

# Economic & Labour Market Review

## Contents

### Regulars

In brief	3
Third Labour Force Survey Methodology Workshop in Stockholm; Weale Review of Average Weekly Earnings; Recent milestones in the development of the EU KLEMS accounting framework; ONS contributes to 'ICT for Development' event at the United Nations	
Updates and forthcoming releases	5
Economic review	6
Independent forecasts	15
Key indicators	16

### Features

<b>Employment of foreign workers in the UK: 1997 to 2008</b>	18
<i>Gareth Clancy</i>	
Presents the most up-to-date figures from the Labour Force Survey, using the population estimates published in 2007	
<b>Regional analysis of public sector employment</b>	31
<i>Andrew Barnard</i>	
Presents updated analysis, using latest figures from public sector organisations for Scotland, Northern Ireland and the UK	
<b>The effects of taxes and benefits on household income, 2006/07</b>	37
<i>Francis Jones</i>	
Published annually, examines how taxes and benefits redistribute income between households in the United Kingdom	
<b>Dealing with potential bias in early estimates of GDP</b>	48
<i>Robin Youll</i>	
Considers why this has occurred and the ONS response to reducing the potential for such bias in future	
<b>Recent trends in corporate net lending</b>	53
<i>Graeme Chamberlin</i>	
Investigates some of the factors accounting for the above and why this position is now beginning to reverse	
<b>Measuring inflation</b>	59
<i>Rob Pike</i>	
Explains how official figures are compiled and looks at why some people think the inflation estimate should be higher	
<b>Services producer price index (experimental) – first quarter 2008</b>	61
<i>Ian Richardson</i>	
Illustrates the effects some industries are having on the aggregate indicator measuring movements in prices charged for services	

### Data and support

Key time series	64
National accounts aggregates; Gross domestic product: by category of expenditure; Labour market summary; Prices. Notes to tables; Concepts and definitions	
Directory of online tables	69
Contact points	72
ONS economic and labour market publications	73
Recent and future articles	74

**Vol 2 No 7**  
July 2008 edition

Office for National Statistics

ISBN 978-0-230-21734-8  
ISSN 1751-8326 (print)  
ISSN 1751-8334 (online)

## A National Statistics publication

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The Director of ONS is also the National Statistician.

### Palgrave Macmillan

This publication first published 2008 by Palgrave Macmillan, Houndmills, Basingstoke, Hampshire RG21 6XS and 175 Fifth Avenue, New York, NY 10010, USA

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A catalogue record for this book is available from the British Library.

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## Printing

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources. Logging, pulping and manufacturing processes are expected to conform to the environmental regulations of the country of origin.

Printed and bound in Great Britain by Latimer Trend & Company Ltd, Plymouth, Devon

Typeset by Alias Designs Ltd, Cardiff

## In brief

## Third Labour Force Survey Methodology Workshop in Stockholm

The Third Labour Force Survey (LFS) methodology workshop was held in Stockholm on 22 and 23 May 2008, hosted by Statistics Sweden. The focus of the workshop was on data quality and data processing, following the second workshop on data collection in 2007, and the first workshop on survey design in 2006. The workshops follow the statistical value chain in terms of their content, and the fourth workshop to be held in Slovenia in May 2009 is to focus on LFS outputs. The workshops provide an opportunity for researchers, statisticians and methodologists working on the LFS to meet to discuss common problems, share best practice, and develop networks, facilitating continuing dialogue on LFS methodology and related issues between workshops.

Statistics Sweden were excellent hosts, providing a well-organised workshop in the centre of Stockholm, which was attended by 70 delegates from 34 countries, including some from outside Europe. This represented an increase in the number of participants from 60 at the second workshop in Vienna and 40 at the first workshop in Heerlen, Netherlands. The workshop, which contained plenary and parallel sessions, was opened by Lars Melin, the Director of Business and Labour Market Statistics at Statistics Sweden.

The plenary sessions included a delivery from Eurostat on the measurement issues which are being addressed by the Eurostat Task Force on LFS Quality. The topics covered in the parallel sessions included sampling issues, coding, editing and imputation, the wave approach, mode effects and the measurement of hours worked. The sessions were organised to enable a generous amount of time for discussion on each topic, and to enable some conclusions to be agreed.

The Office for National Statistics, which is represented on the organising committee for the workshop series, delivered a well-received presentation on survey mode effects, prompting some interesting discussion on the identification of mode effects, the role of wave attrition or panel conditioning alongside mode effects, and their impact on data quality. It also raised several questions such

as whether interviewer-administered modes are essential to provide LFS data to required quality standards or whether self-completion modes can be used, and whether internet data collection is feasible in a long and complex panel survey such as the LFS.

In summary, the workshop provided an excellent opportunity for LFS practitioners to meet to discuss common issues and experiences, and plans for the future development and improvement of the LFS.

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## Weale Review of Average Weekly Earnings

The Weale Review of Average Weekly Earnings (AWE) will be published on 16 July 2008. On the same day, the Office for National Statistics (ONS) will publish a News Release and response document.

In February 2008, the National Statistician, in consultation with the Governor of the Bank of England and the Permanent Secretary to the Treasury, invited Martin Weale to examine the fitness of AWE to become a National Statistic as the principal indicator of short-term changes in earnings. The peer review's Terms of Reference were to consider:

- whether ONS's proposed methodology for AWE is fit for purpose for the principal measure of short-term changes in earnings
- whether the reconciliation between AWE and the Average Earnings Index (AEI) provides a satisfactory explanation of the statistical and economic differences between the two measures
- whether AWE is a better measure of short-term changes in earnings than the AEI
- which AWE measure (fixed weights or current weights) should be used in which circumstance
- the nature and extent of supporting information required to supplement AWE
- measurement of AWE at the sector as well as aggregate level, and
- whether, after a transitional period, the AEI could be withdrawn

AWE indicators have been available as experimental indicators since 2005 and ONS has benefited from user feedback that has allowed it to improve the methodology underpinning them. However, given the potential importance of the series, especially in light of their potential to supersede the Average Earnings Index (AEI), ONS decided to use the services of a leading expert to obtain further advice and quality assurance. Martin Weale is the Director of the National Institute of Economic and Social Research and was a member of the Statistics Commission from its inception in 2000 until January 2008. Before joining the National Institute he worked as an economics lecturer at Cambridge University. His research includes work on economic statistics as well as other topics in applied economics. He was also heavily involved in the Review of Revisions to the Average Earnings Index in 1998/99.

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## Recent milestones in the development of the EU KLEMS accounting framework

EU KLEMS is an EU-wide growth accounting framework, with the aim of improving the rigour, detail and comparability of productivity statistics. The principle underlying the framework is to attribute growth in gross output to not only growth in capital and labour, but also intermediate inputs – energy, materials and services (KLEMS). Because the KLEMS framework has more explanatory variables, and better definitions for capital and labour, the residual is a better indicator and the contribution to productivity growth that each factor of production makes. This helps understanding of the gaps in productivity between countries, as well as across industries.



The project's development has been carried out over the last four years by a research consortium, comprising the University of Groningen in the Netherlands and research institutes in Member States, including NIESR in the UK. NSIs have been involved in supporting the project and database, with some attempting to produce

their own national KLEMS database (for example, the Netherlands, Finland and Sweden), some like the UK offering data series and input to methodology, and others taking a passive interest.

June 2008 marked the end of the intensive development phase of the project, though Groningen will continue for a few years to update the database. A conference on 19 and 20 June in Groningen, heard a series of 'keynote' talks on the history of productivity drivers, international comparisons of productivity performance, the background to the EU KLEMS project, and its links to micro analysis. There were also a large number (about 18) of academic research papers presented, which had all used the KLEMS database to do a wide range of analysis.

On 1 July, the Office for National Statistics (ONS) contributed to the Eurostat Task Force on the development of EU KLEMS. The task force was set up in late 2007, to run for a year, to assess the mechanisms by which the KLEMS research project could be handed over to, and therefore continued by, Eurostat and the Member State statistical organisations. A key theme of the task force is to assess the extent to which Member States are able to provide the requisite data series, and to discuss how best to bridge gaps in data series and derive more productivity-appropriate series for capital and labour input. ONS presented its experience in developing a quality-adjusted labour series, capital services series and therefore a more rigorous measure of productivity growth (MFP) using a Cobb-Douglas function, as opposed to the standard, more simple headline value added-labour input method.

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## ONS contributes to 'ICT for Development' event at the United Nations

On 27–29 May, the United Nations hosted a meeting of the 'Partnership on Measuring ICT for Development' at its office in Geneva. The Partnership is sponsored by the UN Committee on Trade and Development (UNCTAD), the International Telecommunications Union (ITU), the Organisation for Economic Co-operation and Development (OECD), Eurostat, and other international bodies, and aims to develop co-operation between countries in ICT measurement and

analysis, to support social and economic development. The event, attended by 66 countries and 22 organisations, was co-chaired by Dr Maral Tutélian, Director General of the Lebanese Statistics Office, and Tony Clayton of the Office for National Statistics (ONS), who chairs the OECD's working group on information society statistics.

The Partnership event focused on the impact of ICT on education, on government services and on economic and business growth, considering a range of evidence from the EU, Southern Asia, the Middle East, Africa and South America. ICT has been identified by the United Nations as an important input to enabling countries to meet the Millennium Development Goals, and the Partnership has been working, since 2005, to create better understanding, through measurement, of the links between technology and economic and social progress. The work programme has involved both developed and developing countries, recognising that this is an important issue for the world economy, to which few have answers.



Working with OECD, the Partnership has created a set of 'core ICT indicators' which countries are encouraged to use as part of the statistical support to development, which were updated at the conference. More importantly, the UN's Regional Commissions are promoting detailed analysis and exchange of good practice within their areas, including the development of benchmarking groups. The conference saw detailed evidence from a study supported by UNCTAD in Thailand, from a multinational study across the EU, led by ONS, and commented on work by the OECD, Eurostat and the World Bank. Much attention focused on the need to assess, and manage, complementary investments, such as skills, alongside ICT.

The Partnership will strengthen its support for statistical capacity development over the coming year, and report progress to the United Nations Statistical Commission early next year.

#### More information

[http://new.unctad.org/upload/global%20event%202008/global\\_event\\_final\\_report.pdf](http://new.unctad.org/upload/global%20event%202008/global_event_final_report.pdf)

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**UPDATES**

Updates to statistics on [www.statistics.gov.uk](http://www.statistics.gov.uk)

9 June

**Producer prices**

*Factory gate inflation rises to 8.9% in May*  
[www.statistics.gov.uk/cci/nugget.asp?id=248](http://www.statistics.gov.uk/cci/nugget.asp?id=248)

10 June

**Index of production**

*Manufacturing: 0.3% three-monthly rise to April*  
[www.statistics.gov.uk/cci/nugget.asp?id=198](http://www.statistics.gov.uk/cci/nugget.asp?id=198)

11 June

**Average earnings**

*Pay growth steady in year to April*  
[www.statistics.gov.uk/cci/nugget.asp?id=10](http://www.statistics.gov.uk/cci/nugget.asp?id=10)

**Public sector employment**

*Employment decreases in Q1 2008*  
[www.statistics.gov.uk/cci/nugget.asp?id=407](http://www.statistics.gov.uk/cci/nugget.asp?id=407)

**UK trade**

*Deficit widened to £4.3 billion in April*  
[www.statistics.gov.uk/cci/nugget.asp?id=199](http://www.statistics.gov.uk/cci/nugget.asp?id=199)

**Unemployment**

*Rate increases to 5.3% in three months to April*  
[www.statistics.gov.uk/cci/nugget.asp?id=12](http://www.statistics.gov.uk/cci/nugget.asp?id=12)

17 June

**Inflation**

*May: CPI up to 3.3%; RPI rises to 4.3%*  
[www.statistics.gov.uk/cci/nugget.asp?id=19](http://www.statistics.gov.uk/cci/nugget.asp?id=19)

19 June

**Public sector**

*May: £9.1 billion current budget deficit*  
[www.statistics.gov.uk/cci/nugget.asp?id=206](http://www.statistics.gov.uk/cci/nugget.asp?id=206)

**Retail sales**

*Food and clothing sectors boost sales*  
[www.statistics.gov.uk/cci/nugget.asp?id=256](http://www.statistics.gov.uk/cci/nugget.asp?id=256)

26 June

**Business investment**

*1.8% fall in Q1 2008*  
[www.statistics.gov.uk/cci/nugget.asp?id=258](http://www.statistics.gov.uk/cci/nugget.asp?id=258)

**Investment**

*Net investment falls to –£3.1 billion*  
[www.statistics.gov.uk/cci/nugget.asp?id=396](http://www.statistics.gov.uk/cci/nugget.asp?id=396)

27 June

**Balance of payments**

*2008 Q1: UK deficit down again*  
[www.statistics.gov.uk/cci/nugget.asp?id=194](http://www.statistics.gov.uk/cci/nugget.asp?id=194)

**GDP growth**

*Economy grew by 0.3% in Q1 2008*  
[www.statistics.gov.uk/cci/nugget.asp?id=192](http://www.statistics.gov.uk/cci/nugget.asp?id=192)

30 June

**Index of services**

*0.3% three-monthly rise into April*  
[www.statistics.gov.uk/cci/nugget.asp?id=558](http://www.statistics.gov.uk/cci/nugget.asp?id=558)

**Productivity**

*Productivity growth falls in Q1 2008*  
[www.statistics.gov.uk/cci/nugget.asp?id=133](http://www.statistics.gov.uk/cci/nugget.asp?id=133)

1 July

**Corporate profitability**

*15.3% in Q1 2008*  
[www.statistics.gov.uk/cci/nugget.asp?id=196](http://www.statistics.gov.uk/cci/nugget.asp?id=196)

**FORTHCOMING RELEASES**

Future statistical releases on [www.statistics.gov.uk](http://www.statistics.gov.uk)

3 July

**New construction orders – May 2008**

7 July

**Civil Service statistics 2007**

**Index of production – May 2008**  
**Investment by insurance companies, pension funds and trusts – Q1 2008**

9 July

**UK trade – May 2008**

10 July

**New construction orders: additional monthly data – May 2008**

14 July

**Monthly review of external trade statistics – May 2008****Producer prices – June 2008**

15 July

**Consumer price indices – June 2008****Digest of engineering turnover and orders – May 2008****MM22: Producer prices – June 2008**

16 July

**Labour market statistics – July 2008****MM19: Aerospace and electronics cost indices – April 2008**

17 July

**Public and private breakdown of labour disputes**

18 July

**Public sector finances – June 2008**

21 July

**Focus on consumer price indices – June 2008****MM17: Price Index Numbers for Current Cost Accounting (PINCCA) – June 2008**

23 July

**Average weekly earnings – July 2008****Public sector finances: supplementary (quarterly) data**

24 July

**Retail sales – June 2008****SDM28: Retail sales – June 2008**

25 July

**Gross domestic product (GDP) – preliminary estimate Q2 2008****Index of services – May 2008**

31 July

**Annual Business Inquiry provisional regional results – 2006**



# Economic review

## July 2008

Anis Chowdhury

Office for National Statistics

### SUMMARY

Gross Domestic Product output slowed in 2008 quarter one compared with the previous quarter. Growth was driven by slower service sector output, offset by virtually flat total production growth. Manufacturing output returned to positive growth in the latest quarter. On the expenditure side, household spending strengthened, while business investment weakened in quarter one compared with the previous quarter. The current account deficit narrowed in quarter one. The goods trade deficit also narrowed in the latest quarter. The labour market continues to be buoyant in 2008 but shows signs of softening, while average earnings remain relatively subdued. Public sector finances deteriorated in May 2008. Consumer price inflation accelerated in May 2008 and was above the Government's inflation target. Producer output and input price inflation accelerated in 2008 quarter one and continued to increase in May 2008.

### GROSS DOMESTIC PRODUCT

## First quarter growth of 0.3 per cent

Gross Domestic Product (GDP) growth for the first quarter of 2008 is estimated to have weakened compared with the previous quarter. GDP increased by 0.3 per cent, a downward revision from the 0.4 per cent initial estimate, and a deceleration from 0.6 per cent growth in the previous quarter. The estimate for the annual rate of growth was

2.3 per cent, down from 2.8 per cent growth in the previous quarter (**Figure 1**).

The growth rate in the UK economy in quarter one continued to be driven by service sector output – albeit at a slower level compared with the previous quarter. Industrial production growth continued to display weakness for the third successive quarter, with output decelerating in the latest quarter. Within total production, there was a fall in the output of the mining & quarrying (including oil & gas), as well as the electricity, gas and water supply industries. This was offset by a moderate

upturn in manufacturing output. The output of the construction sector slowed but grew modestly.

### OTHER MAJOR ECONOMIES

## Global growth shows mixed fortunes in quarter one

Data for 2008 quarter one are now available for most major Organisation for Economic Co-operation and Development (OECD) countries. Data reported a mixed, but overall strengthening, picture of global growth compared with the previous quarter.

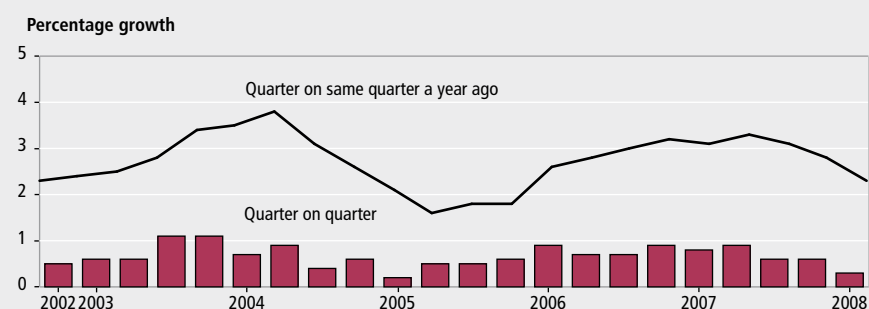
US GDP growth continued to exhibit relative weakness in 2008 quarter one – growing by 0.2 per cent, up from 0.1 per cent in the previous quarter. This was, however, a marked slowdown from the 1.2 per cent growth seen in 2007 quarter three. The weakness in growth was mainly due to a significant deceleration in consumer spending, partly owing to negative conditions in the housing and credit markets. Fragile growth was also partly led by continued contraction in residential investment – for the ninth consecutive quarter. There was also contraction in non-residential investment following positive growth shown in previous quarters. The above weaknesses were partially offset by a positive net trade situation which contributed positively to growth.

Japan's GDP grew by 0.8 per cent in 2008 quarter one, an acceleration from 0.6 per cent growth in the previous quarter. Growth was led by a strengthening in household consumption and net exports. Residential investment also showed buoyant growth following contraction in the previous quarter. However, these factors were offset by a contraction in both private investment and inventories.

Euro-zone growth picked up. According to Eurostat's estimate, euro area GDP growth accelerated to a buoyant 0.8 per cent compared with modest 0.3 per cent growth in the previous quarter. Growth for the two big mainland European Union (EU) economies – Germany and France – showed an improved picture in 2008 quarter one compared with the previous quarter.

German GDP growth accelerated sharply in 2008 quarter one, increasing by 1.5 per

Figure 1  
Gross domestic product



cent, up sharply from 0.3 per cent in the previous quarter. Growth was led partly by positive growth in household consumption following negative growth in the previous quarter. Capital and construction investment also contributed to growth with both accelerating in the latest quarter. Exports grew strongly and continued to be a key driver in Germany's economic growth.

French GDP growth showed a more modest acceleration in 2008 quarter one, rising by 0.6 per cent from 0.3 per cent in the previous quarter. The increase was driven by a sharp acceleration in corporate investment as well as net exports, with both contributing positively to growth. On the other hand, household consumption decelerated, with virtually flat growth recorded in the latest quarter. Italian figures were not available at the time of writing.

## FINANCIAL MARKETS

### Share prices weaken; pound depreciates

Equity performance has displayed volatility in the last couple of years. In recent quarters, equity growth has been particularly weak. In 2008 quarter one, the FTSE All-Share index fell substantially, by around 9 per cent. This follows growth of just 0.5 per cent in the previous quarter.

The weakness in equity growth can mainly be attributed to global growth concerns, particularly regarding the US economy, brought on by financial uncertainty and continued problems concerning the credit squeeze, attributable to the US housing and the sub-prime mortgage market. According to the latest figures, there appears to be a rebound in the second quarter with the FTSE All-Share index rising on average by 4 per cent in the months April to May.

In the currency markets, 2008 quarter one saw sterling's broad average value depreciating markedly compared with the previous quarter. The pound's value against the dollar fell by around 3 per cent compared to appreciation of around 1 per cent in the previous quarter. Against the euro, sterling's value depreciated by approximately 7 per cent, a further depreciation from around 4 per cent in 2007 quarter four. Overall, the quarterly effective exchange rate depreciated by approximately 6 per cent in 2008 quarter one, following depreciation of approximately 3 per cent in the previous quarter. Going into the second quarter, the pound depreciated on average by approximately 1 per cent against both the dollar and the euro in the months April to May. The effective exchange rate also depreciated by around 1 per cent (Figure 2).

The recent movements in the exchange

rate might be linked to interest rate and growth factors. Exchange rate movements can be related to the perceptions of the relative strengths of the US, the euro and UK economy. The depreciation of the pound against both the dollar and the euro in quarter one may have come in response to fears about lower growth in the UK economy and the resulting anticipation of lower interest rates to stimulate the economy. Indeed, the Bank of England reduced interest rates by 25 basis points in April 2008 to 5 per cent, the third cut in interest rates since December 2007, and this action was taken mainly in response to the effects of the sub-prime crisis in terms of downward risks to growth and inflation. These interest rate reductions may have made the pound less appealing to investors compared to other currencies.

Also, the depreciation of the pound against the dollar may have occurred due to perceptions among investors of further prospect of interest rate reductions in the UK compared with the US. However, US interest rates were lowered by a further 0.25 basis points in April 2008 to 2 per cent following a 0.75 basis points reduction in March, and this action was driven by the same growth concerns as in the UK.

In contrast, in the euro area, the further depreciation of the pound against the euro in the first quarter of 2008 may have come in response to continued stability in interest rates in the euro-zone – with the likelihood that interest rates are unlikely to be cut in the medium term. The euro-zone interest rate is currently at 4 per cent, having been maintained there since the 0.25 basis point increase in June 2007, partly in response to concerns about inflationary pressures.

## OUTPUT

### Services sector slows but continues to drive economic growth

GDP growth in 2008 quarter one was estimated to have grown at 0.3 per cent, a deceleration from 0.6 per cent in the previous quarter. On an annual basis it was 2.3 per cent, down from 2.8 per cent in the previous quarter.

Construction activity also weakened in the latest quarter but still grew modestly. Construction output is estimated to have grown by 0.4 per cent, down from 0.9 per cent growth in the previous quarter. Comparing the quarter on the same quarter a year ago, construction output rose by 2.4

Figure 2  
Exchange rates

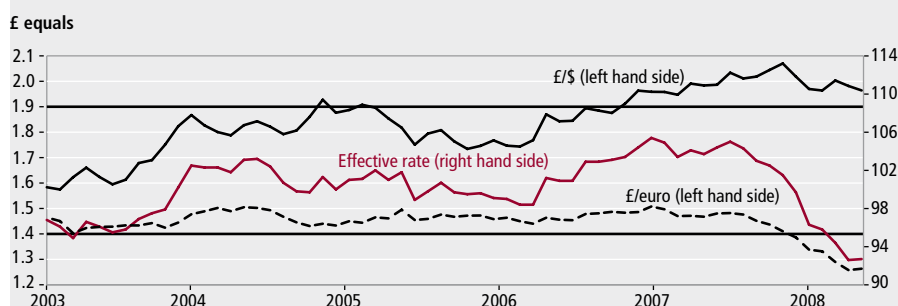


Figure 3  
Construction output



per cent, up from 2.3 per cent growth in the previous quarter (Figure 3).

External surveys also signalled weakening activity in the latest quarter, and this was caused partly by the slowing housing market. The Chartered Institute of Purchase and Supply (CIPS) survey average headline index declined to 51.2 from 55.9 in the previous quarter, but is still indicative of fairly buoyant growth. In May the headline index was 43.9, a further weakening from 46.1 in April. The Royal Institute of Chartered Surveyors (RICS) construction survey for 2008 quarter one reported a sharp fall in the growth of construction workloads with the balance at plus one, down from plus 16 in the previous quarter.

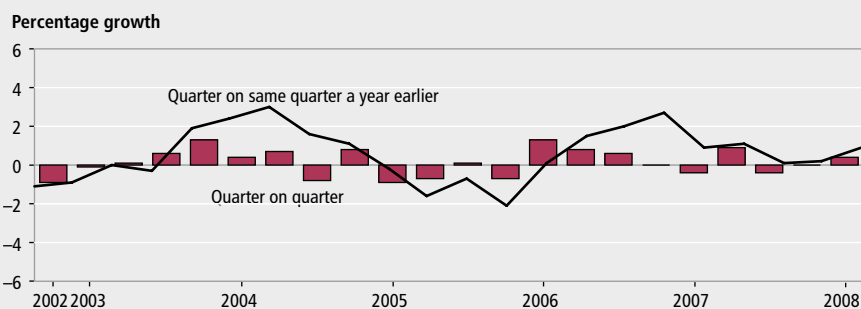
Total output from the production industries weakened in the latest quarter, reversing the subdued upturn of the previous quarter. Growth fell by 0.2 per cent following growth of just 0.2 per cent in 2007 quarter four. On an annual basis output grew by 0.4 per cent, down from 0.7 per cent growth in the previous quarter.

The weakness in total production was driven by a contraction in the output of the mining and quarrying industries, which fell by 4.7 per cent compared with the virtually flat growth in the previous quarter. On an annual basis, output contracted by 4.9 per cent compared with growth of 1.8 per cent in the previous quarter. Weaker total production growth was also partly led by a fall in the output of the electricity, gas and water supply industries, which decreased by 1.3 per cent after output increased by 2.8 per cent in the previous quarter. On an annual basis, growth was 1.4 per cent, down from 4.6 per cent growth in the previous quarter.

In contrast, manufacturing output showed a modest revival, growing by 0.4 per cent compared with the flat growth of the previous quarter. On an annual basis, manufacturing output grew by 0.9 per cent, up from 0.2 per cent growth in the previous quarter (Figure 4).

