and Development

2008 edition

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

Share Ownership

2008 edition

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

United Kingdom Balance of Payments (Pink Book)

2009 edition. Palgrave Macmillan, ISBN 978-0-230-57610-0. Price £52.00.

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

United Kingdom National Accounts (Blue Book)

2009 edition. Palgrave Macmillan, ISBN 978-0-230-57611-7. Price £52.00.

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

Statistical Bulletins

- 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

2009 quarter 4

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

United Kingdom Economic Accounts

2009 quarter 4. Palgrave Macmillan, ISBN 978-0-230-23488-8. Price £37.50.

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

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

2009 quarter 4

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

Statistical Bulletins

- 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

April 2010. Palgrave Macmillan, ISBN 978-0-230-23602-8. Price £50.00.

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

Focus on Consumer Price Indices

March 2010

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

Monthly review of external trade statistics (MM24)

February 2010

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

Producer Price Indices (MM22)

March 2010

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

Statistical Bulletins

- 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

2009 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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Jenny Johnson
- Flash estimates of European labour costs
Graeme Chamberlin
- Regional economic indicators with a focus on industries in the UK regions
Sebnem Oguz and Jonathan Knight

DECEMBER 2009

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Peter Evans and M. Khalid Nadeem Khan
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- Understanding the quality of early estimates of GDP
Gary Brown, Tullio Bucciato, Graeme Chamberlin, Sumit Dey-Chowdhury and Robin Youll
- Implementation of Standard Industrial Classification 2007: December 2009 update
John C. Hughes, Gareth James, Andrew Evans and Debra Prestwood
- Labour Force Survey: Interim reweighting and annual review of seasonal adjustment, 2009
Mark Chandler
- Patterns of non-employment, and of disadvantage, in a recession
Richard Berthoud
- Discontinuity analysis affecting the 2006 ABI employee estimates
Jon Gough
- Methods Explained: The quarterly alignment adjustment
Barry Williams

JANUARY 2010

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Valerie Fender
- Implications of the change in female state pension age for labour market statistics
Richard Clegg, Debra Leaker and Katherine Kent
- Financial crisis and recession: how ONS has addressed the statistical and analytical challenges
Aileen Simkins, Paul Smith and Martin Brand
- The labour market across the UK in the current recession
Jamie Jenkins and Debra Leaker
- Using the OECD equivalence scale in taxes and benefits analysis
Grace Anyaegbu
- Education productivity
Daniel Ayoubkhani, Allan Baird, Fraser Munro and Richard Wild
- Services Producer Price Indices (experimental) – Third quarter 2009
Simon Woodsford

FEBRUARY 2010

- Underemployment in the UK labour market
Annette Walling and Gareth Clancy
- Labour market gross flows data from the Labour Force Survey
Jamie Jenkins and Mark Chandler
- Regional economic indicators: with a focus on differences in sub-regional economic performances
Sebnem Oguz and Jonathan Knight

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Ceri Holdsworth

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Melanie Jones
- CPI and RPI: the 2010 basket of goods and services
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- Incorporating derivatives data in the National Accounts and Balance of Payments
Paul Cullinane
- Civil Service Statistics 2009: A focus on gross annual earnings
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Glenn Everett
- Services Producer Price Indices (experimental) – Fourth quarter 2009
Simon Woodsford

Future articles

List is provisional and subject to change.

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- Regional gross value added
- Disadvantaged groups in the labour market
- Labour disputes in 2009
- Financial statistics for policy – an update