Production growth has generally been slow since the second quarter of 2006 due to weakness in mining and quarrying and utilities output, offset through most of this period by relatively strong manufacturing output. There was a pick up in production in 2007 quarter two, but this appears not to have been sustained in the following two quarters, due to weak manufacturing output growth. Manufacturing output has displayed volatility in the recent past. In the latest quarter there appears to have been some sort of reversal, with manufacturing

**Figure 4**  
**Manufacturing output**



output showing a modest upturn – but it remains to be seen whether this can be sustained.

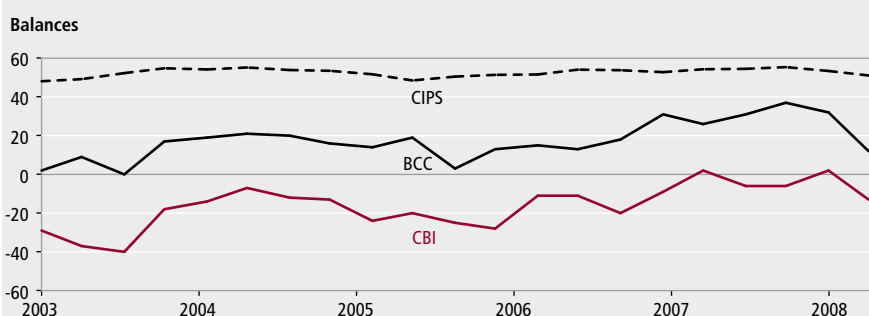
The output of the agriculture, forestry and fishing industries weakened in the latest quarter with output increasing by 0.6 per cent, decelerating from growth of 1.1 per cent in the previous quarter. On an annual basis growth was 1 per cent, down from 2.1 per cent growth in the previous quarter.

External surveys of manufacturing for 2008 quarter one showed a deteriorating picture compared with the previous quarter (Figure 5). In the past, it has not been unusual for the path of business indicators and official data to diverge over the short term. These differences happen partly

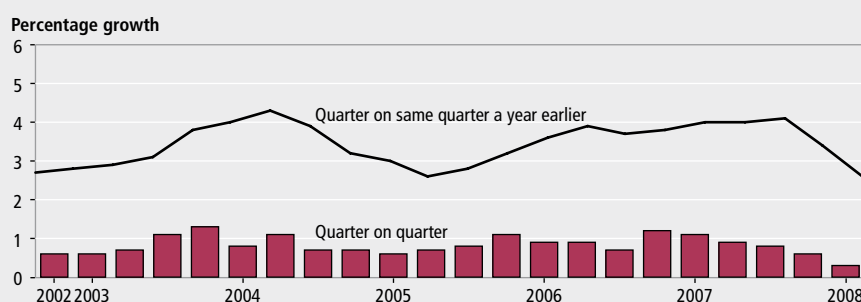
because the series are not measuring exactly the same thing. External surveys measure the direction, rather than the magnitude, of a change in output and often inquire into expectations rather than actual activity.

The CIPS average headline index for manufacturing indicated a slowdown but still painted a fairly robust picture in the latest quarter. The headline index was 51.1, down from 53.4 in the previous quarter. The latest survey in May recorded a stagnant position with the balance at 50.0 from 50.8 in April. The Confederation of British Industry (CBI), in its 2008 quarter one Industrial Trends survey, reported a weakening in its total order books with the balance dropping to minus 13, from plus

**Figure 5**  
**External manufacturing**



**Figure 6**  
**Services output**





two in the previous quarter. According to the latest monthly survey, the CBI reported manufacturers' orders as holding up well, with the balance at plus one in June. The British Chambers of Commerce (BCC), in its 2008 quarter one survey, also reported a weakening picture of manufacturing activity. The home sales balance dropped to plus 12 from plus 32 in the previous quarter – the lowest since 2005 quarter three.

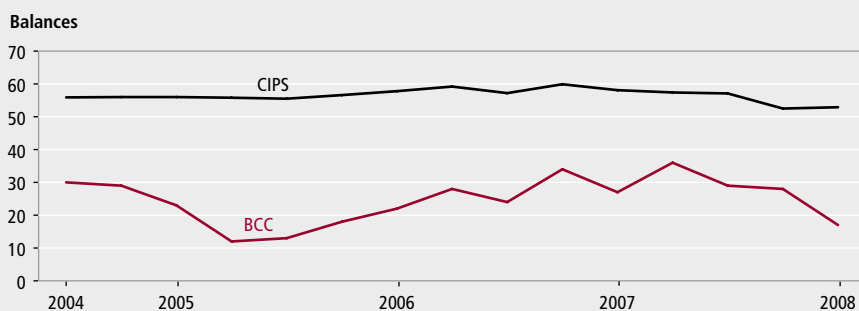
According to the latest Index of Production figures, the output of the production industries fell by 0.1 per cent in the three months to April, compared with the previous three months. In the latest three months, manufacturing output increased by 0.3 per cent, while mining and quarrying output decreased by 3.2 per cent. Output of the electricity, gas and water supply industries decreased by 0.4 per cent compared with the previous three months.

Overall, the service sector, the largest part of the UK economy, continues to be the main driver of UK economic growth. However, there was a significant easing in service sector growth in the latest quarter.

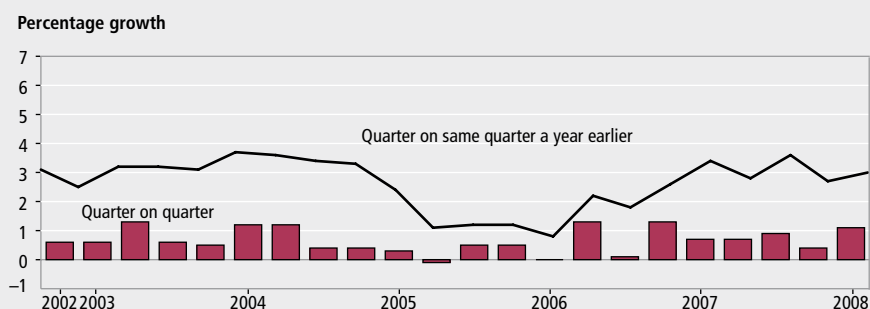
Services output grew by 0.3 per cent in 2008 quarter one, a reduction from 0.6 per cent growth in the previous quarter, and a further slowdown from growth of 0.8 per cent recorded in 2007 quarter three (Figure 6). On an annual basis, services output expanded by 2.6 per cent, down from 3.4 per cent in the previous quarter.

Growth was recorded in varying degrees across all four broad sectors, with a slowdown overall. The main contribution to the decline in services output growth came from businesses services and finance, where output decelerated to 0.2 per cent from 0.4 per cent in the previous quarter. On an annual basis growth was 3.4 per cent, down from 4.6 per cent in the previous quarter. The output of the transport, storage and communication industries also decelerated with growth of 0.7 per cent, down from 1.7 per cent in the previous quarter. On an annual basis, growth was 2.5 per cent, down from 4 per cent in the previous quarter. There was also a weakening in the output of government and other services, which grew by 0.4 per cent, down from 0.6 per cent in the previous quarter. On an annual basis, growth was 1.9 per cent, down from 2 per cent in 2007 quarter four. This was partially offset by marginally stronger, but still fairly subdued, growth in the output of the distribution, hotels and catering industries. Growth rose to 0.3 per cent from 0.2 per cent in the previous quarter. On an annual basis, growth was 2.4 per cent, down from

**Figure 7**  
**External services**



**Figure 8**  
**Household demand**



3.1 per cent in the previous quarter.

The external surveys on services showed a mixed picture of service sector activity in 2008 quarter one. The CIPS survey pointed to a stable, but still healthy, picture of service sector activity. The average headline index in 2008 one was 52.9, up from 52.5 in the previous quarter. In the second quarter, the CIPS survey reported a marked weakening in the average headline index. The balance was 49.8 in May, falling below the 50.0 no change mark. It should be noted that the CIPS survey has a narrow coverage of the distribution and government sectors.

The CBI and BCC reported a generally weakening picture of service sector activity. The latest CBI service sector survey in June reported weakness as a whole in the sector and in line with the February survey. For consumer services, volume of business fell sharply with the balance at minus 44 per cent, the lowest since November 2001. For business and professional services, the balance was at plus ten, still below the long-term average of plus 19. The BCC survey for 2008 quarter one reported a weakening picture of service sector activity, but overall balances for home orders and sales remained positive at plus 14 and plus 17, from plus 18 and plus 28 respectively (Figure 7).

The UK sectoral account shows the UK corporate sector being a net lender in 2008 quarter one. However, the level was relatively modest and was an improvement compared with the substantial net borrowing position of the previous quarter. Despite the surplus, the overall debt level remains high due to heavy borrowing between 1997 and 2001. The household sector remains a net borrower as income growth proved insufficient to finance total outlays. Households debt levels continue to be relatively high, although the quarterly interest payments on the loans are still being kept down by low interest rates as a proportion of income. The level of central government borrowing decreased in 2008 quarter one from the previous quarter, but still remains high due to increased rises in cash expenditure exceeding tax receipts. The current account of the UK balance of payments continues to be in deficit.

#### EXPENDITURE

### Consumers' spending strengthens

Household consumption expenditure accelerated in 2008 quarter one from the previous quarter. Growth was 1.1 per cent, up markedly from the 0.4 per cent

in quarter four. Compared with the same quarter a year ago, growth was 3 per cent, up from 2.7 per cent in the previous quarter (**Figure 8**). Higher spending was primarily driven by a rise in durable and semi-durable goods expenditure. This was offset by slower growth in non-durable goods expenditure. There was modest growth in services expenditure.

One key indicator of household expenditure is retail sales. Retail sales strengthened in 2008 quarter one compared with the previous quarter contributing, to a certain extent, to buoyant consumer spending in quarter one. Retail sales volumes grew by 2.0 per cent in quarter one, an acceleration from growth of 0.5 per cent in 2007 quarter four. The robustness in retail sales in the latest quarter may be partly attributed to continued, widespread discounting which is reflected in the price deflator (that is, shop prices). This fell on average by 0.9 per cent in 2008 quarter one.

Retail sales figures are published on a monthly basis and the latest available figures for May 2008 showed a robust picture – partly attributable to warm weather conditions (**Figure 9**). In the three months to May, the volume of retail sales increased by 1.8 per cent compared with an increase of 1.5 per cent in the three months to April. On an annual basis in May, the

latest three months growth compared with the same three months a year ago recorded strong growth of 5.4 per cent, up from 4.6 per cent in April.

In the latest month, discounting appears to have played a lesser role compared with the previous month. The price deflator fell by 0.3 per cent in May 2008 compared with a fall of 1 per cent in April.

Retail sales can be disaggregated into 'predominantly food' and 'predominantly non-food' sectors. In the three months to May 2008, retail sales growth in volume terms was driven by the 'predominantly non-food stores' and to a lesser extent by the 'predominantly food stores' sector. The 'predominantly non-food stores' sector grew by 2.5 per cent, up from 1.7 per cent in the previous month – reflecting growth across all stores. Within this sector there was a rebound in the 'household goods stores', which grew by 0.8 per cent after contracting by 1.4 per cent in the previous month. There was also a strengthening in the 'textile, clothing and footwear stores' and 'other stores', with volume of retail sales growing by 1.2 per cent and 5.4 per cent respectively. Non-store retailing and repair in contrast slowed, with growth of 2.2 per cent, down from 3.4 per cent in April. The 'predominantly-food stores' sector grew by 0.7 per cent in May, down marginally from

0.9 per cent growth in the previous month.

External surveys for retail sales presented a mixed picture of growth in 2008 quarter one. The CBI reported an average balance of plus one in the latest quarter, down from plus ten in the previous quarter. The latest balance in May, according to the monthly Industrial Trends survey, was minus 14. The British Retail Consortium (BRC) reported average growth of 3.3 per cent in 2008 quarter one on a total sales basis, up from 2.8 per cent in 2007 quarter four. According to the latest May figures, total sales growth was 4.6 per cent (**Figure 10**).

Another indicator of household consumption expenditure is borrowing. Household consumption has risen faster than disposable income in recent years, as the household sector has become a considerable net borrower and therefore accumulated high debt levels. Bank of England data on stocks of household debt outstanding to banks and building societies shows household debt at unprecedented levels relative to disposable income. Until recently, this borrowing has fuelled consumption, though it appears to be of a lesser case in the latest quarter.

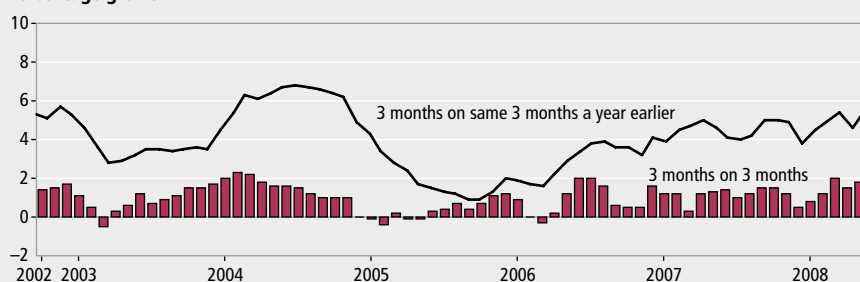
There are two channels of borrowing available to households: secured lending, usually on homes; and unsecured lending, for example on credit cards.

The financial account shows that the general movement from net lending to borrowing since 1992 has primarily been facilitated by increases in both secured and unsecured lending, and it has mainly driven by loans on secured dwellings. In the latest quarter, there was a substantial fall in secured lending, which rose by approximately £14 billion compared with around £21 billion in the fourth quarter and £33 billion in the third quarter. This is mainly attributable to the credit crisis. Unsecured lending also fell, to around £2.7 billion, down from approximately £3 billion in 2007 quarter four and around £4 billion in 2007 quarter three. Despite this easing, borrowing is still contributing to some extent in household consumption growth in the latest quarter.

Another factor that could be cited as having a considerable influence in the acceleration in household expenditure in the latest quarter is the savings ratio. It appears the savings ratio is a major factor, with households resorting to the draw down in their savings to fund consumption. The weakening in total lending and borrowing has been compensated by a fall in the savings ratio, thus contributing towards

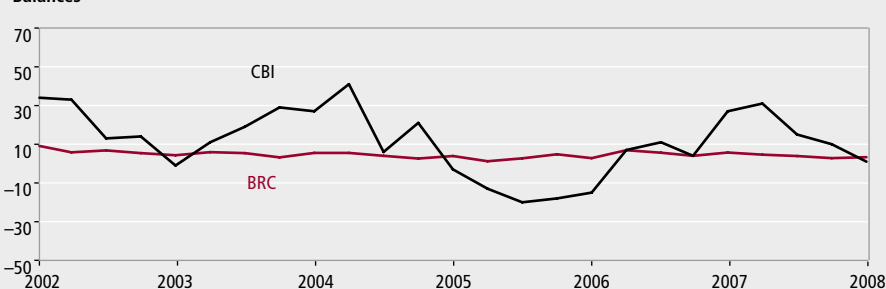
**Figure 9**  
**Retail sales**

Percentage growth



**Figure 10**  
**External retailing**

Balances



strong final consumption expenditure. The slowdown in the savings ratio also reflects wages and salaries failing to keep up with strengthening tax payments on income and wealth. The saving ratio in 2008 quarter one was 1.1 per cent – the lowest since 1959 quarter four when it was 0.7 per cent. This compares with 3 per cent in 2007 quarter four (Figure 11).

#### BUSINESS DEMAND

### Business investment weakens

Total investment fell by 1.5 per cent in 2008 quarter one compared with growth of 2.2 per cent in the previous quarter. On an annual basis, total investment grew by 1.4 per cent, a slowdown from 4.4 per cent growth in the previous quarter. The decrease in total investment was due to both business and dwelling investment falling on the quarter (Figure 12).

Business investment decelerated markedly in 2008 quarter one, contracting by 1.8 per cent, following growth of 3.1 per cent in 2007 quarter four. On an annual basis, business investment grew by 4.5 per cent in the latest quarter, a slowdown from 6.7 per cent growth in the previous quarter. The slowdown in business investment was due to sharp declines in construction, consumer goods manufacturing and distribution.

Business investment could have decreased for a number of reasons. First, increased uncertainty and pessimism, particularly with regards to global demand may have deterred investment; second, the downturn in investment could have come on the back of lower corporate profits; third, the weakness in the equity market in recent quarters may have constrained revenue generation and hence investment; and last but not least, the general weakness in the property market in terms of lower price growth may have inhibited investment spending.

Evidence on investment intentions from the latest BCC and CBI surveys painted a weak picture. According to the latest quarterly BCC survey, the balance of manufacturing firms planning to increase investment in plant and machinery fell by nine points to plus 12 – the lowest since 2005 quarter four. The CBI's Quarterly Industrial Survey in 2008 quarter one also reported a bleaker investment picture,

Figure 11  
Household saving ratio

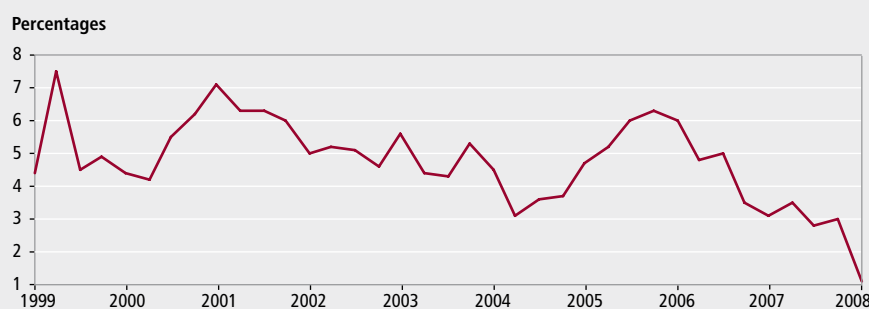


Figure 12  
Total fixed investment

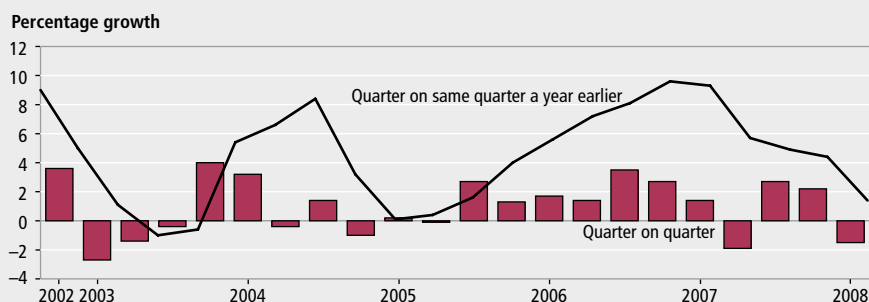
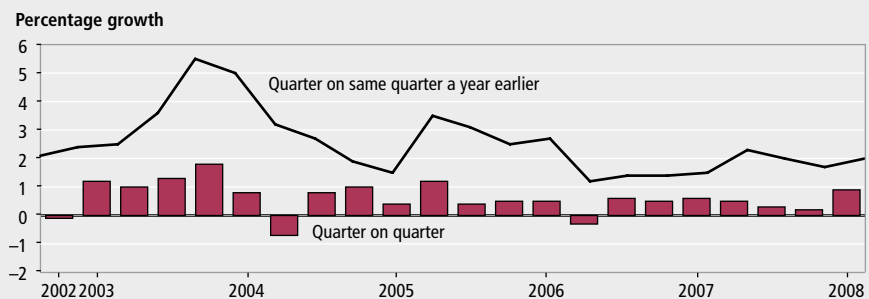


Figure 13  
Government spending



with the investment balance of plant and machinery weakening to minus 18 from minus 12 in the previous quarter.

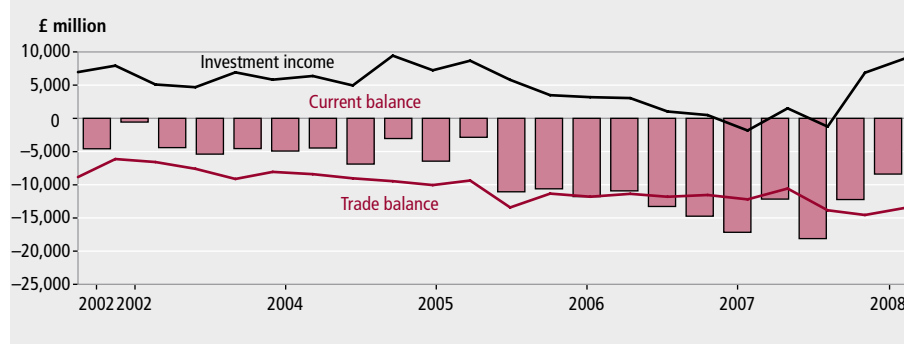
According to the sectoral accounts, the private non-financial corporate sector reported net lending of £0.2 billion in the latest quarter, reversing net borrowing of £3.2 billion in the previous quarter. This was driven by decreases (destocking) in inventories and net property income. Despite this, corporate sector debt levels remain high regardless of the sector surplus of recent years. The financial balance sheet shows the corporate sector had net liabilities of around £1.8 billion.

#### GOVERNMENT DEMAND

### Government expenditure increases

Government final consumption expenditure accelerated in the latest quarter. Growth jumped to 0.9 per cent following growth of 0.2 per cent in the previous quarter. On an annual basis, growth was 2 per cent, up from 1.7 per cent in the previous quarter (Figure 13).

**Figure 14**  
**Balance of payments**



## Public sector finances deteriorate

The latest public sector finances to May 2008 figures illustrated a negative picture. The figures showed a current budget deficit together with a net borrowing situation, reflecting government expenditure continuing to exceed revenues. In the financial year 2008/09, the current budget was in deficit by £9.3 billion; this compares with a budget deficit of £7.1 billion in the same period of 2007/08. Public sector net borrowing in the financial year 2008/09 was £12.7 billion; this compares with net borrowing of £8.4 billion in the financial year 2007/08. Slower growth in current receipts was exceeded by a larger increase in current expenditure, particularly on capital projects, resulting in both a higher budget deficit and increased net borrowing.

The financial account shows that the issuance of both sterling treasury bills and government securities has financed this net borrowing. The latest quarter saw the outstanding amount of government securities at £496.7 billion and of Treasury bills at £17.6 billion.

Since net borrowing became positive in 2002, following the current budget moving from surplus into deficit, net debt as a proportion of annual GDP has risen steadily. Public sector net debt in May 2008 was 37.2 per cent of GDP, up from 36.5 in May 2007. In the financial year 2006/07, net debt as a percentage of GDP was 36.7 per cent.

## TRADE AND THE BALANCE OF PAYMENTS

### Current account deficit narrows; goods trade deficit narrows

The publication of the latest quarterly Balance of Payments figures shows that the current account deficit narrowed in 2008 quarter one to £8.4 billion, from a revised deficit of £12.2 billion in the previous quarter (Figure 14). As a proportion of GDP, the deficit fell to 2.4 per cent of GDP from 3.5 per cent in 2007 quarter four. The narrowing in the current account deficit in 2008 quarter one was due to a higher surplus on income, together with lower deficits on trade in goods and on current transfers, partially offset by a fall in the surplus on trade in services. The surplus on income increased by £2.2 billion to £9 billion. The deficit in current transfers narrowed to £3.9 billion, while the surplus on trade in services fell to £9.2 billion. The deficit on trade in goods fell by £1.4 billion to £22.7 billion.

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

The latest figures show a continuation in the goods trade deficit which was £22.7 billion in 2008 quarter one. In terms of growth, exports of goods grew by 0.8 per cent while goods imports fell by 2 per cent. Services exports grew by 0.4 per cent and services imports grew by 1.3 per cent. Over the quarter, total exports increased by 0.6

per cent. In contrast, total imports fell by 1.2 per cent.

Overall, the persistence of the current account deficit has led to a deterioration in the UK's international investment position with the rest of the world. The net asset/liability was negative to the tune of £329.0 billion at the end of the first quarter of 2008, compared with net external liabilities of £350.4 billion at the end of the previous quarter. UK assets abroad stood at £6797.0 billion compared to a level of £6486.5 billion at the end of the fourth quarter. UK liabilities stood at £7125.9 billion in the first quarter compared to a level of £6836.9 billion in the fourth quarter. The rise in the level of both UK assets and UK liabilities in the first quarter reflected net investments, the depreciation in the value of sterling and increases in the price of some debt securities.

External surveys on exports reported a subdued picture for the latest quarter. The BCC reported that the export sales net balance fell by six points to plus 16 – the lowest position since 2005 quarter four. The latest CBI quarterly survey also reported a weaker picture. The export orders balance was minus 12 in 2008 quarter one, deteriorating from minus four in the previous quarter. According to the latest figures in June, the export orders balance was at minus five.

According to the latest trade figures, in the three months ended April, the deficit on trade in goods and services narrowed to £12.4 billion, from a £14.1 billion deficit in the previous three months. In terms of growth, total volume exports grew by 1.3 per cent while total imports fell by 1.8 per cent in the three months to April.

## LABOUR MARKET

### Labour market activity buoyant but shows further signs of softening

The labour market in the latest reference showed further signs of softening but, overall, still painted a fairly buoyant picture – with relatively high levels of employment and low levels of unemployment seen throughout 2006 and in 2007. The weakening in certain indicators of the labour market in the latest period may reflect the lagged effect of the slowdown in the economy which began in



the third quarter of 2007, and which has quickened in the latest quarter, starting to feed through to the labour market.

The latest figures from the Labour Force Survey (LFS) pertain to the three-month period up to April 2008. On the upside, the number of people in employment rose but the employment rate was unchanged. The inactivity rate and the number of inactive people of working age both fell. The number of vacancies rose slightly. On the downside, the number of unemployed people, the unemployment rate and the claimant count all increased. Average earnings including bonuses fell, while the figure excluding bonuses increased. Overall, average earnings remain subdued with weak real wage growth.

Employment continues to proceed at record levels. The current working age employment rate was 74.9 per cent in the three months to April 2008, unchanged from the three months to January 2008 and up 0.5 percentage points from a year earlier. The number of people in employment rose by 76,000 compared with the previous quarter, to an employment level of 29.55 million – the highest since comparable records began in 1971. However, this compares with an increase of 117,000 in the three months to March, which may suggest a softening in employment growth. Unemployment levels, on the other hand, continued to see a steady increase from the previous month, which marked the first rise in the year. The number of unemployed people increased by 38,000 but was down 34,000 from a year earlier, leaving the unemployment level at 1.64 million in the three months to April 2008. The unemployment rate also increased, to 5.3 per cent, up 0.1 percentage point from the three months to January 2008, but down 0.2 percentage points from a year earlier (Figure 15).

Looking at a detailed level, the increase

in the employment level was mainly driven by employees and full-time employment, offset by a small decline in self employment. Employees rose by 66,000 while the self-employed decreased by 7,000. In terms of full- and part-time workers, the number of people in full-time employment rose by 80,000, while the number of people in part-time employment fell by 4,000.

## Workforce jobs increases

According to employer surveys, there was an increase of 44,000 jobs in the three months to March 2008. The largest quarterly contribution to the increase came from other services (up 27,000), followed by construction (up 11,000). This was offset by a decrease across a number of sectors, with the largest decrease being in business services and finance (down 20,000), followed by manufacturing (down 11,000). Over the year, total workforce jobs increased by 237,000. Of the total, the largest contribution to the increase over the year came from finance and business services (up 85,000), followed by distribution, hotels and restaurants (up 83,000). The manufacturing sector, in contrast, lost the largest number of jobs on the year (down 52,000).

## Claimant count level increases

The claimant count measures the number of people claiming Jobseeker's Allowance. The latest figures for May 2008 showed the claimant count level rose by 9,000 – the third consecutive monthly increase, though this is down 58,100 on a year earlier – to reach a level of 819,300. The claimant count rate in May 2008 was 2.5 per cent, unchanged from the previous month but down 0.2 percentage points from a year earlier.

## Vacancies rise

The number of vacancies created in the UK continued to show a healthy demand position for the economy. There were 678,600 job vacancies in the three months to May 2008, up 100 from the previous three months and up 35,200 from the same period a year earlier.

## Inactivity level falls

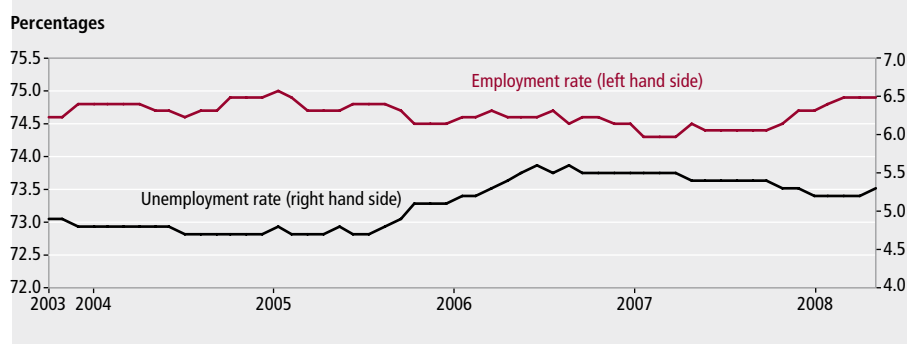
The working age inactivity rate was 20.8 per cent in the three months to April 2008, down 0.1 percentage point on the three months to January 2008 and down 0.4 percentage point from a year earlier. In level terms, the number of economically inactive people of working age was down 23,000 over the quarter, and by 107,000 over the year, to reach a level of 7.86 million in the three months to April 2008. Inactivity falls in level terms were recorded across most groups. The largest level fall in inactivity was recorded for those categorised as 'long-term sick' (down 27,000), followed by the 'retired' category (down 13,000). This was offset by increases in a couple of categories, with the largest increase in inactivity amongst the 'discouraged' category (up 7,000).

## Average earnings subdued

Growth in whole economy average earnings presented a mixed picture in the three months to April 2008, but overall remains relatively subdued. Average earnings including bonuses increased by 3.8 per cent in the three months to April 2008, down 0.2 percentage points from the previous month. Average earnings excluding bonuses rose by 3.9 per cent, up 0.1 percentage point from the previous month. In terms of the public and private sector split, the gap in average earnings (excluding bonuses) widened in April 2008. Public sector wage growth was 4.1 per cent, up 0.2 percentage points from the previous month. Private sector wages grew by 3.8 per cent, unchanged from the previous month.

Overall, the numbers still point to a fairly buoyant labour market, with employment at high levels and unemployment at a fairly stable level. However, the slowing economy may have started to impact on the labour market in terms of higher unemployment levels. Average earnings show stable but fairly modest growth, consistent with increased supply in the labour force.

**Figure 15**  
**Employment and unemployment**





## PRICES

## Producer output and input prices accelerate

Industrial input and output prices are an indication of inflationary pressures in the economy. During the first quarter of 2008, output prices exhibited further signs of an acceleration of growth from quarter four 2007 and therefore provided signs of continued inflationary pressures. Input prices also accelerated in the first quarter of 2008 compared with quarter four 2007. This suggests that firms were attempting to maintain their profit margins by passing on the higher costs of inputs to customers. However, the slower rate of growth of output inflation in the latest quarter compared to faster input price growth suggests that firms may have been tempered in part, in passing higher input price rises to customers. This in part could be due to spending pressures faced by households – with possible impact on firms profits.

Input prices on average rose by around 20 per cent in 2008 quarter one. This compares with around 11 per cent in 2007 quarter four. The core input price index, excluding food, beverages, tobacco and petroleum, rose by an average of around 9 per cent in 2008 quarter one (12 month non-seasonally adjusted growth), an acceleration from growth of around 3 per cent in the previous quarter. The sharp rise in input prices came mainly on the back of rising crude oil and home food materials prices. According to the latest monthly figures, the annual rate of input price inflation rose by 27.9 per cent in the 12 months to May 2008, up from 24.3 in April – driven by a 83.8 per cent increase in the price of crude oil on the year.

Output prices grew on average by around 6 per cent in 2008 quarter four, an acceleration from growth of around 4.5 per cent in the previous quarter. The underlying picture also suggests inflationary pressures.

On the core measure, which excludes food, beverages, tobacco and petroleum, producer output prices rose on average by around 3 per cent in 2008 quarter one, up from 2.3 per cent in the previous quarter. The main contributions to the increase in output prices were provided by rises in petroleum products and food prices. According to the latest monthly figures, annual output price inflation rose by 8.9 per cent in the 12 months to May, up from 7.6 per cent in April – mainly driven by petroleum products which rose 28.5 per cent on the year.

## Consumer prices accelerate and above target

Growth in the consumer prices index (CPI) – the Government's target measure of inflation – was 3.3 per cent in May 2008, an acceleration from 3 per cent in April and considerably above the Government's 2 per cent inflation target (Figure 16).

The largest upward pressure came from food and non-alcoholic beverages, mainly meat and vegetable prices which rose this year but fell a year ago. This effect was partially offset by fruit prices rising, though by less than a year ago.

There were further large upward pressures from: housing and household services due to gas and electricity bills, which were unchanged this year but fell a year ago; heating oil prices, which rose this year but fell a year ago in part reflecting the rise in the price of crude oil this year; and recreation and culture, from across a range of goods and services. The main upward pressures came from books, newspapers and stationery where prices rose by more than a year ago, and foreign holidays where prices rose this year but fell a year ago. The upward effects were partially offset by a

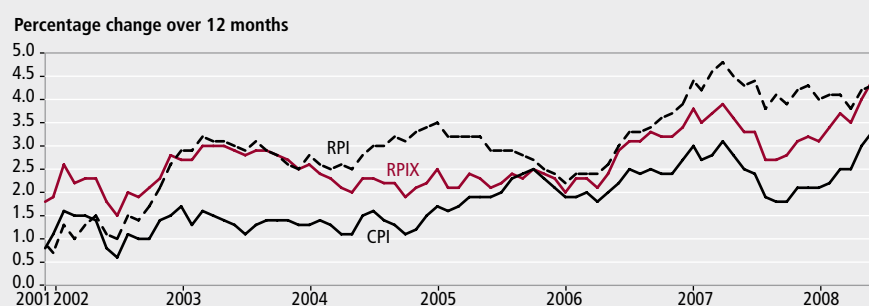
downward contribution from recording media, in particular pre-recorded DVDs.

Small upward effects came from: alcoholic beverages and tobacco, where prices of alcoholic drinks rose this year but fell a year ago, particularly the price of spirits; miscellaneous goods and services where prices rose this year, but fell a year ago; and furniture and household goods, with the largest effect coming from goods and services for routine household maintenance, which includes items such as household cleaning products and domestic services

Retail Prices Index (RPI) inflation rose to 4.3 per cent in May, up from 4.2 per cent in April. The main factors affecting the CPI also affected the RPI. Additionally, there was a large downward contribution from housing. The effect came mainly from mortgage interest payments as lenders passed on April's quarter point decrease in the bank rate and, to a lesser extent, from house depreciation.

RPIX inflation – the all items RPI excluding mortgage interest payments – was 4.4 per cent in May, up from 4.0 per cent in April.

Figure 16  
Inflation



# Independent forecasts

## June 2008

### 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 2008 and 2009 and are extracted from HM Treasury's Forecasts for the UK Economy.

#### 2008

	Average	Lowest	Highest
GDP growth (per cent)	1.7	0.7	2.1
Inflation rate (Q4, per cent)			
CPI	3.2	2.4	4.0
RPI	3.6	2.3	4.5
Claimant count (Q4, million)	0.88	0.76	1.00
Current account (£ billion)	-55.1	-71.0	-32.8
Public Sector Net Borrowing (2007-08, £ billion)	43.7	37.1	49.6

#### 2009

	Average	Lowest	Highest
GDP growth (per cent)	1.4	-1.9	2.7
Inflation rate (Q4, per cent)			
CPI	2.2	1.1	3.9
RPI	2.5	1.3	4.4
Claimant count (Q4, million)	0.99	0.71	1.31
Current account (£ billion)	-49.0	-83.9	-31.2
Public Sector Net Borrowing (2008-09, £ billion)	45.0	36.5	53.7

#### 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/economic\\_data\\_and\\_tools/data\\_index.cfm](http://www.hm-treasury.gov.uk/economic_data_and_tools/data_index.cfm)

### Selected world forecasts

The tables below supplement the Economic Review by providing a forward-looking view of the world economy. The tables show forecasts for a range of economic indicators taken from *Economic Outlook* (June 2008), published by OECD (Organisation for Economic Co-operation and Development).

#### 2008

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	1.2	1.7	1.7	1.8
Consumer price (percentage change from previous year)	3.2	0.9	3.4	3.0
Unemployment rate (per cent of the labour force)	5.4	3.8	7.2	5.7
Current account (as a percentage of GDP)	-5.0	4.4	0.1	-1.3
Fiscal balance (as a percentage of GDP)	-5.2	-1.6	-1.0	-2.8

#### 2009

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	1.1	1.5	1.4	1.7
Consumer price (percentage change from previous year)	2.0	0.4	2.4	2.1
Unemployment rate (per cent of the labour force)	6.1	3.8	7.4	6.0
Current account (as a percentage of GDP)	-4.4	4.4	0.0	-1.1
Fiscal balance (as a percentage of GDP)	-4.4	-2.5	-0.8	-2.5

#### Notes

The OECD *Economic Outlook* is published biannually. Further information about this publication can be found at [www.oecd.org/eco/Economic\\_Outlook](http://www.oecd.org/eco/Economic_Outlook)

# Key indicators

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

Seasonally adjusted unless otherwise stated									
	Source CDID	2006	2007	2007 Q3	2007 Q4	2008 Q1	2008 Mar	2008 Apr	2008 May
<b>GDP growth - chained volume measures (CVM)</b>									
Gross domestic product at market prices	ABMI	2.9	3.1	0.6	0.6	0.3	..	..	..
<b>Output growth - chained volume measures (CVM)</b>									
Gross value added (GVA) at basic prices	ABMM	3.0	3.0	0.5	0.6	0.3	..	..	..
Industrial production	CKYW	0.3	0.3	-0.3	0.2	-0.2	-0.4	0.2	..
Manufacturing	CKYY	1.6	0.6	-0.4	0.1	0.3	-0.5	0.2	..
Construction	GDQB	1.0	2.3	0.2	0.9	0.5	..	..	..
Services	GDQS	3.6	3.9	0.8	0.6	0.3	..	..	..
Oil and gas extraction	CKZO	-9.4	-2.4	-1.8	0.8	-3.6	0.4	-1.1	..
Electricity, gas and water supply	CKYZ	-2.0	0.1	0.8	2.9	-1.3	-1.0	1.7	..
Business services and finance	GDQN	5.4	5.3	1.2	0.4	0.2	..	..	..
<b>Household demand</b>									
Retail sales volume growth	EAPS	3.2	4.3	1.6	0.5	2.0	-0.3	-0.3	3.4
Household final consumption expenditure growth (CVM)	ABJR	1.9	3.1	0.9	0.4	1.1	..	..	..
GB new registrations of cars (thousands) <sup>1</sup>	BCGT	2,340	2,390	671	468	675	449	173	..
<b>Labour market<sup>2,3</sup></b>									
Employment: 16 and over (thousands)	MGRZ	29,027	29,233	29,262	29,421	29,538	29,554	..	..
Employment rate: working age (%)	MGSU	74.6	74.5	74.5	74.8	74.9	74.9	..	..
Workforce jobs (thousands)	DYDC	31,294	31,536	31,607	31,624	31,668	..	..	..
Total actual weekly hours of work: all workers (millions)	YBUS	928.6	936.3	938.9	937.0	948.4	943.7	..	..
Unemployment: 16 and over (thousands)	MGSC	1,671	1,652	1,656	1,599	1,612	1,643	..	..
Unemployment rate: 16 and over (%)	MGSX	5.4	5.4	5.4	5.2	5.2	5.3	..	..
Claimant count (thousands)	BCJD	944.7	863.3	845.8	816.1	796.5	799.1	810.3	819.3
Economically active: 16 and over (thousands)	MGSF	30,698	30,885	30,919	31,020	31,151	31,197	..	..
Economic activity rate: working age (%)	MGSO	78.9	78.9	78.9	79.0	79.1	79.2	..	..
Economically inactive: working age (thousands)	YBSN	7,861	7,946	7,953	7,911	7,878	7,859	..	..
Economic inactivity rate: working age (%)	YBTL	21.0	21.1	21.1	21.0	20.9	20.8	..	..
Vacancies (thousands)	AP2Y	597.1	655.9	666.0	675.6	691.2	691.2	685.3	678.6
Redundancies (thousands)	BEAO	139	128	133	111	111	110	..	..
<b>Productivity and earnings annual growth</b>									
GB average earnings (including bonuses) <sup>3</sup>	LNNC	..	..	4.1	3.8	4.0	4.0	3.8	..
GB average earnings (excluding bonuses) <sup>3</sup>	JQDY	..	..	3.7	3.7	3.8	3.8	3.9	..
Whole economy productivity (output per worker)	A4YN	..	..	2.3	1.7	..	..	..	..
Manufacturing productivity (output per job)	LOUV	..	..	..	..	..	2.8	2.7	..
Unit wage costs: whole economy	LOJE	..	..	1.8	2.7	..	..	..	..
Unit wage costs: manufacturing	LOJF	..	..	..	..	..	1.0	0.8	..
<b>Business demand</b>									
Business investment growth (CVM)	NPEL	-4.6	8.3	2.6	3.1	-1.8	..	..	..
<b>Government demand</b>									
Government final consumption expenditure growth	NMRY	1.7	1.9	0.3	0.2	0.9	..	..	..
<b>Prices (12-monthly percentage change – except oil prices)</b>									
Consumer prices index <sup>1</sup>	D7G7	2.3	2.3	1.8	2.1	2.4	2.5	3.0	3.3
Retail prices index <sup>1</sup>	CZBH	3.2	4.3	3.9	4.2	4.0	3.8	4.2	4.3
Retail prices index (excluding mortgage interest payments)	CDKQ	2.9	3.2	2.7	3.1	3.5	3.5	4.0	4.4
Producer output prices (excluding FBTP) <sup>4</sup>	EUAA	2.3	2.4	2.3	2.5	3.5	3.6	4.8	5.9
Producer input prices	EUAB	9.7	3.3	3.0	11.4	20.6	21.1	24.7	27.6
Oil price: sterling (£ per barrel)	ETXR	35.93	36.11	36.93	43.51	48.72	51.34	55.72	63.32
Oil price: dollars (\$ per barrel)	ETXQ	66.11	72.44	74.67	88.91	96.47	102.85	110.35	124.48

Seasonally adjusted unless otherwise stated									
	Source CDID	2006	2007	2007 Q3	2007 Q4	2008 Q1	2008 Mar	2008 Apr	2008 May
<b>Financial markets</b>									
Sterling ERI (January 2005=100)	BK67	101.2	103.5	104.1	101.2	95.5	94.4	92.6	92.7
Average exchange rate /US\$	AUSS	1.8429	2.0018	2.0211	2.0444	1.9789	2.0032	1.9817	1.9641
Average exchange rate /Euro	THAP	1.4670	1.4619	1.4705	1.4129	1.3212	1.2897	1.2580	1.2633
3-month inter-bank rate	HSAJ	5.26	5.95	6.18	5.95	5.95	5.95	5.76	5.80
Selected retail banks: base rate	ZCMG						5.25	5.00	5.00
3-month interest rate on US Treasury bills	LUST	4.89	3.29	3.62	3.29	1.36	1.36	1.44	1.83
<b>Trade and the balance of payments</b>									
UK balance on trade in goods (£m)	BOKI	-77,555	-89,515	-23,618	-24,143	-22,720	-7,147	-7,594	..
Exports of services (£m)	IKBB	127,157	139,156	35,160	35,342	36,194	12,052	11,990	..
Non-EU balance on trade in goods (£m)	LGDT	-45,468	-47,691	-12,988	-13,121	-12,111	-3,771	-4,185	..
Non-EU exports of goods (excl oil & erratics) <sup>5</sup>	SHDJ	118.0	116.5	119.2	116.0	122.7	123.1	123.4	..
Non-EU imports of goods (excl oil & erratics) <sup>5</sup>	SHED	124.5	131.6	134.9	134.4	131.0	131.9	129.3	..
Non-EU import and price index (excl oil) <sup>5</sup>	LKWQ	103.9	104.2	103.5	104.1	109.6	110.4	112.1	..
Non-EU export and price index (excl oil) <sup>5</sup>	LKVX	101.5	102.5	102.2	104.0	106.6	106.9	107.8	..
<b>Monetary conditions/government finances</b>									
Narrow money: notes and coin (year on year percentage growth) <sup>6</sup>	VQUU	5.1	5.8	5.4	5.8	6.7	6.7	6.7	..
M4 (year on year percentage growth)	VQJW	12.9	12.8	12.9	12.4	11.7	11.7	10.9	10.0
Public sector net borrowing (£m)	-ANNX	29,161	36,327	6,708	17,143	-3,960	10,215	1,773	10,955
Net lending to consumers (£m)	RLMH	13,253	12,939	3,790	3,359	4,435	1,270	1,122	1,376

## External indicators – non-ONS statistics

		2007 Nov	2007 Dec	2008 Jan	2007 Feb	2008 Mar	2008 Apr	2008 May	2008 Jun
<b>Activity and expectations</b>									
CBI output expectations balance	ETCU	9	3	9	11	18	0	0	2
CBI optimism balance	ETBV			-18			-23		
CBI price expectations balance	ETDQ	23	17	14	19	21	23	28	..

### Notes:

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 Volumes, 2003 = 100.

6 Replacement for series M0 which has ceased publication.

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

## FEATURE

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# Employment of foreign workers in the United Kingdom: 1997 to 2008

## SUMMARY

The Labour Force Survey (LFS) is the source for estimates of migrant workers in the UK economy. This article presents the most up-to-date LFS figures using the population estimates published in 2007. It updates figures for 1997 that have previously been released into the public domain, and also provides the most recent estimates. Given the recent public interest in the topic, this article seeks to ensure greater clarity and timeliness of migrant worker reporting from the LFS in the future, in line with the recommendations of the Inter-departmental Task Force on migration statistics (2006). It reviews the ways in which the LFS can provide migrant worker figures, and presents the new Office for National Statistics standard definition for migrant workers.

By using the new definitions – of people born abroad aged 16 and over for employment levels, and people born abroad of working age for employment rates – migrant worker estimates will be consistent with the definitions used for the headline figures in the Labour Market Statistics First Release.

This article concentrates on the growth of employment for specific country groups in comparison with the UK born population, and describes how migrant employment varies by industry, occupation and education. While estimates presented in this article use the most up-to-date figures, the Office for National Statistics (ONS) recognises the limitations of using the Labour Force Survey (LFS) to calculate the numbers of migrant workers in the UK (see technical note).

People come to the UK for a variety of reasons other than work, for example, study, holidays, and asylum or family ties (including children who come with their parents). However, when the intention is to work, economic factors will have a strong influence on the decision to migrate. For example, the rewards from migrating for work may be greater than those that can be obtained domestically. The attractiveness of coming to work in the UK (and any subsequent decision to return home) will vary according to the supply and demand of labour in the UK and the domestic country, as well as economic fluctuations, for example, in exchange rates.

To understand how the decision to migrate impacts on UK employment levels, it is necessary to be familiar with the

different approaches to calculating figures for migrant workers. This article helps familiarise readers with migrant worker concepts by:

- explaining the new standard definition for migrant workers, and how it differs from alternative options for producing estimates
- presenting analyses of employment levels and rates since 1997 for different groups of workers according to their country of birth
- analysing sampling variability on estimates of the number of migrant workers, and
- comparing the education, industry and occupation of UK born workers with those from different countries

It also provides an example of the impact of using the revised LFS figures (after the latest reweighting) on the UK and non-UK born employment levels, before describing how migrant workers can be classified by the LFS. A summary of key findings is presented in **Box 1**.

## Using the latest population estimates

On 14 May 2008, LFS microdata weighted to the latest population estimates (published in August 2007) were made available for all calendar quarters back to 1992. The impact of reweighting the microdata on labour market headline estimates is described by Hughes and Palmer (2008). The reweighting exercise means that both the LFS microdata and aggregates are weighted to the most accurate population estimates at the time



**Box 1****Summary of key findings**

Key figures presented are:

- the number of non-UK born workers in January to March 2008 is 3.7 million, 12.5 per cent of total UK employment
- in January to March 2008, people born in Europe made up the largest number of non-UK born workers in the UK. This group comprises people born in the notional European Union 14 (EU14) group (0.7 million), the eight countries that joined the EU in 2004 (0.5 million) and all other European countries (0.2 million) (see technical note on EU accession)
- since January to March 1997, the increase in UK born workers has been 1.4 million and the increase in non-UK born workers has been 1.8 million, or 45 per cent and 55 per cent of the total increase, respectively

**Table 1****People in employment of working age:<sup>1</sup> by country of birth,<sup>2</sup> April to June**

	Millions and percentages					
	UK born		Non-UK born		Total <sup>3</sup>	
	Before reweighting	After reweighting	Before reweighting	After reweighting	Before reweighting	After reweighting
1997	23.6	23.7	1.9	1.9	25.5	25.6
2007	23.9	24.5	3.3	3.4	27.2	27.9
Growth in employment levels	0.3	0.8	1.4	1.5	1.7	2.3
Percentage of total change <sup>4</sup>	18	35	81	64		

**Notes:**

Source: Labour Force Survey

- 1 Working age is 16 to 59 for females and 16 to 64 for males.
- 2 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, excludes people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).
- 3 Totals include those employed but did not state country of birth.
- 4 Change does not sum to 100 because of those who did not state their country of birth.

of writing.

Previous estimates of migrant workers have been weighted to population estimates from 2003 because analysis of migrant workers required the use of the detailed LFS microdata. As a result, all estimates of foreign workers will have changed because they are now based on the latest population estimates. In addition, these earlier estimates used the working age population to define the levels of migrant workers, whereas the new standard will be based on the population aged 16 and over.

**Table 1** shows the figures for the working age population in employment by country of birth for the quarter April to June 1997 and April to June 2007. (This quarter is used because the January to March 1997 quarter is not available using 2003 weights). These estimates of employment levels are consistent with the old definition for migrant workers (people of working age), and show the impact of the latest reweighting. The table shows that the

estimate of the growth in non-UK born workers over the period has increased from 1.4 million to 1.5 million, and for UK born workers from 0.3 million to 0.8 million. The estimate of the percentage of the total change in employment attributable to UK born workers of working age has therefore been revised from 18 per cent to 35 per cent as a result of reweighting the LFS microdata.

**Defining foreign workers**

From 20 May 2008, ONS has presented information on migrant workers that is consistent with the definitions used in wider labour market publications. For employment levels this means that the population aged 16 and over will be used, rather than the population of working age (defined as 16 to 64 for males, and 16 to 59 for females). For employment rates, the population of working age will continue to be used. ONS will continue to use country of birth to determine a person's status as a

migrant worker. Alternative definitions of migrant worker status are described in this section.

Since 1997, employment levels and rates have risen for both UK and non-UK born people irrespective of the definition used. However, under the 'aged 16 and over' definition, the difference between the increases in UK born and non-UK born employment levels is smaller than under the 'working age' definition. This is because the new definition shows a greater increase in UK born employment levels. This is attributed to larger numbers of UK born people still working past state pension age who are included under the new definition, but not the old.

**Country of birth versus nationality**

The migrant population of the UK can be described in a number of ways. For example, migrant status can be determined on the basis of a person's country of birth, nationality (according to citizenship) or how recently they arrived. This can be complex. For example, a person born in France could hold a British passport (through family) and therefore, depending on the definition used, may be categorised as a UK or non-UK employee. In addition, their current stay may be their first or one of many.

ONS has preferred to define migrant workers to the UK by country of birth because this cannot change, whereas citizenship can change over time. In addition, the country of birth definition allows investigation using the 'year of arrival' question in the LFS. This question can be used to investigate the length of time a migrant worker has been in the UK, although the LFS cannot be used to distinguish accurately between short- and long-term migrants (see **Box 2** and technical note).

The country of birth rule is not without problems because a number of people classified as foreign born were either British at birth, or have subsequently acquired citizenship. Others may consider themselves British, irrespective of their citizenship, or hold dual nationality. However, the country of birth gives an indication of the country of origin and the background of the worker. The nationality of long-term migrants is also likely to differ from short-term migrants (see **Box 2**) because they are more likely to apply for, and receive, British citizenship. However, work may be the primary reason that both short- and long-term migrants enter the UK.

**Box 2****United Nations definition of migrants****Long-term international migrant**

The United Nations recommended definition of a long-term international migrant is:

a person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence. From the perspective of the country of departure, the person will be a long-term emigrant, and from that of the country of arrival, the person will be a long-term immigrant.

This 12-month migrant definition is used for the UK usually resident population estimate series.

**Short-term international migrant**

The United Nations recommended definition of a short-term international migrant is:

a person who moves to a country other than that of his or her usual residence for a period of at least three months but less than a year (12 months), except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage. For purposes of international migration statistics, the country of usual residence of short-term migrants is considered to be the country of destination during the period they spend in it.

UK population estimates do not currently include short-term in-migrants as usually resident in the UK, nor do they exclude short-term out-migrants from the usually resident population.

**Working age versus 16 and over**

An added area of potential confusion is whether figures are presented for all workers (normally 16 years of age and over) or for those of working age (males 16 to 64, females 16 to 59). Previously, the standard presentation of non-UK born workers was defined by the population of working age in employment. This definition was used for both the number of workers and the employment rate.

This article presents employment levels according to the new standard (workers aged 16 and over), which corresponds with the definition used for the headline employment levels published in the Labour Market Statistics First Release. For the employment rate, figures are presented for those persons of working age; again this is consistent with the headline employment rate definition used in the Labour Market Statistics First Release.

By presenting the levels of employment figures under the new definition, a more complete picture of employment in the UK is provided because all workers in the economy are captured. The previous method under-represented the number of UK and foreign born people in employment because male workers above 64 and female workers above 59 were excluded.

**Table 2****Comparison of employment levels for people aged 16 and over, and of working age:<sup>1</sup> by country of birth<sup>2</sup> and nationality<sup>3</sup>**

					Millions and percentages (not seasonally adjusted)			
Nationality aged 16 and over					Nationality working age			
	UK	Non-UK	Total	Percentage of total difference <sup>4</sup>	UK	Non-UK	Total	Percentage of total difference <sup>4</sup>
<b>Three months January to March 1997</b>								
Country of birth								
UK born	24.3	0.0	24.3	–	23.6	0.0	23.6	–
Non-UK born	1.0	0.9	1.9	–	1.0	0.9	1.9	–
Total	25.3	0.9	26.2	–	24.6	0.9	25.5	–
<b>Three months January to March 2008</b>								
Country of birth								
UK born	25.7	0.0	25.8	–	24.5	0.0	24.5	–
Non-UK born	1.4	2.3	3.7	–	1.4	2.2	3.6	–
Total	27.1	2.3	29.4	–	25.9	2.3	28.1	–
<b>Difference in employment levels between above two periods</b>								
Country of birth								
UK born	1.4	0.0	1.4	45	0.9	0.0	1.0	36
Non-UK born	0.4	1.3	1.8	55	0.4	1.3	1.7	64
Total	1.8	1.4	3.2		1.3	1.3	2.7	
Percentage of total difference	57	43			49	50		

**Notes:**

Source: Labour Force Survey

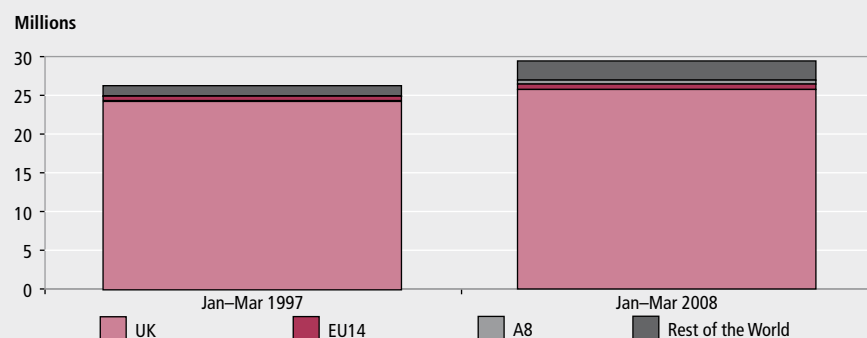
1 Working age is 16 to 59 for females and 16 to 64 for males.

2 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).

3 The figures presented are weighted to population estimates published in 2007.

– indicates an empty cell because the calculation is not relevant.

Figure 1

**Employment levels: by country of birth, 1997 and 2008**

In common with labour market statistics more generally, ONS will continue to use working age for the employment rate because its purpose is to measure the economy's success in providing employment for those seeking work. Since the majority of people above working age are retired and therefore not looking for work, including them in the rate would present an artificial picture.

Figures will still be available for the population of working age definition, and according to nationality as opposed to country of birth. Comparisons of both definitions, and using nationality, are included in this article (see **Table 2**).

**UK and non-UK employment**

Table 2 shows the revised estimates of the employment levels and growth in employment since 1997 based on reweighted LFS microdata. It shows that, on the new definition (country of birth for people aged 16 and over), the number of migrant workers in January to March 2008 was 3.7 million. It also shows that the increase in employment since 1997 attributable to UK born workers is 1.4 million, or 45 per cent of the total increase.

Table 2 also gives sufficient information for users to calculate migrant worker estimates based on a variety of definitions, including by nationality and working age.

**Using employment to estimate new jobs**

The primary purpose of the LFS is to calculate economic (in)activity (including levels and rates of employment). The Workforce Jobs Survey (WFJ) is the preferred source for the number of jobs in the UK economy. The number of people employed and the number of jobs are conceptually different. The simplest example of this is that a person can hold two jobs. Neither source can provide an explicit estimate of the number of new jobs

created in the UK economy. Furthermore, the WFJ does not collect information from employers on nationality or country of birth.

Therefore, the LFS is best placed to provide answers to questions relating to migrant employment. Table 2 provides the change in employment between the 1997 and 2008 January to March quarter for UK and non-UK born workers. Under the new definition, the total increase in employment is 3.2 million, of which 45 per cent reflects an increase in UK born employment and 55 per cent an increase in non-UK born employment. The importance of how employment levels are defined is made clear when these percentages are compared with the equivalent percentages using nationality for UK born (57 per cent) and non-UK born (43 per cent) employment.

**Time series analysis by country groups**

When interpreting time series figures, notable events that have influenced the migrant labour market in the UK should be kept in mind. Examples include: developments to the Single European Market which increase flexibility within the European labour market; the performance of the world and European Union (EU) economy relative to the UK which creates push and pull factors for potential migrant workers; and political events like EU accession which have economic consequences.

Accession to the EU is the most easily recognisable factor because it can be so clearly defined in time. Until 2004 the EU consisted of 15 member states (see technical note); however, in this article, the UK is kept separate, creating a notional EU14 group. In 2004, a further ten states joined; however, the close links that Cyprus and Malta have with other EU member states mean that, for the purposes of this analysis, a group of eight accession countries (A8) is used (see technical note).

**Employment levels**

Employment levels are influenced by both supply- and demand-side factors such as population changes and demand for labour. Levels should be analysed along with the (un)employment rate. This is because both of these indicators will be affected by the performance of the economy, which will obviously influence labour demand. While labour demand can increase both the levels and rate of employment, supply factors can cause a decline in levels for one group of workers as they are replaced in employment by another group. Other factors causing a decline include the migrant population returning to their country of birth and the inflow of the migrant population not being at the same rate as the resident migrants who are retiring.

Table 2 shows that non-UK born employment levels have increased from 1.9 million in January to March 1997, to 3.7 million in January to March 2008. The 1997 and latest employment levels for those born in the UK, EU14, A8 and the 'Rest of the World' are presented in **Figure 1**. It can be seen that the total increase in employment is from 26.2 million to 29.4 million. The numbers of A8 born employment in 1997 are too low to be depicted. In January to March 1997, UK born employment accounted for 92.7 per cent of total employment, and non-UK born for 7.3 per cent. In January to March 2008, UK born employment accounted for 87.5 per cent of total employment, while non-UK born accounted for 12.5 per cent.

The main contributor to non-UK born employment growth since 2004 is the increase in A8 employment levels. Between April to June 2004 and April to June 2007, a fivefold increase in A8 levels took place and can be followed in the detailed Table A1 in the Appendix.

**Table 3** shows employment levels for broad country of birth groups (EU14, A8 and non-UK born). All groups show an increase, although this conceals various differences in labour market outcomes for people born in specific countries. For example, the LFS figures for Irish born people working in the UK show a decline that is hidden within the flat EU14 levels; compare EU14 estimates in Table 3 with Figure 2. This trend has taken place at the same time as the Irish economy has performed well against output, productivity and employment indicators (see Aiginger 2004).

**Table 3**  
**Levels<sup>1</sup> and rates<sup>2</sup> of employment: by country of birth<sup>3</sup>**

	Thousands and percentages, not seasonally adjusted											
	Total <sup>4</sup>		UK		Non-UK <sup>4</sup>		EU14		A8		Rest of the World	
	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates
Jan–Mar 1997	26,245	72.2	24,323	73.1	1,921	62.5	565	67.6	26	65.3	1,330	60.6
Jan–Mar 1998	26,546	72.8	24,505	73.7	2,041	63.7	592	68.5	33	63.1	1,415	61.9
Jan–Mar 1999	26,909	73.5	24,777	74.4	2,130	64.0	634	70.9	31	65.6	1,466	61.5
Jan–Mar 2000	27,239	73.8	25,102	74.9	2,135	63.2	599	69.3	45	71.6	1,491	60.9
Jan–Mar 2001	27,505	74.2	25,229	75.2	2,272	64.4	633	74.0	37	56.4	1,602	61.6
Jan–Mar 2002	27,675	74.0	25,313	75.1	2,360	63.9	617	72.2	45	60.4	1,699	61.5
Jan–Mar 2003	27,970	74.3	25,445	75.4	2,524	64.2	648	72.9	49	58.3	1,826	61.9
Jan–Mar 2004	28,331	74.6	25,742	75.7	2,589	65.0	619	70.2	63	63.8	1,906	63.6
Jan–Mar 2005	28,641	74.6	25,814	75.6	2,826	66.7	627	73.6	117	74.2	2,082	64.5
Jan–Mar 2006	28,869	74.4	25,767	75.4	3,100	67.4	635	75.2	254	82.7	2,210	64.1
Jan–Mar 2007	28,978	74.1	25,622	75.1	3,350	67.2	655	75.2	377	80.8	2,318	63.5
Jan–Mar 2008	29,438	74.6	25,755	75.5	3,682	69.3	698	76.5	510	82.8	2,474	65.3

**Notes:**

Source: Labour Force Survey

1 Levels of employment are provided for the population aged 16 and over.

2 Employment rates are provided for the working age population currently defined as 16 to 59 for females and 16 to 64 for males.

3 The figures presented are weighted to the population estimates published in 2007.

4 Totals include Rest of the World, and those people who did not state their country of birth. Non-UK does not include those who did not state their country of birth.

**Employment rate**

Table 3 shows the employment rates for the January to March quarter from 1997 to 2008. The UK employment rate rises from 73 per cent in 1997 to remain between 75 and 76 per cent after 2000. Both the EU14 and A8 groupings depict more noticeable increases after 1997. The EU14 employment rate levels off similarly to the UK, but the A8 employment rate increased rapidly over the period and established a 7 percentage point gap over the UK in January to March 2008.

More detail on the non-UK born employment rates can be found in the Appendix. However, from Table 3, it can be seen overall that the non-UK born rate has increased over the period presented. The gap between the UK rate and non-UK rate highlights the differing economic participation rates of women from certain cultures. The detailed table in the Appendix shows that Pakistani and Bangladeshi born people have the lowest employment rates, although they have increased over the period. The increase in the employment rates of people born in Pakistan and Bangladesh along with the higher A8 employment rate has closed the UK to non-UK gap from 10 to 7 percentage points.

To increase the accessibility of LFS migrant worker figures, a version of Table 3 will be published on a quarterly basis in conjunction with other migration statistics.

**LFS estimates with confidence intervals**

Like all survey estimates, those in Table 3 are subject to sampling errors. **Table 4** shows the 95 per cent confidence intervals

for a range of estimates of country of birth categories. These are provided because understanding the statistical robustness of migrant worker estimates is important in determining the validity of any conclusions reached. The sampling errors presented in Table 4 demonstrate that some of the differences in quarterly estimates from Appendix Table A1 are not statistically significant at the 95 per cent level.

For example, South African born workers have an employment level estimate of 132,000 in January to March 2007. The 95 per cent confidence interval for this period is  $\pm 21,000$ . The estimate for the following quarter, April to June 2007, is 143,000, with a 95 per cent confidence interval of  $\pm 22,000$ . From these figures it can be seen that the confidence intervals overlap, and therefore this is an example where, at the 95 per cent level, the difference in the estimates is not statistically significant. The 95 per cent confidence intervals presented in Table 4 can be used to evaluate changes in the estimates of employment.

**Figure 2** shows how the confidence intervals presented in Table 4 can be used to support the statement made that the number of Irish born workers has declined over the period 2000 to 2007. This is because the confidence intervals (represented by the thin vertical lines) for 2000 and 2007 do not overlap each other. Although confidence intervals are not available at present for 1997, estimates of the sampling errors suggest they would support this statement as well. Therefore, it can be said that, at the 95 per cent level, there has been a fall in Irish born

employment levels in the UK.

**Characteristics of UK born and foreign born workers****Industry and occupation**

In **Table 5**, the four-quarterly averages from the LFS show that the main sectors for employment of UK and other non-UK born workers were similar in 2007; the top three sectors for both being: Public administration, education and health; Distribution, hotels and restaurants; and Business services. The notable differences are between the A8 countries and other non-UK born employed. A8 migrant workers are concentrated in Manufacturing and in Distribution, hotels and restaurants, while other non-UK born workers are spread across Business services and Public administration, education and health, in addition to the main two sectors where A8 born are concentrated.

This pattern of A8 employment makes sense because new entrants to the UK labour market will find it easier to obtain employment in Distribution, hotels and restaurants, and in Manufacturing without high levels of training.

Analysing the country of birth figures by occupation (**Table 6**) provides an indication of the areas of work in which A8 migrants are most successful at gaining employment. When compared with education attainment, it also provides an insight into the extent to which migrants use their skills. The distribution of the occupational categories shows how A8 workers have been attracted to Elementary occupations (36 per cent of all A8 workers) and Process, plant and machinery operatives (21 per cent), which



Table 4

**95 per cent confidence intervals for employment levels<sup>1</sup> and rates:<sup>2</sup> by selected country of birth groups<sup>3</sup>**

		Thousands and percentages							
		2007							
Country of birth <sup>4</sup>		Jan-Mar		Apr-Jun		Jul-Sep		Oct-Dec	
		95 per cent confidence intervals		95 per cent confidence intervals		95 per cent confidence intervals		95 per cent confidence intervals	
		Level and rate		Level and rate		Level and rate		Level and rate	
Total	Employment level	28,978	±140	29,100	±140	29,382	±139	29,488	±140
	Employment rate	74.1	±0.4	74.3	±0.4	74.8	±0.3	75.0	±0.4
UK born	Employment level	25,622	±158	25,616	±159	25,825	±159	25,878	±160
	Employment rate	75.1	±0.4	75.3	±0.4	75.8	±0.4	76.0	±0.4
Non-UK born	Employment level	3,350	±95	3,474	±100	3,549	±100	3,607	±101
	Employment rate	67.2	±1.1	68.0	±1.1	68.9	±1.1	68.7	±1.1
A8	Employment level	377	±45	445	±53	442	±49	486	±51
	Employment rate	81	±3	82	±3	83	±3	84	±3
South Africa	Employment level	132	±21	143	±22	136	±21	139	±21
	Employment rate	82	±5	84	±5	85	±4	82	±5
Australia and New Zealand	Employment level	127	±19	140	±20	135	±20	135	±21
	Employment rate	82	±5	85	±4	87	±4	85	±4
EU14	Employment level	655	±42	678	±42	680	±42	671	±42
	Employment rate	75	±2	74	±2	75	±2	75	±2
India	Employment level	324	±33	313	±34	302	±33	316	±34
	Employment rate	69	±3	71	±4	69	±4	69	±4
Pakistan	Employment level	149	±23	153	±22	167	±22	160	±22
	Employment rate	49	±5	50	±4	47	±4	47	±4
Bangladesh	Employment level	93	±18	79	±16	85	±19	72	±18
	Employment rate	48	±5	45	±6	49	±6	45	±6
Africa exc. South Africa	Employment level	531	±40	525	±40	555	±41	565	±42
	Employment rate	65	±3	65	±3	67	±3	67	±3
Americas	Employment level	333	±30	345	±32	372	±34	354	±33
	Employment rate	68	±3	70	±3	72	±3	71	±4
Middle East and Asia	Employment level	427	±37	445	±38	472	±39	483	±41
	Employment rate	57	±3	58	±3	63	±3	60	±3
Total	Employment level	28,978	±140	29,100	±140	29,382	±139	29,488	±140
	Employment rate	74	±0	74	±0	75	±0	75	±0

**Notes:**

Source: Labour Force Survey

1 Levels of employment are provided for the population aged 16 and over.

2 Employment rates are provided for the working age population currently defined as 16 to 59 for females and 16 to 64 for males.

3 The figures presented are weighted to population estimates published in 2007.

4 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).

is in keeping with the assumption made in the industry analysis that A8 workers are finding employment where low levels of training are required.

The patterns of employment by occupation for non-UK born (not shown in Table 6) are similar to those of the UK. This is likely to be because the country of birth variable includes those who have been in the UK for some time and therefore may have become similar in terms of experience in the labour market to UK born workers. Also, because the non-UK born

category includes several country groups that have similar educational and cultural expectations; for example, the EU14 and Americas groups have employment rates comparable to the UK.

#### Employment rate by education and inactivity

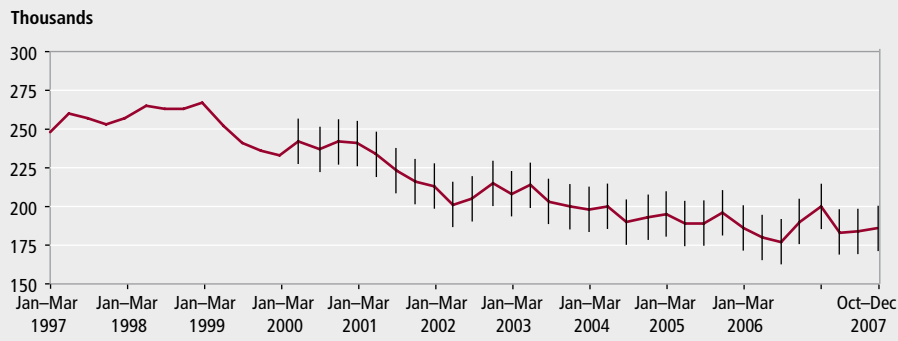
In **Figure 3**, the UK born employment rate is higher than the non-UK born employment rate across all levels of education. The largest gap in employment rate is at GCE A level or equivalent and the

smallest gap is in the Other qualifications category. However, for three of the six categories, A8 workers have the highest employment rate by qualification.

Both the UK and non-UK born employment rates increase as the level of education increases. This supports the statement that investment in human capital increases the likelihood of a person being employed. However, the Other qualification category is higher than both the GCE A level or equivalent and GCSE grades A\* to C or equivalent for non-UK born. A similar



**Figure 2**  
Irish born<sup>1</sup> in employment<sup>2</sup> aged 16 and over, showing confidence intervals<sup>3</sup>



**Notes:**

Source: Labour Force Survey

- 1 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).
- 2 The figures presented are weighted to the population estimates published in 2007. The figures are not seasonally adjusted.
- 3 These are not presented before April to June 2000 because a key variable in their calculation is not available.

**Table 5**

**Percentages (and rank) working in each industrial sector aged 16 and over: by country of birth,<sup>1</sup> 2007<sup>2,3</sup>**

Industrial sector	Percentages and rank					
	UK born		A8 born		Other non-UK born	
	Percentage	Rank	Percentage	Rank	Percentage	Rank
Agriculture and fishing	1	8	2	8	*	9
Energy and water	1	9	*	9	1	8
Manufacturing	13	4	27	1	10	4
Construction	9	5	12	3	4	7
Distribution, hotels and restaurants	19	2	22	2	20	3
Transport and communication	7	6	11	5	8	5
Business services	16	3	11	4	21	2
Public administration, education and health	28	1	9	6	29	1
Other services	6	7	6	7	6	6
<b>Total</b>	<b>100</b>		<b>100</b>		<b>100</b>	

**Notes:**

Source: Labour Force Survey

- 1 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).
  - 2 The figures presented are weighted to the population estimates published in 2007. Figures are not seasonally adjusted.
  - 3 A four-quarterly average is used, LFS quarters Jan-Mar to Oct-Dec 2007. Totals may not sum due to rounding.
- \* Less than 0.5 per cent.

**Table 6**

**Percentages<sup>1</sup> of UK and A8 born: by occupational group<sup>2</sup> for country of birth,<sup>3</sup> 2007<sup>4,5</sup>**

	Percentages							
	Managers and senior officials	Professional occupations	Associate professional and technical	Administrative and secretarial	Skilled trades occupations	Personal service occupations	Sales and customer service occupations	Process, plant and machine operatives
UK born	15	13	14	12	12	8	8	7
A8	3	4	5	4	17	7	3	21

**Notes:**

Source: Labour Force Survey

- 1 Percentage in employment is provided for the population aged 16 and over.
- 2 Excludes missing responses from the four-quarterly average calculations.
- 3 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).
- 4 The figures presented are weighted to the population estimates published in 2007. The figures are not seasonally adjusted.
- 5 A four-quarterly average is used from Jan-Mar 2007 to Oct-Dec 2007.

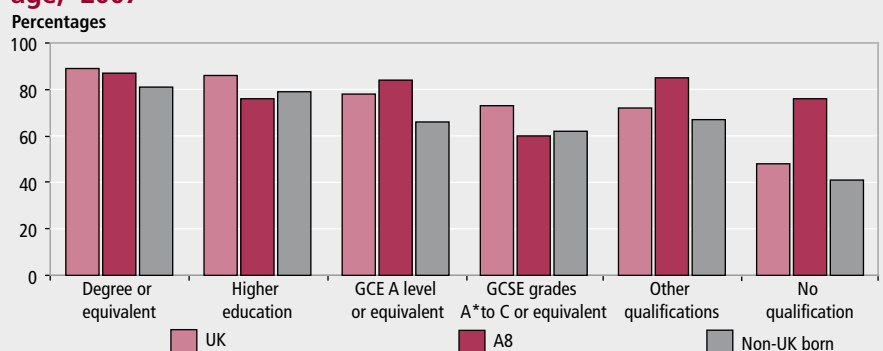
result is shown for the A8 countries, where the GCE A level or equivalent and Other qualification employment rate are almost as high as the degree employment rate.

These results are partly explained by the way the qualification question is coded. For all non-UK born, responses can be entered in Other qualifications because of the difficulty in matching to UK qualifications. This includes foreign degrees, and therefore the employment rate for this category could be artificially inflated. Certain specialist work qualifications can also be coded in Other qualifications, which could also increase the employment rate since migrants with work specific qualifications are more likely to find employment.

The UK versus non-UK born employment comparisons in this article hide a great disparity in inactivity rates across the country groupings contained in Table 3. The inactivity rates contained in Figure 4 begin to demonstrate some disparities. This can be seen where those born in the Rest of Asia have lower inactivity rates than those born in the Middle East. The variation in inactivity rates across these country groupings suggests a large number of factors influencing labour market outcomes for people of different countries of birth.

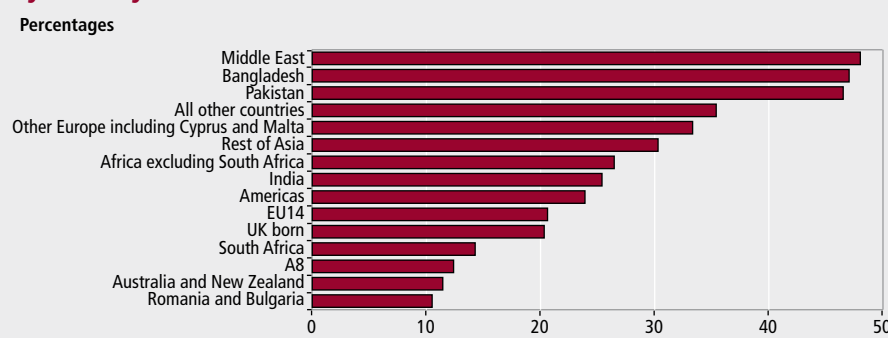
A more complete picture is obtained when inactivity rates are compared with employment levels and rates. In Figure 4, Middle East, Pakistani and Bangladeshi born groups have the highest inactivity rates. For those born in Pakistan and Bangladesh, this finding corresponds with the lower employment rates presented in Appendix Table A1 (Middle East born are grouped with the Asian born here). The A8 born group has increasing growth in employment levels, corresponding with low inactivity rates. People born in Romania and Bulgaria are grouped with Other Europe in Table A1; however, using the information provided by Figure 4, it can be

Figure 3

**Employment rate: by highest educational qualification for working age,<sup>1</sup> 2007<sup>2,3,4</sup>****Notes:**

- 1 Employment rate is provided for the population of working age.
- 2 The figures presented are weighted to the population estimates published in 2007. The figures are not seasonally adjusted.
- 3 A four-quarter average is used from Jan–Mar 2007 to Oct–Dec 2007
- 4 Figures exclude missing responses from the four-quarter average calculations.

Figure 4

**Proportion of working age population that are economically inactive: by country of birth, October to December 2007**

seen that people born in these two countries are likely to increase the Other Europe employment rate.

**Country of birth analysis by year of arrival**

The estimates of A8 born employment that migrated before 1996 shown in **Table 7** are low. Given the likely margins of error for these estimates, these figures become less reliable. The most robust conclusion that can be drawn from this period for A8 migrants is that the numbers of A8 migrants in employment were extremely low in comparison with estimates of Other non-UK born migrants.

However, these low figures do emphasise for the A8 countries the magnitude of the increase in stocks and flows after 2004. Of the 486,000 A8 born workers in employment in October to December 2007, 392,000 arrived in the UK in the last three years. Across all three periods, the largest educational group for A8 born workers is Other qualifications. As discussed when comparing education to employment rate, the Other qualification category captures some educational attainment that

might match any of the other four named categories in **Table 7**. The A8 born labour supply includes a higher proportion of people working with no qualifications compared with those born in the EU14. This corresponds with the conclusions drawn about the industries and occupations in which A8 workers are employed.

The workers born in the EU14 countries present a different distribution of arrival in the UK to A8 born workers. The majority of EU14 workers had already arrived before 1996 (405,000 of the 671,000). Throughout all the time periods presented, a degree (or equivalent) is one of the largest qualification groups for EU14 employees. It can also be seen that highly educated people (Higher education below degree level and Degree or equivalent) play an important role in the composition of the Other non-UK born group. The two categories account for 39 per cent of the Other non-UK migrant labour force across the entire period. This is likely to indicate that a higher-qualified person born in the EU14 or Other non-UK category is more flexible (able to migrate), and with this greater mobility can seek out higher returns to the investment they have

made in their education.

The analysis of occupation by year of arrival shows similar patterns to the point in time analysis in **Table 6**. Workers born in the EU14 are predominately employed in the categories Managers and senior officials, Professional occupations, or Associate professional and technical (57 per cent across the entire period). **Table 8** shows an important change in the distribution of occupations for A8 migrants arriving from 2004 onwards. Before accession, there appears to be a more even distribution of occupations, while following accession, 64 per cent of A8 workers were employed in the Elementary or in Process, plant and machine operatives categories of occupation. However, caution should be exercised when acting on this conclusion because of the small numbers in the earlier periods.

**Further work**

Using the new standard definition for employment levels (population aged 16 and over), this article has shown that the number of non-UK born workers has almost doubled over the period discussed (1.9 million to 3.7 million). There has been a significant shift in the composition of the migrant workforce, with A8 born workers overtaking those born in India, the Americas, Australia and New Zealand among others. This article has briefly commented on the differences in the characteristics of the workers from different backgrounds. It has noted that, even within Europe, different employment outcomes exist. The work outlined in the following paragraphs has been identified to explore these differences further.

Firstly, the low employment rate of people born in certain countries is predominantly because of low female participation in the labour market (figures not provided in this article). These analyses can be provided in the future. Analysis conducted using the LFS on earnings of migrant workers is also being considered, once the figures have been tested against the Annual Survey of Hours and Earnings (the preferred source for earnings analysis).

A version of **Table 3** will be published on a quarterly basis to coincide with other official statistics produced on migration-related issues. Alongside the table will be commentary using LFS data on any emerging trends or characteristics of migrant workers. Work is currently in progress to develop further the availability of confidence intervals on estimates of migrant workers.

Table 7

**People in employment aged 16 and over: by country of birth,<sup>1</sup> highest qualification and year of arrival,<sup>2</sup> October to December 2007**

	Thousands				
	UK <sup>3</sup>	A8	EU14	Other non-UK	Total <sup>4</sup>
<b>Totals</b>					
Total for period <sup>5</sup>	25,878	486	671	2,450	29,488
Degree or equivalent	5,924	46	209	743	6,922
Higher education	2,614	11	57	219	2,901
GCE A level or equivalent	6,550	35	105	266	6,956
GCSE grades A* to C or equivalent	6,045	11	67	206	6,329
Other qualifications	2,424	293	179	750	3,647
No qualification	2,128	83	49	247	2,507
<b>Year of arrival pre-1996</b>					
Total for period <sup>5</sup>	—	22	405	1,263	1,714
Degree or equivalent	—	7	104	421	542
Higher education	—	*	40	127	171
GCE A level or equivalent	—	4	83	181	273
GCSE grades A* to C or equivalent	—	*	58	139	201
Other qualifications	—	8	82	248	341
No qualification	—	—	37	137	176
<b>Year of arrival 1996 to 1999</b>					
Total for period <sup>5</sup>	—	16	70	240	326
Degree or equivalent	—	4	28	63	95
Higher education	—	*	7	21	30
GCE A level or equivalent	—	*	8	22	33
GCSE grades A* to C or equivalent	—	—	4	18	22
Other qualifications	—	8	20	92	121
No qualification	—	—	*	21	22
<b>Year of arrival 2000 to 2003</b>					
Total for period <sup>5</sup>	—	53	85	498	638
Degree or equivalent	—	8	40	140	190
Higher education	—	3	5	42	50
GCE A level or equivalent	—	5	6	37	47
GCSE grades A* to C or equivalent	—	*	2	34	37
Other qualifications	—	24	27	196	247
No qualification	—	10	5	47	62
<b>Year of arrival 2004 to 2007</b>					
Total for period <sup>5</sup>	—	392	103	433	929
Degree or equivalent	—	27	36	116	179
Higher education	—	5	3	27	36
GCE A level or equivalent	—	25	6	24	56
GCSE grades A* to C or equivalent	—	9	2	14	24
Other qualifications	—	250	49	211	509
No qualification	—	72	5	39	116

**Notes:**

Source: Labour Force Survey

- 1 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).
- 2 Year of arrival is the first time a person entered the UK. A person who entered the UK, then left and has returned for the nth time will provide the first date of arrival.
- 3 UK figures are only provided in the totals section as year of arrival is only relevant to non-UK born.
- 4 Total includes those people who did not state their country of birth.
- 5 Total for period includes those respondents who did not state their highest qualification.  
\* Indicates figure based on sample of three or less.

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Table 8

**People in employment aged 16 and over: by country of birth,<sup>1</sup> occupation and year of arrival,<sup>2</sup> October to December 2007**

	Thousands				
	UK <sup>3</sup>	A8	EU14	Other non-UK	Total <sup>4</sup>
<b>Totals</b>					
Total <sup>5</sup>	25,878	486	671	2,450	29,488
Managers and senior officials	3,918	13	129	391	4,452
Professional occupations	3,258	18	119	422	3,816
Associate professional and technical	3,771	26	135	354	4,286
Administrative and secretarial	3,097	22	60	216	3,395
Skilled trades occupations	2,946	82	49	173	3,251
Personal service occupations	2,074	32	55	192	2,353
Sales and customer service occupations	2,052	19	29	155	2,255
Process, plant and machine operatives	1,801	104	35	188	2,128
Elementary occupations	2,901	167	59	346	3,472
<b>Year of arrival pre-1996</b>					
Total <sup>5</sup>	—	22	405	1,263	1,714
Managers and senior officials	—	4	78	246	333
Professional occupations	—	4	57	210	276
Associate professional and technical	—	4	78	179	266
Administrative and secretarial	—	2	44	126	173
Skilled trades occupations	—	2	37	93	133
Personal service occupations	—	2	37	84	125
Sales and customer service occupations	—	2	18	75	96
Process, plant and machine operatives	—	2	25	106	133
Elementary occupations	—	1	30	140	173
<b>Year of arrival 1996 to 1999</b>					
Total <sup>5</sup>	—	16	70	240	326
Managers and senior officials	—	*	18	31	51
Professional occupations	—	3	17	46	67
Associate professional and technical	—	*	12	34	47
Administrative and secretarial	—	*	5	18	24
Skilled trades occupations	—	*	4	20	26
Personal service occupations	—	*	5	12	17
Sales and customer service occupations	—	2	*	18	22
Process, plant and machine operatives	—	3	*	24	29
Elementary occupations	—	2	4	34	40
<b>Year of arrival 2000 to 2003</b>					
Total <sup>5</sup>	—	53	85	498	638
Managers and senior officials	—	*	18	63	82
Professional occupations	—	2	21	91	114
Associate professional and technical	—	2	15	81	100
Administrative and secretarial	—	6	7	35	48
Skilled trades occupations	—	17	3	31	52
Personal service occupations	—	3	5	49	57
Sales and customer service occupations	—	6	4	33	43
Process, plant and machine operatives	—	6	5	32	42
Elementary occupations	—	9	8	79	95
<b>Year of arrival 2004 to 2007</b>					
Total <sup>5</sup>	—	392	103	433	929
Managers and senior officials	—	7	14	50	71
Professional occupations	—	8	24	72	104
Associate professional and technical	—	18	28	57	102
Administrative and secretarial	—	13	3	36	54
Skilled trades occupations	—	61	4	25	90
Personal service occupations	—	26	8	44	79
Sales and customer service occupations	—	10	4	28	43
Process, plant and machine operatives	—	94	2	24	120
Elementary occupations	—	154	15	94	263

**Notes:**

Source: Labour Force Survey

- 1 The country of birth question in the LFS may undercount the numbers of foreign born because it excludes students in halls of residence who do not have a UK resident parent, people in most types of communal establishments (for example, hotels, boarding houses, hostels and mobile home sites) and is grossed to population estimates that only include long-term migrants (staying 12 months or more).
  - 2 Year of arrival is the first time a person entered the UK. A person who entered the UK, then left and has returned for the nth time will provide the first date of arrival.
  - 3 UK figures are only provided in the totals section as year of arrival is only relevant to non-UK born.
  - 4 Total includes those people who did not state their country of birth.
  - 5 Totals may not sum because of rounding.
- \* Indicates figure based on sample of three or less.

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**TECHNICAL NOTE****Understanding the LFS**

The Labour Force Survey (LFS) is a quarterly household survey run by the Office for National Statistics, representative of the household population of the UK. The LFS collects a wide range of variables including nationality and country of birth. The data can be used as an indicator of the non-UK born or foreign born migrant numbers in the UK. The population covered is all people resident in private households. The LFS excludes most communal establishments although it does cover most staff resident in National Health Service accommodation. Students in halls of residence are covered by proxy through their parents and thus foreign students living in halls of residence are not likely to be covered – though those living in private households will be. The impact of this coverage of communal establishments is that the number of foreign born workers may be under-reported.

Until December 2007, to be included in the LFS, a respondent had to be resident in the UK for six months. This restriction was removed at the end of 2007. However, without a question asking the length of time a respondent will stay in the UK, it is not possible to accurately compare LFS foreign-worker figures with the definitions for international migrants as defined by the United Nations (see Box 2).

In addition to these difficulties, the population estimates to which the LFS is weighted are based on the long-term migrant definition. Therefore, although the LFS surveys people who are in the UK for less than 12 months, these people are weighted according to the distribution of people resident for more than 12 months.

**EU accession**

Until 2004, the European Union (EU) consisted of 15 member states: Belgium, France, Italy, Luxembourg, Netherlands, Germany, Ireland, the UK, Denmark, Greece, Portugal, Spain, Austria, Finland, and Sweden. In this article, an EU14 group is used for analyses to indicate that the UK is excluded.

In May 2004, a further ten states joined the EU: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, and Slovenia. This article uses a group of eight countries (A8) for analyses. The A8 group are the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic, and Slovenia. Finally, in January 2007, Romania and Bulgaria joined the EU. People born in these two countries are included in the Other Europe group unless stated otherwise.



## APPENDIX

Table A1

Levels<sup>1</sup> and rates<sup>2</sup> of employment: by country of birth

Thousands and percentages, not seasonally adjusted

	Total <sup>3</sup>		UK		Non-UK <sup>3</sup>		EU14		A8		Other Europe <sup>4</sup>		Middle East and Asia	
	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates	Employment levels	Employment rates
Jan-Mar 1997	26,245	72.2	24,323	73.1	1,921	62.5	565	67.6	26	65.3	103	57.7	217	59.5
Apr-Jun 1997	26,444	72.6	24,468	73.5	1,975	63.2	568	68.6	29	67.9	118	61.1	238	60.9
Jul-Sep 1997	26,707	73.3	24,715	74.2	1,991	63.7	575	70.6	28	63.6	115	59.5	229	61.2
Oct-Dec 1997	26,695	73.3	24,681	74.2	2,013	63.7	571	69.3	34	60.7	110	57.8	241	60.6
Jan-Mar 1998	26,546	72.8	24,505	73.7	2,041	63.7	592	68.5	33	63.1	105	56.4	232	60.3
Apr-Jun 1998	26,642	73.0	24,567	74.0	2,073	63.3	611	68.6	33	61.1	110	55.8	242	60.1
Jul-Sep 1998	26,969	73.9	24,902	74.9	2,065	63.7	606	69.9	35	66.3	99	53.3	237	61.1
Oct-Dec 1998	27,017	73.9	24,877	74.8	2,140	64.4	626	70.5	33	64.5	101	55.1	249	61.6
Jan-Mar 1999	26,909	73.5	24,777	74.4	2,130	64.0	634	70.9	31	65.6	103	57.2	236	60.2
Apr-Jun 1999	27,023	73.6	24,922	74.6	2,100	63.7	598	70.8	32	65.4	109	56.4	238	61.7
Jul-Sep 1999	27,351	74.5	25,236	75.4	2,114	64.9	594	73.1	30	63.0	113	55.3	240	64.6
Oct-Dec 1999	27,385	74.4	25,263	75.4	2,120	63.9	606	71.1	34	67.1	116	53.4	236	59.5
Jan-Mar 2000	27,239	73.8	25,102	74.9	2,135	63.2	599	69.3	45	71.6	126	55.5	248	57.3
Apr-Jun 2000	27,399	74.2	25,199	75.3	2,198	63.6	602	70.0	40	67.5	119	54.7	269	58.7
Jul-Sep 2000	27,685	74.9	25,447	76.0	2,237	64.7	610	74.8	32	59.4	120	52.6	263	57.8
Oct-Dec 2000	27,611	74.6	25,340	75.6	2,270	64.7	639	74.8	35	59.0	106	49.5	257	57.3
Jan-Mar 2001	27,505	74.2	25,229	75.2	2,272	64.4	633	74.0	37	56.4	104	50.9	283	58.7
Apr-Jun 2001	27,643	74.3	25,350	75.4	2,286	64.0	626	73.3	42	60.2	118	52.4	283	58.7
Jul-Sep 2001	27,839	74.7	25,511	75.8	2,327	64.7	613	72.4	41	59.2	125	54.9	290	61.7
Oct-Dec 2001	27,855	74.5	25,493	75.6	2,359	64.8	618	72.5	43	60.1	135	58.2	296	61.9
Jan-Mar 2002	27,675	74.0	25,313	75.1	2,360	63.9	617	72.2	45	60.4	138	51.9	319	63.5
Apr-Jun 2002	27,852	74.3	25,414	75.4	2,435	64.8	611	73.4	40	62.8	150	55.4	338	62.3
Jul-Sep 2002	28,026	74.7	25,526	75.8	2,499	65.2	623	73.2	51	64.5	145	55.8	345	63.9
Oct-Dec 2002	28,136	74.9	25,602	76.0	2,533	65.2	639	73.1	52	65.4	135	53.6	348	62.1
Jan-Mar 2003	27,970	74.3	25,445	75.4	2,524	64.2	648	72.9	49	58.3	142	54.1	329	57.6
Apr-Jun 2003	28,132	74.6	25,555	75.7	2,575	65.0	657	74.5	44	58.1	149	56.3	340	58.5
Jul-Sep 2003	28,331	74.9	25,738	76.0	2,591	65.7	631	73.2	47	61.6	140	54.8	349	61.4
Oct-Dec 2003	28,321	74.7	25,758	75.9	2,561	64.8	621	71.9	61	60.7	153	55.3	346	60.1
Jan-Mar 2004	28,331	74.6	25,742	75.7	2,589	65.0	619	70.2	63	63.8	151	54.4	360	63.1
Apr-Jun 2004	28,365	74.5	25,685	75.6	2,680	65.5	618	71.1	76	79.6	172	58.1	357	61.1
Jul-Sep 2004	28,583	75.0	25,852	76.0	2,728	66.4	616	73.2	97	75.3	168	59.9	351	59.2
Oct-Dec 2004	28,675	75.0	25,862	76.1	2,811	66.5	628	75.0	118	76.1	176	59.8	371	59.0
Jan-Mar 2005	28,641	74.6	25,814	75.6	2,826	66.7	627	73.6	117	74.2	165	60.0	389	61.4
Apr-Jun 2005	28,665	74.5	25,823	75.7	2,837	65.5	600	72.7	155	80.1	176	60.9	391	60.0
Jul-Sep 2005	28,960	75.1	26,022	76.2	2,935	66.7	629	74.5	191	81.0	171	59.3	378	59.9
Oct-Dec 2005	28,850	74.6	25,840	75.6	3,008	66.9	634	72.8	221	81.9	174	57.5	391	59.7
Jan-Mar 2006	28,869	74.4	25,767	75.4	3,100	67.4	635	75.2	254	82.7	179	57.6	413	59.7
Apr-Jun 2006	28,926	74.4	25,718	75.3	3,207	67.8	635	75.1	264	82.2	206	64.7	399	56.9
Jul-Sep 2006	29,178	74.9	25,919	75.8	3,254	68.3	618	77.0	304	81.5	208	64.2	418	61.8
Oct-Dec 2006	29,154	74.6	25,830	75.6	3,318	68.2	631	75.5	356	81.0	202	65.7	418	58.7
Jan-Mar 2007	28,978	74.1	25,622	75.1	3,350	67.2	655	75.2	377	80.8	193	63.2	427	57.4
Apr-Jun 2007	29,100	74.3	25,616	75.3	3,474	68.0	678	74.5	445	81.8	199	63.9	445	58.2
Jul-Sep 2007	29,382	74.8	25,825	75.8	3,549	68.9	680	75.4	442	83.1	194	61.0	472	63.3
Oct-Dec 2007	29,488	75.0	25,878	76.0	3,607	68.7	671	75.2	486	84.0	221	64.0	483	60.2
Jan-Mar 2008	29,438	74.6	25,755	75.5	3,682	69.3	698	76.5	510	82.8	236	65.9	483	61.9

## Notes:

Source: Labour Force Survey

1 Levels of employment are provided for the population aged 16 and over.

2 Employment rates are provided for the working age population currently defined as 16 to 59 for females and 16 to 64 for males.

3 Totals include the rest of the world, and those people who did not state their country of birth. Non-UK does not include people who did not state their country of birth

4 Other Europe includes Romania and Bulgaria.

5 The figures presented are weighted to population estimates published in 2007.

Table A1 continued

Thousands and percentages, not seasonally adjusted														
	Americas		Africa excluding South Africa		South Africa		Australia and New Zealand		Bangladesh		India		Pakistan	
	Employment		Employment		Employment		Employment		Employment		Employment		Employment	
	levels	rates	levels	rates	levels	rates	levels	rates	levels	rates	levels	rates	levels	rates
Jan–Mar 1997	244	66.4	304	62.9	54	75.9	78	81.3	42	36.7	197	65.6	80	40.5
Apr–Jun 1997	248	65.4	313	63.8	58	76.5	80	80.9	43	34.6	198	66.5	74	40.5
Jul–Sep 1997	258	68.7	314	62.8	58	77.9	80	81.0	44	35.0	201	65.5	77	39.6
Oct–Dec 1997	263	68.5	305	61.9	59	80.7	79	82.6	46	39.5	218	67.3	76	40.6
Jan–Mar 1998	284	71.0	313	63.5	55	77.9	77	77.5	44	37.2	224	68.3	75	39.0
Apr–Jun 1998	281	70.0	330	65.5	54	83.1	78	79.3	45	35.1	218	64.3	67	36.7
Jul–Sep 1998	269	69.5	329	66.5	71	82.2	83	79.1	45	34.9	217	62.5	68	35.9
Oct–Dec 1998	271	68.5	345	67.6	73	83.0	88	81.7	44	34.5	216	63.6	87	40.9
Jan–Mar 1999	268	67.3	348	67.4	68	75.4	87	78.8	55	36.8	210	63.4	80	40.2
Apr–Jun 1999	244	65.8	351	66.6	74	77.6	95	78.2	54	34.2	206	63.7	91	42.8
Jul–Sep 1999	244	67.3	345	66.4	78	78.9	106	82.4	51	34.4	205	63.3	97	44.7
Oct–Dec 1999	245	66.5	334	66.7	75	82.3	106	83.8	50	36.2	209	62.5	102	45.9
Jan–Mar 2000	251	65.5	332	65.9	69	79.1	106	84.8	44	32.6	209	64.0	100	46.2
Apr–Jun 2000	272	67.8	340	63.5	75	79.3	113	85.7	55	39.1	207	63.1	103	47.1
Jul–Sep 2000	273	68.5	369	64.4	85	82.6	111	87.4	57	39.0	212	65.5	101	46.4
Oct–Dec 2000	280	68.6	375	65.1	92	87.1	115	85.9	58	38.3	203	65.9	105	45.1
Jan–Mar 2001	279	66.9	378	65.2	89	82.2	106	85.3	59	39.2	202	66.3	97	44.0
Apr–Jun 2001	283	66.6	376	65.5	91	84.8	102	83.8	60	41.0	200	62.5	100	42.9
Jul–Sep 2001	296	68.5	391	67.3	93	79.8	101	81.8	65	40.3	203	63.9	106	44.2
Oct–Dec 2001	306	67.8	374	64.1	92	81.1	110	82.9	61	40.4	210	63.3	108	46.4
Jan–Mar 2002	284	67.2	375	62.9	90	81.0	113	83.2	59	38.6	203	62.9	110	45.7
Apr–Jun 2002	286	69.0	402	63.7	95	81.7	129	88.5	59	37.8	213	63.9	105	44.5
Jul–Sep 2002	274	69.3	414	63.3	108	82.0	128	87.9	58	38.3	237	65.2	107	44.4
Oct–Dec 2002	298	71.1	415	63.2	108	82.1	121	86.7	63	42.3	236	66.5	108	43.4
Jan–Mar 2003	280	68.7	441	65.4	114	81.0	119	86.4	57	37.7	230	67.2	107	43.6
Apr–Jun 2003	290	68.9	431	63.0	128	83.0	125	89.5	61	37.7	237	69.0	106	45.1
Jul–Sep 2003	305	70.1	441	65.7	139	85.6	128	87.4	72	40.5	227	67.4	103	44.1
Oct–Dec 2003	290	69.4	417	63.4	137	83.0	117	89.5	78	43.0	235	70.1	101	43.1
Jan–Mar 2004	297	70.2	426	64.5	134	81.7	115	91.3	83	44.9	233	67.5	104	43.4
Apr–Jun 2004	312	71.4	452	63.5	125	80.2	120	91.3	87	43.7	247	68.0	108	45.8
Jul–Sep 2004	301	71.7	455	64.4	132	81.8	134	91.7	94	47.5	256	68.3	118	48.3
Oct–Dec 2004	340	73.3	471	65.2	128	80.5	138	89.3	78	43.3	257	66.0	100	44.0
Jan–Mar 2005	337	70.7	475	66.7	134	78.2	150	90.2	72	40.4	258	67.9	92	42.6
Apr–Jun 2005	326	70.4	476	62.7	129	78.7	122	84.6	70	39.2	277	70.5	106	42.5
Jul–Sep 2005	325	72.7	497	65.3	134	78.5	128	87.6	71	39.8	287	70.2	117	43.2
Oct–Dec 2005	333	74.6	502	66.0	135	79.7	131	85.3	76	41.4	294	69.8	112	43.4
Jan–Mar 2006	330	70.9	509	65.7	135	80.3	129	84.2	86	45.2	315	71.7	106	44.0
Apr–Jun 2006	354	72.9	538	65.6	136	78.9	136	86.5	91	44.6	336	73.5	104	44.7
Jul–Sep 2006	354	70.3	526	64.3	151	83.9	135	84.8	85	43.0	326	69.8	120	48.5
Oct–Dec 2006	345	68.3	540	67.2	143	85.5	137	84.4	83	44.2	320	69.8	132	49.9
Jan–Mar 2007	333	68.1	531	65.5	132	82.4	127	82.1	93	48.0	324	69.1	149	49.1
Apr–Jun 2007	345	70.2	525	64.9	143	83.8	140	85.2	79	44.8	313	71.2	153	49.8
Jul–Sep 2007	372	71.7	555	66.7	136	84.8	135	86.6	85	49.2	302	68.8	167	47.2
Oct–Dec 2007	354	71.4	565	67.2	139	82.4	135	84.6	72	45.4	316	69.4	160	46.8
Jan–Mar 2008	344	71.0	554	66.7	154	86.1	133	86.0	66	46.1	326	69.7	168	45.2

## FEATURE

Andrew Barnard  
Office for National Statistics

# Regional analysis of public sector employment

## SUMMARY

This article presents updated analysis of public sector employment by region, with time series since 1999. The article uses the latest figures from public sector organisations for Scotland, Northern Ireland and the UK and the recently reweighted Labour Force Survey data to estimate the breakdown for English regions and Wales.

Regional estimates of public sector employment (PSE) are used for policy-related purposes and have been produced by the Office for National Statistics (ONS) using the Labour Force Survey (LFS), in conjunction with PSE estimates based on returns from public sector organisations, since 2005. The most recent estimates were produced in 2007 and featured in the March 2007 edition of *Economic & Labour Market Review*.

This article uses the most up-to-date PSE estimates alongside the recently reweighted LFS data to produce regional estimates for the period 1999 to 2007. The main findings from the analysis are:

- in 2007, all regions of the UK have an increased number of people working within the public sector, compared with the figure for 1999. This masks recent declines in the level of PSE; in the two years since 2005, many regions have seen levels of PSE fall (except Wales, West Midlands, London, Yorkshire and The Humber and Northern Ireland)
- over the year to Q4 2007, the largest relative decrease in the number of people working in the public sector was in the East Midlands region (1.1 per cent), while the largest relative increase was in the West Midlands region (0.7 per cent)
- Northern Ireland continues to have the highest proportion of their workforce working within the public sector in the 12 months to Q4 2007 (28.7 per cent), followed by Wales (23.6 per cent), the North East (22.9 per cent) and Scotland

(22.5 per cent). For the same time period, the East Midlands (17.0 per cent), East (17.1 per cent), South East (17.3 per cent) and London (18.5 per cent) had the smallest proportion of their workforce working in the public sector

## Regional public sector employment estimates

Estimates of PSE are produced for Scotland and Northern Ireland using returns from public sector organisations and are compiled by the Scottish Government and the Department of Enterprise, Trade and Investment for Northern Ireland (DETINI), respectively. These 'administrative-based' estimates are in fact based on a combination of administrative data and estimates from surveys of public sector organisations. For the purpose of this article, these estimates will be referred to as administrative-based, since most of the surveys approach 100 per cent in coverage. UK PSE estimates are produced at ONS and combine the Scottish and Northern Irish administrative-based figures with administrative-based estimates for England and Wales combined. Separate PSE estimates for England and Wales are not available from administrative sources and therefore estimates have been provided periodically by combining administrative data with data from the LFS.

The most recent publication of regional PSE estimates was in 2007. Since then, the LFS microdata has been subject to a major reweighting exercise, to take account of changes in population profiles at a local level that have occurred since the

last reweighting exercise in 2003. More information regarding the 2007-weighted LFS microdata can be found in Hughes and Palmer (2008).

### Using the LFS for regional estimates of PSE

The LFS is a survey of households and among other things collects information regarding the sector of employment and region of workplace. It is therefore possible to produce regional breakdowns of PSE using the LFS. However, as highlighted in Millard (2007), the LFS tends to overestimate PSE, relative to the administrative PSE series, for a number of reasons:

- public/private and industry classification rely on the respondent's view of the organisation they work for, whereas administrative estimates use information directly from the organisations. The respondent-based approach can lead to reporting error.

Analysis has highlighted that people sometimes associate their employer by their place of work, rather than the organisation that pays their wage. For example, a person working as a catering assistant in a school might state that they work for a school, even if their wage is paid by a private catering firm

- the LFS public/private variable (PUBLICR) does not fully match the National Accounts definition of the public sector used to produce the administrative PSE estimates. In particular, university staff and GPs should be classified under the private sector according to National Accounts definitions, whereas in the LFS they are both classified as belonging to the public sector
- the administrative PSE survey method tends to lead to undercoverage of schools devolved from local government

It is possible to adjust the LFS to bring the public sector variable closer to the National Accounts definition. **Figure 1** compares the PSE administrative series with the LFS and 'adjusted' LFS figures and illustrates the size of the LFS overestimation. It is clear that, under the adjusted methodology, the divergence between the LFS and PSE estimates is approximately halved.

The method utilised by this article closely follows that undertaken in Millard (2007). Seasonally adjusted LFS estimates are presented to ensure consistency with the administrative-based UK PSE series. The LFS estimates are four-quarter rolling averages, to minimise any effects related to sampling variations. The estimates run from Q1 1999 to Q4 2007, in line with the availability of PSE estimates for Scotland.

Figures for Scotland and Northern Ireland are four-quarterly averages taken from the published PSE estimates. These are not seasonally adjusted. The figures quoted in this article will therefore differ from the estimates published by the Scottish Government and DETINI. For example, the data shown in this article for Scotland for Q4 2007 is an average taken for the quarters Q1 to Q4 2007, whereas the published Scottish Government estimate for Q4 2007 refers to employment as at December 2007. Additionally, estimates of rates of PSE published by DETINI are typically expressed relative to the total number of employee jobs rather than the LFS-based estimate of total employment, as quoted in this article.

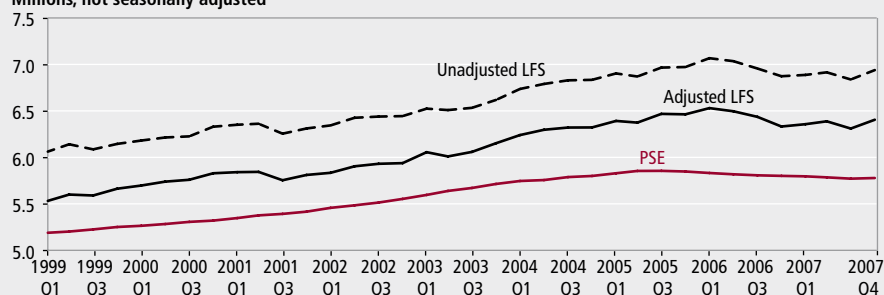
The regional split for England, Wales and the English regions is generated by prorating the England and Wales administrative total (the administrative-based UK PSE figure minus the administrative Scotland and Northern Ireland PSE estimates) according to the adjusted LFS proportions. Further explanation is available in Millard (2007).

### Updated estimates

For the four quarters to Q4 2007, the regions having the highest proportion of their workforce in the public sector continued to be Northern Ireland (28.7 per cent), Wales (23.6 per cent), the North East (22.9 per cent) and Scotland (22.5 per cent). The regions with the lowest proportion of their workforce in the public sector were the East Midlands (17.0 per cent), East (17.1 per cent), South East (17.3 per cent) and London (18.5 per cent). This is presented in **Figure 2**. The rates are similar to those presented in Millard (2007) for the four quarters to Q3 2006.

**Figure 1**  
**Comparison of PSE estimates from public sector organisations and LFS**

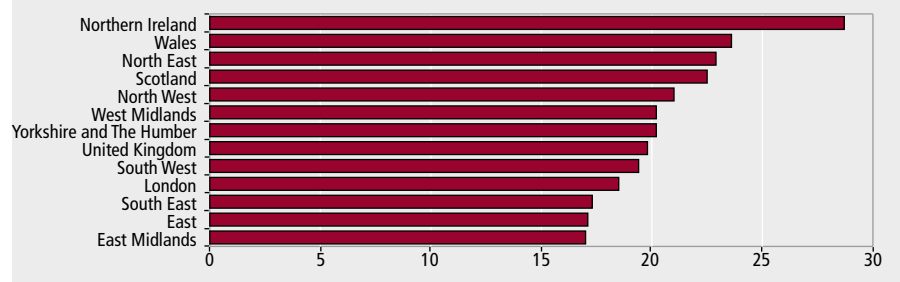
United Kingdom  
Millions, not seasonally adjusted



Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

**Figure 2**  
**Public sector employment as a proportion of all in employment: by region and country<sup>1</sup> of workplace, year to Q4 2007<sup>2</sup>**

Percentages

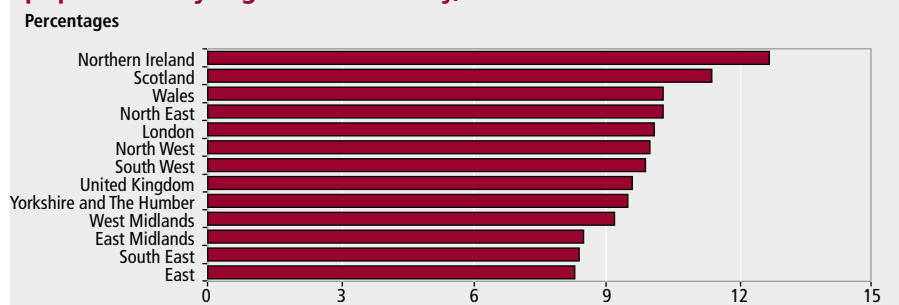


#### Notes:

- 1 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. HM Forces figures are not included in Northern Ireland estimates.
- 2 Four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4) 2007.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

**Figure 3**  
Public sector employment as a proportion of total resident population: by region and country,<sup>1</sup> 2006<sup>2,3</sup>



**Notes:**

- 1 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. HM Forces figures are not included in Northern Ireland estimates.
- 2 Headcount, four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4) 2006.
- 3 Public sector employment estimates are workplace-based estimates, that is, where people work rather than where they live. Mid-year population estimates measure resident population.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland); ONS mid-year 2006 population estimates

**Table 1**

**Public sector employment:<sup>1</sup> by region and country of workplace**

Thousands, seasonally adjusted

Average of four quarters to: <sup>2</sup>	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland <sup>3</sup>	Great Britain	Northern Ireland <sup>4</sup>	United Kingdom
<b>PSE level</b>															
1999Q4	240	591	438	318	430	411	716	626	429	4,200	290	529	5,019	197	5,217
2000Q1	238	597	439	319	437	415	719	629	426	4,219	289	530	5,037	198	5,236
2000Q2	235	609	444	320	439	417	715	629	430	4,238	288	531	5,057	199	5,256
2000Q3	232	621	452	318	434	421	703	635	438	4,254	291	532	5,077	199	5,276
2000Q4	230	633	456	315	430	426	691	640	446	4,267	295	532	5,094	200	5,293
2001Q1	232	643	459	315	429	429	683	640	453	4,283	299	532	5,114	200	5,314
2001Q2	234	650	458	314	431	431	687	643	455	4,303	300	533	5,136	201	5,337
2001Q3	238	654	449	317	439	431	703	640	454	4,324	299	534	5,157	202	5,359
2001Q4	245	661	445	320	445	431	711	638	454	4,349	296	536	5,180	202	5,383
2002Q1	249	666	440	320	451	429	723	642	457	4,377	293	538	5,207	203	5,410
2002Q2	251	665	440	324	457	431	726	644	462	4,400	293	540	5,234	204	5,437
2002Q3	256	665	448	329	457	430	724	647	466	4,423	297	543	5,263	205	5,468
2002Q4	256	666	455	331	462	435	728	649	468	4,450	300	545	5,296	206	5,502
2003Q1	253	666	464	331	468	441	727	649	476	4,475	306	548	5,329	208	5,537
2003Q2	255	673	472	332	469	447	723	650	482	4,503	312	551	5,366	209	5,576
2003Q3	255	678	480	333	472	455	722	653	484	4,532	318	554	5,404	211	5,615
2003Q4	251	678	490	338	471	465	723	662	488	4,566	319	558	5,443	212	5,655
2004Q1	252	684	502	350	468	474	721	668	481	4,599	319	561	5,479	213	5,693
2004Q2	254	681	511	359	466	481	726	678	477	4,631	312	565	5,508	214	5,722
2004Q3	256	682	511	367	468	488	731	683	477	4,663	305	568	5,536	215	5,751
2004Q4	261	684	508	371	473	487	734	686	477	4,681	304	571	5,556	216	5,773
2005Q1	269	685	500	365	476	485	743	691	488	4,701	301	574	5,576	217	5,793
2005Q2	268	689	492	359	486	484	746	696	500	4,720	303	576	5,599	219	5,818
2005Q3	267	692	490	356	492	479	749	701	508	4,733	303	579	5,615	220	5,835
2005Q4	264	689	492	358	493	476	754	703	514	4,744	302	581	5,626	220	5,847
2006Q1	262	683	496	366	495	470	755	698	514	4,739	305	583	5,627	220	5,847
2006Q2	263	679	494	373	494	463	762	691	510	4,729	304	584	5,618	220	5,838
2006Q3	265	674	487	375	492	461	765	686	509	4,713	308	584	5,605	221	5,826
2006Q4	266	680	482	371	491	457	765	679	507	4,699	310	584	5,593	221	5,815
2007Q1	265	686	477	364	490	458	771	676	504	4,691	311	583	5,584	221	5,806
2007Q2	264	686	474	356	494	454	771	680	500	4,680	315	581	5,576	221	5,797
2007Q3	263	680	483	349	499	447	771	682	496	4,672	316	579	5,568	221	5,788
2007Q4	264	673	493	346	507	443	763	688	495	4,670	314	578	5,562	220	5,783
Change 2005Q4 to 2007Q4	0	-16	0	-12	13	-34	9	-15	-19	-74	12	-2	-64	0	-64
Percentage change 2005Q4 to 2007Q4	-0.2	-2.3	0.1	-3.3	2.7	-7.0	1.2	-2.1	-3.8	-1.6	3.9	-0.4	-1.1	0.1	-1.1

It is also possible to express PSE as a proportion of the resident population, illustrating the relationship between the size of the public sector and the size of the population it serves. Variation between regions is smaller – for the four quarters to Q4 2006, the range is between 8.3 per cent for the East and 12.7 per cent for Northern Ireland. This is presented in **Figure 3**. Again, the proportions are similar to those presented in Millard (2007).

Between 1999 and 2007, all regions increased the level of PSE (see **Table 1** and **Table 2**). Over the period 1999 to 2007, the region with the largest relative increase in the number of people working in the public sector was the West Midlands, which had a 17.8 per cent rise. London was the region with the smallest rise, showing an increase of 6.5 per cent.

Between Q4 2005 and Q4 2007, all



Table 1 continued

Thousands, seasonally adjusted															
Average of four quarters to: <sup>2</sup>	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland <sup>3</sup>	Great Britain	Northern Ireland <sup>4</sup>	United Kingdom
<b>Change on year</b>															
2000Q4	-9	41	18	-3	0	15	-26	14	17	67	4	3	74	2	77
2001Q1	-5	46	20	-4	-8	14	-36	11	26	64	10	2	76	2	79
2001Q2	-1	41	13	-6	-8	13	-28	14	26	65	12	2	79	2	82
2001Q3	6	33	-3	-1	4	11	0	5	16	71	7	2	80	3	83
2001Q4	14	28	-11	4	15	5	21	-2	7	82	1	4	87	3	90
2002Q1	17	23	-19	5	22	0	40	2	4	94	-6	6	94	3	96
2002Q2	17	15	-18	10	26	0	39	2	6	97	-7	7	97	3	100
2002Q3	18	11	0	12	19	-2	21	7	12	99	-2	9	106	3	109
2002Q4	11	5	10	11	17	4	17	12	14	102	4	9	115	4	119
2003Q1	5	0	24	11	17	12	4	7	18	99	13	10	122	5	127
2003Q2	4	8	33	8	12	16	-3	6	20	103	19	11	133	6	138
2003Q3	-2	12	32	4	15	25	-2	6	18	109	21	11	141	6	147
2003Q4	-5	12	35	7	9	31	-6	13	20	116	19	13	147	6	153
2004Q1	-2	17	38	18	-1	33	-6	19	6	123	13	14	150	6	156
2004Q2	-2	8	39	27	-3	34	3	28	-6	128	0	14	142	5	146
2004Q3	1	4	30	34	-4	34	9	30	-7	131	-13	14	132	4	136
2004Q4	10	6	19	32	2	21	12	24	-11	115	-15	14	113	4	118
2005Q1	17	1	-2	15	9	11	22	23	6	102	-18	13	97	4	101
2005Q2	15	8	-19	0	20	4	20	18	23	88	-9	12	91	5	96
2005Q3	11	10	-20	-11	24	-9	18	18	31	71	-2	11	79	4	84
2005Q4	3	5	-16	-13	20	-10	19	17	38	62	-2	9	70	4	74
2006Q1	-6	-2	-4	1	19	-15	12	8	26	38	3	9	51	3	54
2006Q2	-5	-10	2	14	8	-21	16	-5	10	9	2	8	19	1	21
2006Q3	-2	-18	-3	19	1	-18	15	-14	1	-20	5	5	-9	1	-8
2006Q4	2	-9	-10	13	-2	-19	11	-23	-7	-44	8	3	-33	1	-32
2007Q1	3	3	-19	-1	-5	-12	16	-22	-10	-48	6	-1	-43	1	-42
2007Q2	1	7	-20	-16	-1	-9	9	-11	-10	-49	11	-3	-42	1	-41
2007Q3	-1	7	-4	-26	7	-14	7	-4	-12	-41	8	-5	-38	0	-38
2007Q4	-2	-7	10	-25	16	-15	-2	8	-12	-29	4	-5	-31	-1	-32

**Notes:**

- 1 Headcount; rolling four-quarter averages.
- 2 Rolling four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example, the Q4 1999 estimate is an average taken for the quarters Q1 1999 to Q4 1999.
- 3 Public sector employment estimates for Scotland are published by Scottish Government on a quarterly basis back to Q1 1999 from administrative records and surveys of public sector organisations in Scotland.
- 4 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. The percentages for Northern Ireland as a proportion of all employment will differ from DETINI estimates expressed as a proportion of all jobs. HM Forces figures are not included in Northern Ireland estimates.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

regions have seen a decrease in the level of PSE, except Wales (3.9 per cent growth), the West Midlands (2.7 per cent), London (1.2 per cent), Yorkshire and The Humber and Northern Ireland (both 0.1 per cent). The region with the largest fall over this period was the East, in which the level fell by 7.0 per cent. Overall, the level of PSE in the UK between 2005 and 2007 fell by 1.1 per cent.

### Assessing the accuracy of ONS regional estimates of PSE

Although estimates for Scotland have been taken from those published by the Scottish Government, it is possible to produce figures for Scotland based on the LFS methodology. The regional estimates can

then be evaluated by comparing the two, as explained further in Millard (2007). Millard concluded that the differences between the two sources were no larger than the size that might be expected due to LFS sampling variability and respondent error.

A comparison of the two estimates is shown in **Table 3**. The variation between the two sources was of a very similar magnitude, as presented in Millard, at most 3.3 per cent more (Q3 2003) and 1.9 per cent less (Q4 1999).

### PSE development programme

ONS is currently working with other government departments to develop regional PSE statistics from administrative sources, covering Northern Ireland,

Scotland, Wales and England (including English regional composition). This will incorporate existing regional administrative-based sources. Subject to a successful pilot study, the aim for future regional PSE estimates will be to replace the composite approach with the new administrative-based estimates.

#### CONTACT

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Table 2

**Public sector employment rate: by region and country of workplace<sup>1</sup>**

Thousands, seasonally adjusted															
Average of four quarters to: <sup>2</sup>	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland <sup>3</sup>	Great Britain	Northern Ireland <sup>4</sup>	United Kingdom
<b>PSE rate</b>															
1999Q4	23.4	19.6	19.7	16.9	17.8	17.2	18.4	16.5	18.2	18.3	24.2	23.2	19.0	28.8	19.2
2000Q1	23.0	19.6	19.8	16.9	18.1	17.3	18.4	16.5	18.1	18.3	24.0	23.1	19.0	28.9	19.2
2000Q2	22.5	19.9	19.9	16.8	18.2	17.3	18.4	16.4	18.2	18.3	23.8	23.0	19.0	29.0	19.2
2000Q3	22.1	20.3	20.2	16.7	18.1	17.2	18.1	16.5	18.4	18.3	24.0	22.9	19.0	29.1	19.2
2000Q4	22.0	20.6	20.3	16.6	17.8	17.3	17.8	16.6	18.7	18.3	24.2	22.6	19.0	29.0	19.2
2001Q1	22.2	20.9	20.4	16.6	17.8	17.2	17.6	16.5	18.9	18.4	24.5	22.6	19.0	29.0	19.3
2001Q2	22.6	21.1	20.4	16.6	17.8	17.3	17.6	16.6	19.0	18.4	24.8	22.5	19.1	28.9	19.3
2001Q3	23.0	21.3	19.9	16.7	18.1	17.3	17.8	16.5	18.9	18.5	24.8	22.6	19.1	28.8	19.4
2001Q4	23.6	21.5	19.8	16.9	18.2	17.3	17.9	16.4	18.8	18.5	24.7	22.7	19.2	29.0	19.4
2002Q1	23.8	21.6	19.4	16.8	18.4	17.2	18.2	16.5	18.9	18.6	24.5	22.8	19.2	29.2	19.5
2002Q2	24.0	21.7	19.3	17.0	18.6	17.2	18.3	16.6	19.1	18.7	24.4	23.0	19.3	29.2	19.6
2002Q3	24.3	21.6	19.6	17.1	18.5	17.0	18.3	16.7	19.2	18.7	24.6	23.0	19.4	29.4	19.6
2002Q4	24.3	21.6	19.7	17.1	18.7	17.2	18.4	16.7	19.3	18.8	24.6	23.1	19.4	29.2	19.7
2003Q1	24.0	21.5	20.1	17.1	18.9	17.5	18.5	16.7	19.5	18.9	24.7	23.1	19.5	28.8	19.8
2003Q2	24.1	21.6	20.4	17.0	18.9	17.7	18.5	16.7	19.7	19.0	24.7	23.1	19.6	28.9	19.8
2003Q3	23.9	21.6	20.6	17.0	19.2	18.0	18.4	16.8	19.7	19.1	24.9	23.1	19.7	29.1	19.9
2003Q4	23.4	21.5	20.9	17.3	19.2	18.2	18.5	17.0	19.8	19.2	24.7	23.1	19.8	29.4	20.0
2004Q1	23.1	21.6	21.4	17.8	19.1	18.5	18.4	17.1	19.5	19.3	24.6	23.2	19.9	30.0	20.1
2004Q2	23.2	21.5	21.7	18.2	18.9	18.7	18.4	17.4	19.3	19.4	24.0	23.2	19.9	30.3	20.2
2004Q3	23.2	21.4	21.6	18.7	18.9	18.9	18.6	17.5	19.3	19.4	23.5	23.3	20.0	30.5	20.2
2004Q4	23.7	21.4	21.4	18.9	19.0	18.9	18.6	17.6	19.3	19.5	23.4	23.3	20.0	30.4	20.3
2005Q1	24.3	21.4	21.0	18.5	19.0	18.8	18.8	17.6	19.7	19.5	23.2	23.3	20.0	30.2	20.3
2005Q2	24.1	21.5	20.6	18.1	19.3	18.8	18.9	17.7	20.1	19.5	23.3	23.5	20.0	30.1	20.3
2005Q3	24.0	21.6	20.4	17.8	19.5	18.6	18.9	17.7	20.3	19.5	23.1	23.5	20.1	29.9	20.3
2005Q4	23.8	21.5	20.4	17.7	19.6	18.5	19.0	17.7	20.6	19.5	23.0	23.6	20.1	29.9	20.3
2006Q1	23.5	21.3	20.4	17.9	19.8	18.3	18.9	17.5	20.5	19.5	23.2	23.7	20.0	29.8	20.3
2006Q2	23.4	21.1	20.3	18.2	19.7	18.1	19.1	17.3	20.3	19.4	23.2	23.7	19.9	29.5	20.2
2006Q3	23.5	20.9	20.0	18.3	19.6	18.0	19.1	17.2	20.2	19.3	23.5	23.6	19.9	29.4	20.1
2006Q4	23.5	21.1	19.8	18.1	19.5	17.8	19.0	17.0	20.1	19.2	23.7	23.4	19.8	29.2	20.0
2007Q1	23.4	21.3	19.6	17.8	19.5	17.7	19.0	17.0	19.9	19.2	23.7	23.2	19.7	29.0	20.0
2007Q2	23.3	21.4	19.6	17.5	19.7	17.5	18.9	17.1	19.8	19.1	23.9	22.8	19.7	28.9	19.9
2007Q3	23.1	21.2	19.9	17.2	20.0	17.3	18.8	17.2	19.6	19.1	23.8	22.6	19.6	28.7	19.8
2007Q4	22.9	21.0	20.2	17.0	20.2	17.1	18.5	17.3	19.4	19.0	23.6	22.5	19.5	28.7	19.8

**Notes:**

- 1 Headcount; rolling four-quarter averages.
- 2 Rolling four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example, the Q4 1999 estimate is an average taken for the quarters Q1 1999 to Q4 1999.
- 3 Public sector employment estimates for Scotland are published by Scottish Government on a quarterly basis back to Q1 1999 from administrative records and surveys of public sector organisations in Scotland.
- 4 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. The percentages for Northern Ireland as a proportion of all employment will differ from DETINI estimates expressed as a proportion of all jobs. HM Forces figures are not included in Northern Ireland estimates.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

**Table 3**  
**Comparison between Scottish Government<sup>1</sup> and ONS PSE estimates**

Scotland			
Average of four quarters to: <sup>2</sup>	Difference: ONS minus Scottish Government estimates of PSE		
	PSE levels (thousands)	PSE levels (percentage difference)	
1999Q4	-10	-1.9	
2000Q1	-6	-1.1	
2000Q2	0	0.0	
2000Q3	4	0.7	
2000Q4	0	0.0	
2001Q1	0	0.0	
2001Q2	1	0.1	
2001Q3	1	0.2	
2001Q4	3	0.5	
2002Q1	8	1.5	
2002Q2	6	1.2	
2002Q3	10	1.8	
2002Q4	10	1.8	
2003Q1	11	2.0	
2003Q2	12	2.1	
2003Q3	18	3.3	
2003Q4	11	2.0	
2004Q1	9	1.5	
2004Q2	6	1.1	
2004Q3	9	1.5	
2004Q4	7	1.1	
2005Q1	12	2.0	
2005Q2	11	1.9	
2005Q3	6	1.0	
2005Q4	1	0.2	
2006Q1	-3	-0.6	
2006Q2	-7	-1.3	
2006Q3	-5	-0.9	
2006Q4	-5	-0.9	
2007Q1	0	0.0	
2007Q2	7	1.2	
2007Q3	13	2.2	
2007Q4	9	1.5	

**Notes:**

- 1 Public sector employment estimates for Scotland are published by the Scottish Government on a quarterly basis back to Q1 1999 from administrative records and surveys of individual public sector organisations in Scotland.
- 2 Rolling four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example, the Q4 1999 estimate is an average taken for the quarters Q1 to Q4 1999.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government)

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## FEATURE

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# The effects of taxes and benefits on household income, 2006/07

## SUMMARY

This article examines how taxes and benefits redistribute income between households in the United Kingdom. It shows average payments of taxes and receipts of benefits, for households in different parts of the income distribution. It also shows where different types of households and individuals are in the income distribution and looks at the changing levels of income inequality over time. The analysis is published annually and results are presented here for 2006/07.

Government intervention, through taxes and benefits, alters the incomes of households. In general, households in the upper part of the income distribution pay more in taxes than they receive in benefits, while the reverse is true for those in the lower part of the distribution. Taxes and benefits therefore reduce income inequality. In 2006/07, before taxes and benefits, the top fifth of households had an average of £72,900 per year in original income from sources such as earnings, occupational pensions and investments. This is around 15 times as great as the figure of £4,900 for the bottom fifth. After taking account of taxes and benefits, the top fifth had an average final income of £52,400 compared with £14,400 for the bottom fifth of households, a ratio of four to one. The difference between original income and final income for 2006/07, broken down by quintiles, is also shown graphically in **Figure 1**.

Cash benefits play the largest part in reducing inequality. The majority of these go to households in the lower part of the distribution. **Figure 2** shows gross income broken down into original income and cash benefits, by income quintile group.

Direct taxes, except for council tax and Northern Ireland rates, are progressive – they take a larger proportion of income from those higher up the income distribution. Therefore they also contribute to a reduction in inequality, although not to the same extent as cash benefits. Indirect taxes have the opposite effect to direct taxes, taking a higher proportion of income

from those with lower incomes – that is, they are regressive. While households higher up the income distribution pay more indirect tax in absolute terms, they pay a lower proportion of their income in indirect tax.

Households also receive benefits in kind from services provided free or at subsidised prices by government, such as health and education services. The amount received falls gradually as income increases, indicating that these benefits also lead to a reduction in inequality.

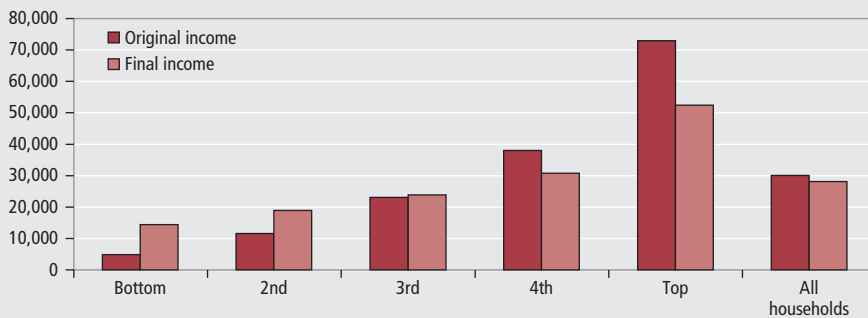
## Characteristics across the income distribution

Some household types are more likely to be in higher income groups, while others tend to appear in the lower groups. Single person households are slightly more likely to be in the higher income groups, while households consisting of two adults with no children, are very clearly concentrated in the higher groups.

Households containing two adults with children tend to be lower down the equivalised income distribution than those with no children. Households which consist of only one adult with children are much more concentrated in the lower income groups. Retired households are also concentrated in the bottom half of the income distribution. Adults and children are not spread evenly throughout the income distribution. For example, there are more children in households in the lower part of the distribution compared with the upper part.

**Figure 1**  
**Original income and final income by quintile groups for all households,<sup>1</sup> 2006/07**

Average income per household (£ per year)

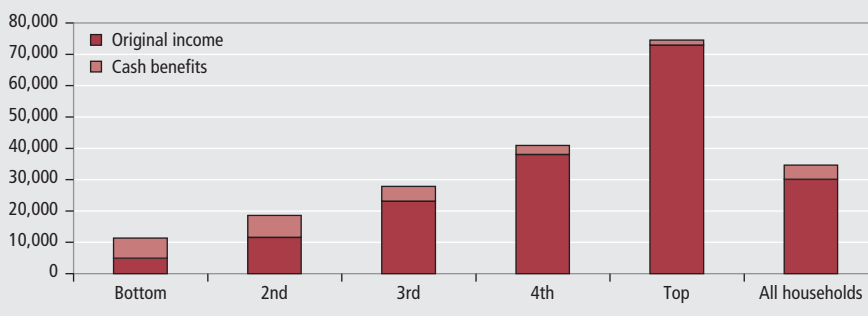


**Note:**

1 Households are ranked throughout by their grossed equivalised disposable incomes.

**Figure 2**  
**Gross income by quintile groups for all households,<sup>1</sup> 2006/07**

Average income per household (£ per year)



**Note:**

1 Households are ranked throughout by their grossed equivalised disposable incomes.

## Trends in income inequality

The effect of taxes and benefits on income inequality can be seen by their effect on the Gini coefficient. This is a widely used summary measure of income inequality (see Appendix 2, paragraph 53). It can take values from 0 to 100 per cent, where a value of zero would indicate that each household had an equal share of income, while higher values indicate greater inequality.

Inequality of disposable income, as measured by the Gini coefficient, increased between 2004/05 and 2006/07, although it has continued to remain within the same broad range of values since 1987. Income inequality increased rapidly in the second half of the 1980s, reaching a peak in 1990. After 1990, the trend was downwards, although inequality did not return to the levels of the late 1970s and early 1980s. After 1995/96, inequality began to rise again, reaching a peak in 2001/02 – at a level very similar to that in 1990. Between 2001/02 and 2004/05, income inequality fell before rising again.

## Concepts and sources

This analysis examines how taxes and benefits redistribute income. **Figure 3** shows the stages in the redistribution of income used in this analysis. Household members receive income from employment, occupational pensions, investments and from other non-government sources. This is referred to as original income. The figure shows the various ways that government raises revenue from households through taxation and distributes benefits to them in cash, and in kind.

The analysis only allocates those taxes and benefits that can reasonably be attributed to households. Therefore, some government revenue and expenditure is not allocated, such as revenue from corporation tax and expenditure on defence and public order. There are three main reasons for non-allocation. Some taxes and benefits fall on people who do not live in private households. In other cases, there is no clear conceptual basis for allocation to particular households. Finally, there may be a lack of data to enable allocation. In this study,

some £339 billion of taxes and compulsory social contributions have been allocated to households. This is equivalent to 60 per cent of general government expenditure, which totalled £566 billion in 2006. Similarly, £304 billion of cash benefits and benefits in kind have been allocated to households, making up 54 per cent of general government expenditure.

The estimated values of taxes and benefits reflect the methodology used in this study. They are based on assumptions about which taxes and benefits should be covered and to whom they should apply. Where it is practical, the methodology used is similar to that used in previous years. However, there have been some changes in the underlying surveys and improvements in the methodology. For this reason, one should be cautious about making direct comparisons with earlier years. Comparisons with previous years are also affected by sampling error. This is especially true for estimates which are based on subsamples such as the results for decile or quintile groups, or particular household types. Time series are presented for some of the more robust measures, and these include Gini coefficients and other measures of inequality.

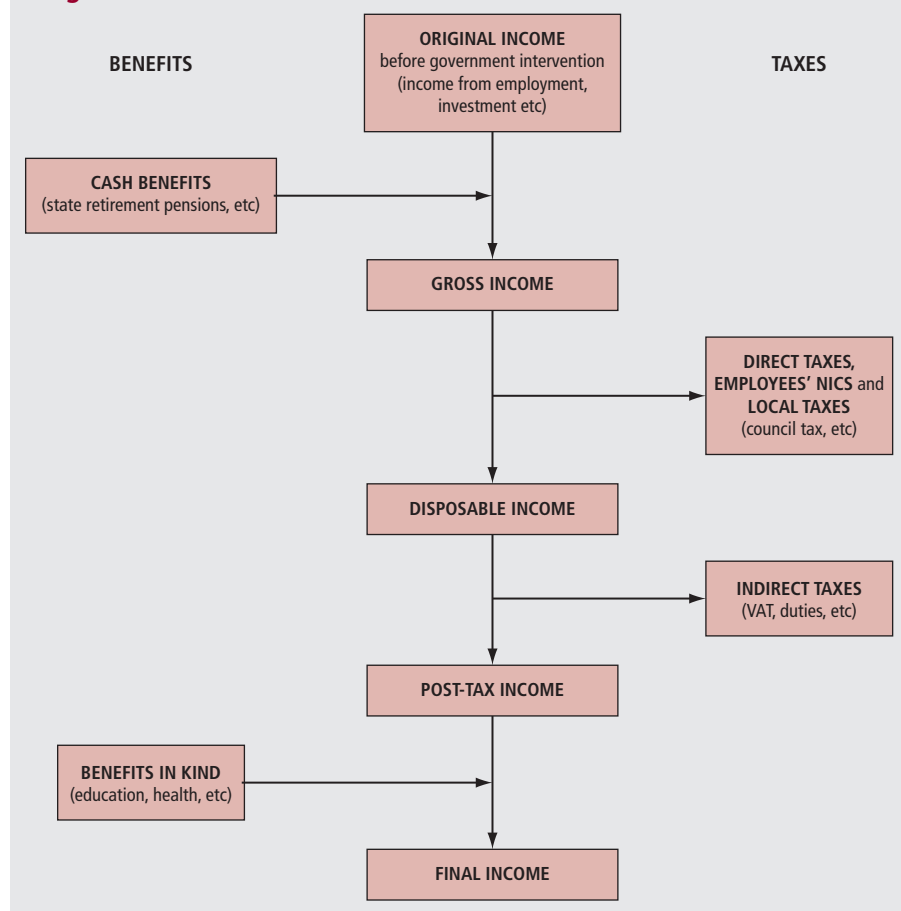
## Unit of analysis

The unit of analysis used in this study is the household. The households are ranked by their equivalised disposable income, which the analysis uses as a proxy for standard of living. Equivalisation is a standard methodology that takes into account the size and composition of households and adjusts their incomes to recognise differing demands on resources. For example, a couple would need a higher income than a single person to achieve the same standard of living. The equivalence scale used in this analysis is the McClements scale (before housing costs are deducted). So a single person's income of £6,100 is treated as equivalent to an income of £10,000 for a couple (see Appendix 2, paragraph 48). Households with the same equivalised income do not necessarily have the same standard of living where other characteristics are different. For example, households which own their homes outright would be in a better position than identical households with the same income which had to pay rent or mortgage payments. Equivalisation does not adjust for such differences.

Equivalised income is used only to rank the households. Most monetary values shown in the analysis are not equivalised.



**Figure 3**  
**Stages of redistribution**



Where equivalised amounts are given, they are shown in *italics*. Once the households have been ranked, the distribution is split into five or ten equally sized groups – that is, quintile groups or decile groups. The bottom quintile (or decile) group is that with the lowest equivalised disposable incomes, while the top quintile (or decile) is that with the highest.

#### Data sources

The main data source for this analysis is the Expenditure and Food Survey (EFS) which covers about 6,000 households in the United Kingdom each year. It only covers private households – people living in hotels, lodging houses and in institutions, such as old people's homes, are excluded. The EFS is used because as well as collecting data on household income, it also collects expenditure data which are used here to estimate payment of indirect taxes.

There is known to be a degree of under-reporting in the EFS for some benefits. For example, when compared with administrative data from HM Revenue & Customs (HMRC), the EFS estimate of total tax credit payments is only around two-thirds of the HMRC figure. Further details

of the concepts and methodology used are given in Appendix 2.

The results of the analysis are reported in three sections. The first looks at the

effects for all households. Non-retired and retired households have distinct income and expenditure patterns and so the tax and benefit systems affect the two groups in very different ways. Therefore, the second and third sections look separately at results for non-retired and retired households.

### Results for all households

#### Overall effect

Taken as a whole, the tax and benefit system leads to income being shared more equally between households. In this analysis, income before taxes and benefits is termed original income and includes income from earnings, occupational pensions and investments. Original income varies considerably between households. Those in the top quintile group have an average of £72,900 compared with £4,900 for the bottom group (**Table 1**).

The extent of inequality in this measure of income can be seen by looking at the proportion of total original income received by groups of households in different parts of the income distribution. At this stage, the richest fifth of households (those in the top quintile group) receive 51 per cent of all original income (**Table 2**). This compares with only 3 per cent for households in the bottom fifth.

Adding cash benefits to original income gives gross income. In contrast to original income, the amount received from cash benefits is higher for households lower down the income distribution than for

**Table 1**

#### Summary of the effects of taxes and benefits: by quintile groups on all households,<sup>1</sup> 2006/07

	Quintile groups of all households <sup>1</sup>					Ratio All top/bottom households quintile	
	Bottom	2nd	3rd	4th	Top		
Income, taxes and benefits per household (£ per year) <sup>2</sup>							
Original income	4,900	11,550	23,080	37,980	72,890	30,080	15
<i>plus</i> cash benefits	6,450	7,040	4,790	2,950	1,680	4,580	0.3
Gross income	11,350	18,590	27,870	40,930	74,570	34,660	7
<i>less</i> direct taxes <sup>3</sup> and employees' NICs	1,240	2,520	5,170	9,070	18,460	7,290	15
Disposable income	10,110	16,080	22,700	31,860	56,110	27,370	6
<i>less</i> indirect taxes	3,150	3,610	4,550	5,930	7,500	4,950	2
Post-tax income	6,960	12,460	18,150	25,930	48,600	22,420	7
<i>plus</i> benefits in kind	7,480	6,410	5,740	4,830	3,800	5,650	0.5
Final income	14,440	18,870	23,890	30,760	52,400	28,070	4

#### Notes:

- Households are ranked by equivalised disposable income.
- All the Tables in Part 1 of this article show unequivalised income. Equivalised income has only been used in the ranking process to produce the quintile groups (and to produce the percentage shares and Gini coefficients).
- These are income tax (which is after deducting tax credits and tax relief at source on life assurance premiums), council tax and Northern Ireland rates but after deducting discounts, council tax benefits and rates rebates.

Table 2

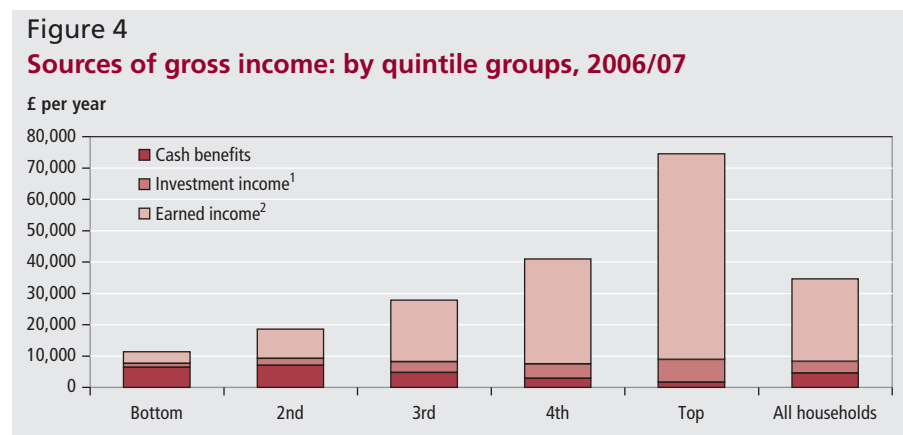
**Percentage shares of household income and Gini coefficients,<sup>1</sup> 2006/07**

	Percentage shares of equivalised income for all households <sup>2</sup>			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group <sup>2</sup>				
Bottom	3	7	7	6
2nd	7	11	12	11
3rd	15	16	16	16
4th	24	23	22	22
Top	51	44	42	44
All households	100	100	100	100
Decile group <sup>2</sup>				
Bottom	1	3	3	2
Top	33	29	27	29
Gini coefficient (per cent)	52	38	34	39

**Notes:**

1 This is a measure of the dispersion of each definition of income (see Appendix 2, paragraph 53).

2 Households are ranked by equivalised disposable income.

**Notes:**

1 Investment income includes occupational pensions and annuities.

2 Earned income includes wages and salaries, income from self-employment and income from fringe benefits.

those at the top. Of the total amount of cash benefits received, the bottom two quintile groups together receive 59 per cent. These households receive an average of £6,700 from cash benefits, representing around 57 per cent of gross income for the bottom quintile group and 38 per cent for the second quintile group. This has an equalising effect on the distribution (**Figure 4**).

**Direct taxes**

Direct taxes include income tax, National Insurance contributions (NICs) and council tax or Northern Ireland rates. Higher income groups pay both higher amounts of direct tax and higher proportions of their income in direct tax with the top quintile group paying an average of £18,500 per household in direct taxes. In contrast, the direct tax bill for households in the bottom quintile group is around £1,200. Consequently, direct taxes have an

equalising effect on the shares of income. Looking at income tax on its own, the top two quintile groups pay 81 per cent of total income tax, while the bottom two quintile groups together pay 7 per cent.

**Table 3** shows the effect of direct and indirect tax on each quintile group. Households at the lower end of the income distribution pay smaller amounts of direct tax compared with higher income households. In addition, low income households also pay a smaller proportion of their income in income tax because tax is not paid on the first tranche of income and higher rates of tax are paid on higher incomes. As a proportion of their gross incomes, households in the bottom quintile group pay an average of 4 per cent in income tax compared with 19 per cent for those in the top quintile group. The proportion of gross income paid in NICs rises with income until the fourth quintile group.

Council tax (and domestic rates in Northern Ireland) on the other hand are regressive even after taking into account council tax benefits and rates rebates. Households in the lower part of the income distribution pay smaller absolute amounts – average net payments by the bottom fifth of households are half those of the top fifth. However, when expressed as a proportion of gross income, the burden decreases as income rises. Council tax in Great Britain and domestic rates in Northern Ireland represent 6 per cent of gross income for those in the bottom fifth but only 2 per cent for those in the top fifth.

**Indirect taxes**

The amount of indirect tax that each household pays is determined by their expenditure rather than their income. While the payment of indirect taxes can be expressed as a percentage of gross income in the same way as for direct taxes, it should be remembered that for some households, particularly towards the bottom of the income distribution, annual expenditure exceeds annual income. For these households, expenditure is not being funded entirely from income. To express the payment of indirect taxes as a percentage of gross or disposable income is potentially misleading because, for these households, income may not be a good indicator of purchasing power or standard of living.

There are a number of possible reasons why expenditure may exceed income. Some households with low incomes may draw on their savings or borrow in order to finance their expenditure. In addition, the bottom decile in particular includes some groups who have, or report, very little income (for example people not currently in employment and some self-employed people). For some people this spell of very low income may only be temporary and, during this period, they may continue with previous patterns of spending. Some types of one-off receipts are not included as current income in the EFS, for example, inheritance and severance payments. In some cases, the information given on direct tax is not consistent with that on income received, possibly because of timing differences. The income and expenditure data are measured in different ways in the EFS, and either could be affected by measurement errors of different kinds (see Appendix 2, paragraph 6).

To give a more complete picture of the impact of indirect taxes, they are shown in Table 3 separately as a proportion of gross income, disposable income and

Table 3

**Taxes as a percentage of gross income, disposable income and expenditure for all households: by quintile groups,<sup>1</sup> 2006/07**

	Quintile groups of all households <sup>2</sup>					All households
	Bottom	2nd	3rd	4th	Top	
<b>(a) Direct and indirect taxes as a percentage of gross income</b>						
Direct taxes						
Income tax <sup>3</sup>	3.5	6.4	10.5	13.9	18.5	13.9
Employees' NICs	1.6	3.1	4.6	5.6	4.5	4.4
Council tax and Northern Ireland rates <sup>4</sup>	5.7	4.0	3.5	2.7	1.7	2.8
All direct taxes	10.9	13.5	18.5	22.2	24.8	21.0
Indirect taxes						
VAT	11.0	7.6	6.7	6.3	4.5	6.1
Duty on alcohol	1.3	0.9	0.9	0.8	0.5	0.8
Duty on tobacco	2.5	2.0	1.2	0.8	0.3	0.9
Duty on hydrocarbon oils and vehicle excise duty	3.0	2.3	2.1	1.9	1.2	1.7
Other indirect taxes	9.9	6.6	5.3	4.6	3.5	4.8
All indirect taxes	27.8	19.4	16.3	14.5	10.1	14.3
All taxes	38.6	33.0	34.9	36.7	34.8	35.3
<b>(b) Indirect taxes as a percentage of disposable income</b>						
VAT	12.4	8.8	8.3	8.1	6.0	7.7
Duty on alcohol	1.5	1.1	1.2	1.1	0.7	1.0
Duty on tobacco	2.8	2.3	1.5	1.0	0.4	1.1
Duty on hydrocarbon oils and vehicle excise duty	3.4	2.6	2.6	2.4	1.6	2.2
Other indirect taxes	11.2	7.7	6.6	6.0	4.7	6.1
All indirect taxes	31.1	22.5	20.1	18.6	13.4	18.1
<b>(c) Indirect taxes as a percentage of expenditure<sup>2</sup></b>						
VAT	7.9	8.1	7.8	7.7	7.0	7.6
Duty on alcohol	1.0	1.0	1.1	1.0	0.8	1.0
Duty on tobacco	1.8	2.1	1.4	1.0	0.4	1.1
Duty on hydrocarbon oils and vehicle excise duty	2.2	2.4	2.4	2.3	1.8	2.2
Other indirect taxes	7.2	7.0	6.2	5.7	5.4	6.0
All indirect taxes	20.0	20.6	19.0	17.8	15.6	17.8

**Notes:**

- Households are ranked by equivalised disposable income.
- Calculated to be consistent with disposable income. See paragraph 35 of Appendix 2 for the definition of expenditure.
- After deducting tax credits and tax relief at source on life assurance premiums.
- After deducting discounts, council tax benefits and rates rebates.

expenditure. Direct taxes are also shown as a proportion of gross income so that the impact of direct and indirect taxes can be compared.

In cash terms, the top fifth of households pay two and a half times as much indirect tax as the bottom fifth. This simply reflects higher expenditure by higher

income households. The only indirect taxes which fall more evenly across the income distribution are duties on tobacco, television licences, taxes on betting, and the tax element of the National Lottery.

When expressed as a percentage of expenditure, the proportion paid in indirect tax tends to be lower for households at the top of the distribution compared with those lower down (16 per cent for the top quintile compared with 20 per cent for the bottom quintile). The higher expenditure by low income groups on tobacco accounts for part of this difference.

When expressed as a proportion of gross or disposable income, the impact of indirect taxes declines much more sharply as income rises. This is because those in higher income groups tend to channel a larger proportion of their income into savings and mortgage payments, which do not attract indirect taxes. In addition, for many households in the lower half of the distribution recorded current income is lower than recorded current expenditure, and as a result indirect taxes expressed as a proportion of income appear more regressive than when expressed as a proportion of expenditure.

The final stage in the redistribution process is the addition of benefits in kind, such as those from state education and the health service. Households in the bottom quintile group receive the equivalent of around £7,500 from all benefits in kind, compared with £3,800 received by the top fifth (see Figure 5). These are described in more detail later in the analysis.

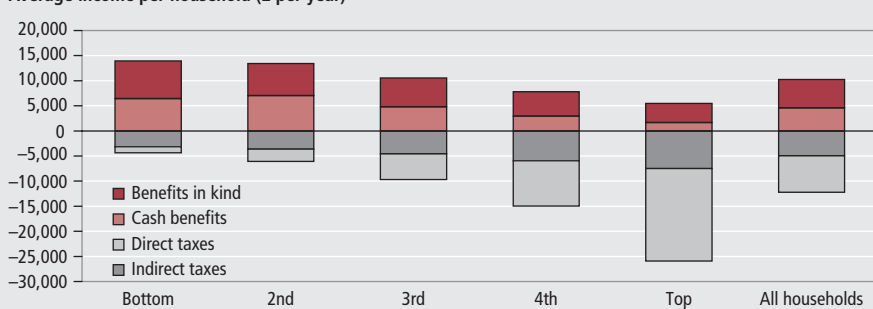
Estimates of final income include receipt of all benefits and payment of all taxes. After redistribution through taxes and benefits, the share of income received by the bottom quintile group increases from 3 per cent for original income to 6 per cent for final income. The share of income received by the top quintile group falls from 51 per cent to 44 per cent.

The Gini coefficients which appear in Table 2 produce a similar picture to the shares of income discussed earlier. For 2006/07, the figure of 52 per cent for original income is reduced to 38 per cent for gross income by the inclusion of cash benefits – a large reduction in inequality. The coefficient for disposable income shows the equalising effect of direct taxes, with the figure falling further to 34 per cent. That indirect taxes reverse this effect is confirmed by the Gini coefficient, rising to 39 per cent for post-tax income.

Figure 5

**Summary of the effects of taxes and benefits on all households by quintile groups,<sup>1</sup> 2006/07**

Average income per household (£ per year)

**Note:**

- Households are ranked throughout by their grossed equivalised disposable incomes.

### Characteristics of households

Some household types are more likely to be located in one part of the income distribution than another. Information about the characteristics of households in the different income groups is shown in **Table 4**. Household size does not vary much across the income distribution, with an average of between 2.2 and 2.5 people per household in each quintile group in 2006/07. There are fewer children in the upper part of the income distribution, and particularly in the top quintile. Men are slightly more likely to be in the upper part of the distribution while women are spread more evenly across the distribution. Higher income groups also contain more economically active people. The top fifth of households have about three times as many economically active people as the bottom fifth.

Among non-retired two-adult households, those without children tend to be concentrated towards the top of the income distribution with 63 per cent in the top two quintiles, while those with more children are lower down. For two-adult households with children, the position in the income distribution tends to vary according to the number of children. Households with more children, unless there is a corresponding increase in income, will have lower equivalised incomes to reflect the additional demand on resources. Non-retired households with one adult and one or more children are concentrated in the lower groups. Around 68 per cent of these households are in the bottom two quintile groups.

Retired households are over-represented at the lower end of the distribution, with 62 per cent falling into the bottom two quintile groups. Among single person retired households, women are both more numerous and also more concentrated towards the bottom of the income distribution compared with men.

### Changes in inequality over time

There are several ways of measuring income inequality of which the Gini coefficient is one of the most widely used. It is described in more detail in Appendix 2, while **Figure 6** shows how the Gini coefficients for the various measures of income have changed since 1980. As with other estimates presented here, they are subject to sampling error and some caution is needed particularly in the interpretation of year-to-year changes. However, by looking at data over several years, it is possible to discern underlying trends.

Table 4

### Summary of household characteristics of quintile groups of all households,<sup>1</sup> 2006/07

	Quintile groups of all households¹					All households
	Bottom	2nd	3rd	4th	Top	
Number of individuals per household						
Children²	0.6	0.6	0.5	0.5	0.3	0.5
Adults	1.7	1.7	1.9	2.0	1.9	1.8
Men	0.8	0.8	0.9	1.0	1.0	0.9
Women	1.0	0.9	1.0	1.0	0.9	1.0
People	2.4	2.3	2.4	2.5	2.2	2.4
People in full-time education	0.7	0.5	0.5	0.5	0.3	0.5
Economically active people	0.6	0.8	1.3	1.6	1.7	1.2
Retired people	0.6	0.7	0.4	0.3	0.2	0.4
Household type (percentages)						
Retired	38	44	25	16	8	26
Non-retired						
1 adult	13	10	15	14	21	15
2 adults	10	10	19	28	38	21
1 adult with children³	12	8	4	3	2	6
2 adults with children	15	19	21	23	19	19
3 or more adults⁴	11	10	15	15	12	13
All household types	100	100	100	100	100	100

#### Notes:

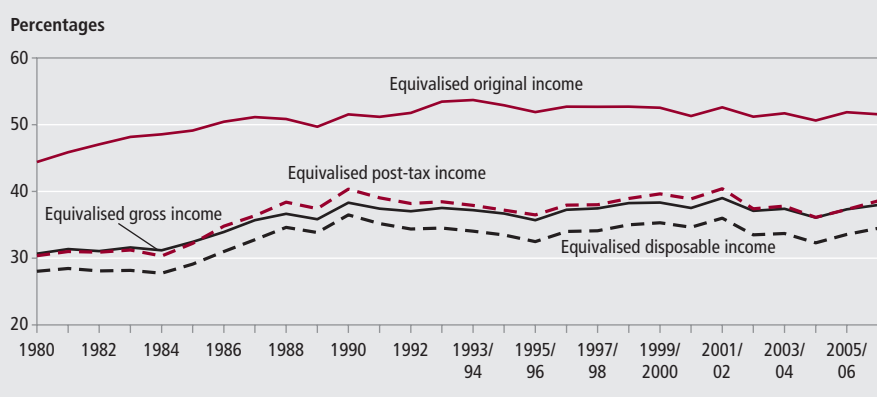
- 1 Households are ranked by equivalised disposable income.
- 2 Children are defined as people aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.
- 3 This group is smaller than the category of 'one-parent families' because some of these families will be contained in the larger household types.
- 4 With or without children.

As shown in Figure 6, the Gini coefficients for gross, disposable and post-tax income all increased between 2004/05 and 2006/07. The increase in 2005/06 was primarily due to increased inequality of original income, with faster growth in wages and salaries and self-employment income in the upper part of the distribution compared with the lower part. This was to some extent reversed in 2006/07, although lower growth in average income from cash benefits compared with earnings had the

effect of increasing inequality. The Gini coefficients for disposable income published in the Department for Work and Pensions' *Households Below Average Income* were also higher in 2005/06 and 2006/07 compared with 2004/05.

This followed a period between 2001/02 and 2004/05 when income inequality was falling. Over this period, there was a slight fall in inequality of original income due to faster growth in income from earnings and self-employment income at the bottom end

Figure 6  
Gini coefficients, 1980 to 2006/07





of the income distribution. Policy changes such as the increases in the National Minimum Wage, increases in tax credit payments, and the increase in NICs in 2003/04 would also have resulted in small reductions in inequality of disposable and post-tax income during this period.

Inequality of disposable income increased in the late 1980s and, despite periods of both rising and falling inequality since 1990, inequality of disposable income has remained higher than it was in the late 1970s and early 1980s. The Institute for Fiscal Studies has investigated some of the possible reasons for the higher level of inequality since 1990. There has been an increase in wage inequality, and particularly an increase in the gap between wages for skilled and unskilled workers. Suggested reasons include skills-biased technological change, a decline in the role of trade unions, and a growth in self-employment income.

There has also been a decrease in the rate of male participation in the labour market, often in households where there is no other earner, as well as increased female participation among those with working partners. This has led to an increased polarisation between two-earner and zero-earner households. In the late 1990s, the proportion of people in workless households started to fall slowly, probably contributing to the small reduction in inequality of original income seen since 2001/02.

The difference between the Gini coefficients for original and post-tax income can be seen as a measure of monetary redistribution through the tax and benefit system (that is, one which excludes the effect of benefits in kind). To some extent this will be cyclical. While the Gini coefficient for original income was rising steadily throughout the 1980s, the Gini coefficient for post-tax income was stable for the first half of the 1980s but then rose sharply in the second half of the decade. This implies that through the early 1980s there was an increasing amount of redistribution, with a decreasing amount through the late 1980s.

Through the recession of the early 1990s and the subsequent early recovery, inequality of original income increased but more slowly, and increasing redistribution saw inequality of post-tax income gradually fall until 1995/96. In the late 1990s, inequality of original income was largely unchanged while the amount of redistribution started to decline

again and this resulted in a gradual increase in inequality of post-tax income until 2001/02.

## Results for non-retired households

### Overall effect

As for all households, the tax and benefit systems lead to income being shared more equally between non-retired households. Before government intervention, original income is shared more equally between non-retired households, as shown in **Table 5**, than for all households, as shown in **Table 2**. However, after the process of redistribution, the shares of income and Gini coefficients for post-tax income are very similar to those for all households. The redistribution effect is therefore smaller for non-retired households than for all households. A summary of the effects of taxes and benefits on non-retired households is shown in **Table 6**.

### Characteristics of non-retired households

Unlike for all households, the average household size tends to decrease as income increases. This fall is largely accounted for by the decrease in the average number of children in each household, from 1.0 in the bottom quintile group to 0.4 in the top.

Although one-adult households with children tend to be concentrated lower down the income distribution, this tendency is slightly less pronounced than it used to be. In 1998/99, 75 per cent of one-adult households with children were

in the bottom four deciles, which compares with 68 per cent in 2006/07.

### Original income

The average original income for non-retired households is £37,600 (**Table 6**). As mentioned above, inequality of original income is lower for non-retired households than for all households. The ratio of the averages for the top and bottom quintiles is ten to one (compared with 15 to one for all households).

The original income of households shows a relatively strong relationship to the number of economically active people they contain. On average, households in the top three quintile groups contain almost twice as many economically active people as those in the lowest group (**Table 6**).

### Cash benefits

**Table 7** gives a summary of the cash benefits that each quintile group receives. There are two types of cash benefits: contributory benefits which are paid from the National Insurance Fund (to which individuals and their employers make contributions while working) and non-contributory benefits. For non-retired households, non-contributory benefits make up nearly three-quarters of all cash benefits on average.

Most non-contributory benefits, particularly income support, tax credits and housing benefit, are income-related, and so payments are concentrated in the two lowest quintile groups. The presence of some individuals with low incomes in high income households means that some

Table 5

### Percentage shares of household income and Gini coefficients<sup>1</sup> for non-retired households, 2006/07

	Percentage shares of equivalised income for non-retired households <sup>2</sup>			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group <sup>2</sup>				
Bottom	4	6	7	6
2nd	10	11	12	11
3rd	16	16	17	16
4th	24	23	23	22
Top	46	43	42	44
All non-retired households	100	100	100	100
Decile group <sup>2</sup>				
Bottom	1	2	3	2
Top	30	28	27	29
Gini coefficient (per cent)	45	37	35	39

#### Notes:

- 1 This is a measure of the dispersion of each definition of income (see Appendix 2, paragraph 53).
- 2 Households are ranked by equivalised disposable income.



Table 6

**Summary of the effects of taxes and benefits: by quintile groups on non-retired households,<sup>1</sup> 2006/07**

	Quintile groups of non-retired households <sup>1</sup>						Ratio
	Bottom	2nd	3rd	4th	Top	All non-retired households	top/bottom quintile
Income, taxes and benefits per household (£ per year)							
Original income	7,760	20,660	32,380	46,060	81,110	37,590	10
<i>plus</i> cash benefits	5,960	4,640	2,530	1,610	1,090	3,170	0.2
Gross income	13,720	25,310	34,910	47,660	82,200	40,760	6
<i>less</i> direct taxes <sup>2</sup> and employees' NICs	1,590	4,320	7,380	11,270	20,710	9,050	13
Disposable income	12,130	20,980	27,530	36,400	61,480	31,700	5
<i>less</i> indirect taxes	3,810	4,680	5,410	6,460	7,760	5,620	2
Post-tax income	8,320	16,300	22,120	29,940	53,720	26,080	6
<i>plus</i> benefits in kind	8,270	6,690	5,460	4,560	3,550	5,700	0.4
Final income	16,590	22,990	27,580	34,500	57,270	31,780	3
Number of individuals per household							
Children <sup>3</sup>	1.0	0.9	0.7	0.5	0.4	0.7	
Adults	1.9	2.0	2.0	2.0	1.9	2.0	
Men	0.9	1.0	1.0	1.1	1.0	1.0	
Women	1.0	1.0	1.0	1.0	0.9	1.0	
People	2.9	2.9	2.7	2.6	2.2	2.7	
People in full-time education	1.1	0.9	0.6	0.5	0.3	0.7	
Economically active people	1.0	1.5	1.8	1.9	1.8	1.6	
Retired people	0.1	0.1	0.1	0.1	0.0	0.1	

**Notes:**

- Households are ranked by equivalised disposable income.
- These are income tax (which is after deducting tax credits and tax relief at source on life assurance premiums), council tax and Northern Ireland rates, but after deducting discounts, council tax benefit and rates rebates.
- Children are defined as people aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

Table 7

**Cash benefits for non-retired households: by quintile groups,<sup>1</sup> 2006/07**

	Quintile groups of non-retired households <sup>1</sup>					
	Bottom	2nd	3rd	4th	Top	All non-retired households
<b>Average per household (£ per year)</b>						
<b>Contributory</b>						
Retirement pension	240	660	640	510	420	490
Incapacity benefit	630	410	180	100	10	270
Jobseeker's allowance <sup>2</sup>	60	20	10	0	-	20
Other	20	90	80	120	170	90
Total contributory	940	1,180	910	730	590	870
<b>Non-contributory</b>						
Income support <sup>3</sup>	1,090	510	150	50	20	360
Tax credits <sup>4</sup>	970	840	210	60	30	420
Child benefit	780	710	510	400	280	530
Housing benefit	1,250	590	170	70	10	420
Jobseeker's allowance <sup>5</sup>	180	40	10	0	0	50
Sickness/disability related	460	600	420	210	50	350
Other	290	180	150	80	100	160
Total non-contributory	5,020	3,460	1,610	880	490	2,290
Total cash benefits	5,960	4,640	2,530	1,610	1,090	3,170
Cash benefits as a percentage of gross income	43	18	7	3	1	8

**Notes:**

- Households are ranked by equivalised disposable income.
- Contribution-based.
- Including pension credit.
- Child tax credit and working tax credit.
- Income-based.

payments are recorded further up the income distribution. Of the total amount of income support, tax credits and housing benefit paid to non-retired households, 87 per cent goes to the bottom two-fifths, with the majority of this going to the bottom quintile.

Child benefit is based on the number of children in the household. Levels of child benefit received are also higher at the lower end of the distribution, as these households tend to have more children.

In contrast to non-contributory benefits, a criterion for receipt of contributory benefits is the amount of NICs that have been paid by, or on behalf of, the individual. The amounts received from these benefits are also higher in the lower half of the distribution, but to a lesser extent than for non-contributory benefits.

Cash benefits provide 43 per cent of gross income for households in the bottom quintile group, falling to just 1 per cent for households in the top quintile. Their payment results in a significant reduction in income inequality.

**Direct and indirect taxes**

**Table 8** and **Table 9** show the payment of direct and indirect taxes by non-retired households only. The patterns are similar to those described for all households. As noted for all households, NICs as a proportion of gross income increase from the first to the fourth quintile group, but are then lower for the top fifth of households. In 2006/07, employees' NICs were levied at 11 per cent on weekly earnings from £97 to £645 and at 1 per cent above this. Many people in households in the top quintile group will have a significant part of their earnings taxed at this lower rate.

**Benefits in kind**

The Government provides certain goods and services to households either free at the time of use or at subsidised prices. This study allocates these benefits in kind to individual households in order to arrive at final income. The largest two categories for which such imputations are made are health and education services. The imputed value of these benefits is based on the estimated cost of providing them. This expenditure on health and education, which is allocated to households, is equivalent to around 28 per cent of total general government expenditure. Other items for which imputations are made are free school meals and welfare milk, housing subsidy and travel subsidies. These items are

Table 8

**Taxes as a percentage of gross income for non-retired households: by quintile groups,<sup>1</sup> 2006/07**

	Quintile groups of non-retired households <sup>1</sup>					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Direct taxes						
Income tax <sup>2</sup>	4.5	8.8	12.3	15.1	19.1	14.7
Employees' NICs	2.7	4.9	5.8	6.2	4.5	5.1
Council tax and NI rates <sup>3</sup>	4.4	3.5	2.9	2.4	1.6	2.4
All direct taxes	11.6	17.1	21.1	23.6	25.2	22.2
All indirect taxes	27.8	18.5	15.5	13.5	9.4	13.8
All taxes	39.4	35.6	36.6	37.2	34.6	36.0

**Notes:**

- Households are ranked by equivalised disposable income.
- After deducting tax credits and tax relief at source on life assurance premiums.
- Council tax and Northern Ireland rates after deducting discounts, council tax benefit and rates rebates.

Table 9

**Indirect taxes as a percentage of disposable income and household expenditure<sup>1</sup> for non-retired households: by quintile groups,<sup>2</sup> 2006/07**

	Quintile groups of non-retired households <sup>2</sup>					All non-retired households
	Bottom	2nd	3rd	4th	Top	
<b>(a) Percentages of disposable income</b>						
VAT	12.2	8.9	8.2	7.7	5.7	7.5
Duty on alcohol	1.5	1.2	1.2	1.1	0.7	1.0
Duty on tobacco	3.3	2.1	1.4	0.9	0.4	1.1
Duty on hydrocarbon oils and vehicle excise duty	3.5	2.8	2.6	2.4	1.5	2.2
Other indirect taxes	10.9	7.3	6.2	5.7	4.4	5.9
All indirect taxes	31.4	22.3	19.6	17.7	12.6	17.7
<b>(b) Percentages of expenditure<sup>1</sup></b>						
VAT	7.8	7.8	7.6	7.4	6.9	7.4
Duty on alcohol	1.0	1.0	1.1	1.1	0.8	1.0
Duty on tobacco	2.1	1.8	1.3	0.9	0.4	1.1
Duty on hydrocarbon oils and vehicle excise duty	2.2	2.5	2.4	2.3	1.8	2.2
Other indirect taxes	7.0	6.4	5.8	5.5	5.3	5.8
All indirect taxes	20.1	19.5	18.2	17.2	15.2	17.5

**Notes:**

- Calculated to be consistent with disposable income. See paragraph 35 of Appendix 2 for the definition of expenditure.
- Households are ranked by equivalised disposable income.

Table 10

**Benefits in kind for non-retired households: by quintile groups,<sup>1</sup> 2006/07**

	Quintile groups of non-retired households <sup>1</sup>					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Education	5,130	3,350	2,520	1,720	1,000	2,750
National Health Service	2,900	3,190	2,820	2,730	2,400	2,810
Housing subsidy	40	20	10	0	0	20
Travel subsidies	80	80	90	90	140	100
School meals and welfare milk	100	40	10	10	0	30
All benefits in kind	8,270	6,690	5,460	4,560	3,550	5,700
Benefits in kind as a percentage of post-tax income	99	41	25	15	7	22

**Note:**

- Households are ranked by equivalised disposable income.

equivalent to a further 1 per cent of general government expenditure. **Table 10** gives a summary of the value of these benefits for each quintile group for non-retired households.

The benefit in kind from education is allocated to a household according to its members' use of state education (Appendix 2, paragraph 38). Households in the lower quintiles receive the highest benefit from education, as shown in Table 10. This is due to the concentration of children in this part of the distribution. In addition, children in households in the higher quintiles are more likely to be attending private schools, and an allocation is not made in these cases. Free school meals and welfare milk go predominantly to lower income groups, where children are more likely to have school meals provided free of charge.

The benefit from the health service is estimated according to the age and sex of the household members rather than their actual use of the service, as the EFS does not contain this information (Appendix 2, paragraph 40). The imputed benefit is relatively high for young children, low in later childhood and through the adult years until it begins to rise from late middle age onwards. This benefit is similar in the bottom two quintiles, then falls gradually as income rises, as shown in Table 10. This pattern is a reflection of the demographic composition of households. Studies by Sefton (1997, 2002) have attempted to allow for variations in use of the health service according to socio-economic characteristics.

The benefit imputed to households for the National Health Service has risen in recent years, reflecting increased government spending on health. Throughout the 1990s, it was equivalent to around 9 per cent of average post-tax income for non-retired households. From 2001/02 onwards, the benefit increased and by 2006/07 was equivalent to 11 per cent of post-tax income, or an average of £2,800 per year.

The housing subsidy, which excludes housing benefit (Appendix 2, paragraph 41), has fallen in recent years as the proportion of households in public sector, housing association and Registered Social Landlord housing has declined, and government housing assistance policy has moved away from subsidising rents directly.

Travel subsidies cover the support payments made to bus and train operating companies. The use of public transport by non-retired households is partly related to

the need to travel to work and therefore to the number of economically active people in a household. This results in estimates of these subsidies being higher for households in higher income quintiles. This pattern is also due to London and the South East having higher levels of commuting by public transport together with higher than average household incomes.

Taken together, the absolute value of these benefits in kind declines as household income increases. The ratio of benefits in kind to post-tax income decreases from 99 per cent for the lowest quintile group to 7 per cent for the highest. This indicates that these benefits contribute to the reduction of inequality.

### The effects of taxes and benefits by household type

The tax and benefit systems affect different types of household in different ways reflecting, in part, the number and ages of people within each household type. Of the types of non-retired households shown in **Figure 7**, only those containing one adult and children make significant net gains, with average final incomes of £21,800 compared with original incomes of £11,700. Households with two adults and three or more children are also net beneficiaries, but to a smaller extent.

Original income is strongly related to the number of adults in the household. For two-adult households, those with children have broadly similar levels of original income to those without, but they receive more cash benefits such as tax credits and child benefit than those without children. Final incomes are also higher for those with children due to the imputed benefit in kind from education.

For one-adult households, original income is much lower for those with children as the adult is less likely to be economically active. Benefits, both in cash and in kind, are significantly higher for those with children.

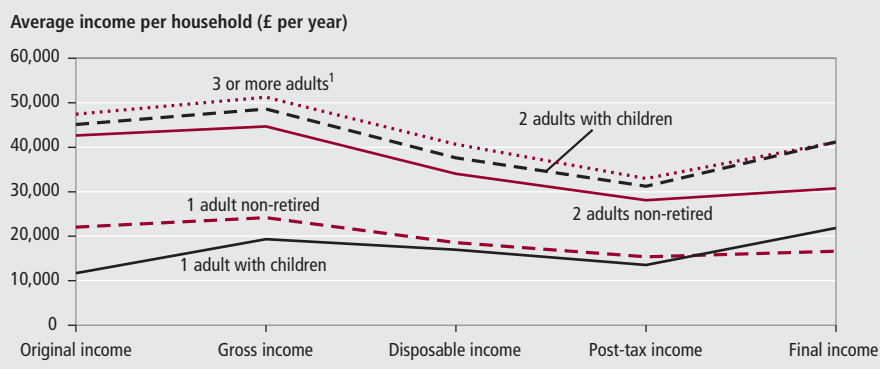
### Results for retired households

In this analysis, retired households are those where the income of retired household members accounts for more than half of the household gross income (see Appendix 2, paragraph 9 for the definition of a retired person). These households have quite distinct income and expenditure patterns. The tax and benefit systems affect them in different ways from non-retired households.

Retired households are much more likely to be towards the bottom of the income

**Figure 7**

### Income stages: by non-retired household types, 2006/07



**Note:**

1 With or without children.

distribution. Of retired households with two or more adults, 61 per cent are in the bottom two quintile groups. One-adult male households are slightly less concentrated towards the bottom of the income distribution, with 58 per cent in the lowest two quintiles. However, among one-adult female households, which outnumber one-adult male households by about three to one, 66 per cent are in the bottom two quintiles. These patterns have changed very little over the last ten years.

Among retired households, there is a high degree of inequality in original income. **Table 11** shows that, before government intervention, the richest fifth of retired households receive 57 per cent of total original income, while the Gini coefficient for this measure of income is 62 per cent. Both these measures are higher (showing more inequality) than equivalent figures for non-retired households. After

the impact of taxes and benefits, there is a large reduction in inequality. Cash benefits play by far the largest part in bringing about this reduction. Payment of direct taxes makes a further, though much smaller, contribution. Payments of indirect taxes result in an increase in inequality.

Overall, retired households receive an average of £9,000 in original income, with most of this coming from occupational pensions and investments (**Table 12**). Original income ranges from £1,900 for the bottom quintile group to £26,000 for the top. On the other hand, amounts received from cash benefits vary less across the distribution. On average, households in the bottom fifth receive around £6,500 from this source, while those in the second to fifth quintile groups receive between £8,600 and £9,700. These cash benefits make up large proportions of the gross incomes for the bottom four quintiles, ranging from

**Table 11**

### Percentage shares of household income and Gini coefficients<sup>1</sup> for retired households, 2006/07

	Percentage shares of equivalised income for retired households <sup>2</sup>			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group <sup>2</sup>				
Bottom	4	10	10	9
2nd	8	14	14	14
3rd	11	17	17	17
4th	20	22	22	22
Top	57	39	37	38
All households	100	100	100	100
Decile group <sup>2</sup>				
Bottom	2	4	4	3
Top	40	24	23	24
Gini coefficient (per cent)	62	29	27	31

**Notes:**

- 1 This is a measure of the dispersion of each definition of income (see Appendix 2, paragraph 53).
- 2 Households are ranked by equivalised disposable income.

Table 12

**Summary of the effects of taxes and benefits: by quintile groups on retired households,<sup>1</sup> 2006/07**

	Quintile groups of retired households <sup>1</sup>					All retired households
	Bottom	2nd	3rd	4th	Top	
Income, taxes and benefits per household (£ per year)						
Original income						
Earnings	70	180	200	590	1,510	510
Occupational pensions	1,410	2,630	3,850	7,390	17,860	6,630
Investment income	410	410	470	1,070	6,570	1,790
Other income	30	60	100	140	50	70
Total original income	1,930	3,280	4,610	9,190	25,980	9,000
<i>plus</i> Contributory benefits	5,300	6,880	6,760	6,800	6,870	6,520
Non-contributory benefits	1,230	1,670	2,490	2,870	1,870	2,030
Total cash benefits	6,540	8,560	9,240	9,670	8,740	8,550
Gross income	8,470	11,840	13,850	18,860	34,730	17,550
<i>less</i> Income tax <sup>2</sup>	240	370	620	1,360	4,630	1,440
Employees' NICs	10	10	10	30	110	30
Council tax and Northern Ireland rates <sup>3</sup>	800	720	660	890	1,250	860
Disposable income	7,420	10,740	12,570	16,580	28,730	15,210
<i>less</i> Indirect taxes	2,120	2,400	2,710	3,030	5,040	3,060
Post-tax income	5,300	8,340	9,860	13,550	23,690	12,150
<i>plus</i> National Health Service	5,580	5,490	5,190	5,320	4,910	5,300
Housing subsidy	10	10	30	20	10	20
Other benefits in kind	250	150	200	200	160	190
Final income	11,140	13,990	15,280	19,100	28,770	17,660
Cash benefits as a percentage of gross income	77	72	67	51	25	49
Retirement pension as a percentage of cash benefits	79	79	71	69	79	75

**Notes:**

- 1 Households are ranked by equivalised disposable income.
- 2 After deducting tax credits and tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts, council tax benefit and rates rebates.

77 per cent for the bottom quintile group to 51 per cent for the fourth quintile group. The top fifth are much less dependent on cash benefits – these account for only 25 per cent of their gross incomes.

Most retired people will have made contributions to the National Insurance Fund throughout their working lives. The bulk of the benefits which retired households receive will be paid out of this fund in the form of contributory benefits. The most significant of these is the state retirement pension, which on average accounts for three-quarters of their cash benefits.

Non-contributory benefits are lowest in the bottom two quintile groups.

housing benefit and disability benefits can sometimes make up a significant proportion of the income of retired households, who as a result will appear higher up the income distribution. However, this does not necessarily mean that they have a higher standard of living. Households receiving housing benefit are likely to have higher housing costs than owner-occupiers, and similarly the income from disability benefits may be offset by additional costs incurred by the individual due to their illness or disability.

Retired households derive significant benefits from health services. Health benefit is spread fairly evenly between retired

households and in 2006/07 was worth an average of £5,300. This is close to twice the figure for non-retired households, and increases their post-tax income by 44 per cent. The benefits received by retired households from travel subsidies are mainly for bus travel, particularly in the form of concessionary fares and passes for senior citizens and, since these are not usually means-tested, there is no particular relationship with income.

Overall, retired households are major beneficiaries from redistribution through the tax and benefit system. Retired households with two or more adults have an average original income of £13,000, but a final income of £22,000. The corresponding figures for one-adult households are £5,000 and £13,400. Among one-adult households, women have a lower original income than men, but after the addition of benefits and the deduction of taxes, the differences are greatly reduced.

**ACKNOWLEDGEMENTS**

The author gratefully acknowledges the considerable work done for this study by Edward Franklyn and Daniel Annan.

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# Appendix 1

Table 13 (Appendix 1)

## Taxes and benefits allocated to households as a percentage of general government expenditure, 2006

Taxes and compulsory social contributions <sup>1</sup> allocated to households			Benefits allocated to households		
	£ million	% of GGE <sup>2</sup>		£ million	% of GGE <sup>2</sup>
Income tax (gross)	137,620	24.3	Cash benefits		
Tax reliefs	-40	0.0			
Income tax (net)	137,580	24.3	Contributory (National Insurance, etc)		
Employees' & self-employed NI contributions	39,350	6.9	Retirement	53,200	9.4
Council tax	22,030	3.9	Incapacity benefit	6,690	1.2
			Widows' and guardians' allowances	820	0.1
			Maternity/Statutory maternity pay	1,490	0.3
			Job seekers allowance	480	0.1
			Social fund	2,270	0.4
			Other	280	0.0
Taxes on final goods and services			Non-contributory		
VAT	58,290	10.3	Income support	15,940	2.8
Duty on hydrocarbon oils	11,830	2.1	Working and child tax credits	13,730	2.4
Duty on tobacco	7,850	1.4	Other family benefits	10,110	1.8
Vehicle excise duty	4,030	0.7	War pensions	1,000	0.2
Duty on wines, cider, perry and spirits	4,460	0.8	Other	22,250	3.9
Duty on beer	2,860	0.5			
Betting duties	880	0.2	Student support	990	0.2
Camelot: payments to NLDF	1,320	0.2	Rent rebates and allowances	14,500	2.6
Stamp duty on house purchase	3,570	0.6			
Other	2,270	0.4			
Taxes & NI contributions on Intermediate goods & services <sup>3</sup>			Benefits in kind		
Employers' NI contributions	16,920	3.0	Health services	90,160	15.9
Commercial & industrial rates	9,740	1.7	Education	65,730	11.6
Duty on hydrocarbon oils	5,940	1.0	Travel subsidies <sup>4</sup>	2,510	0.4
VAT	4,210	0.7	Housing subsidy	410	0.1
Vehicle excise duty	500	0.1	School meals and welfare milk	1,120	0.2
Other	5,100	0.9			
Total	338,730	59.8	Total	303,680	53.6
Total government expenditure	566,290				

### Notes:

1 Paid to UK central and local government and European Union institutions.

2 Expressed as a percentage of general government expenditure.

3 These are taxes paid by industry and commerce assumed to be passed on to households in the prices of goods and services they buy. For instance, duty on derv used in the transportation of goods is an 'intermediate' tax whereas the duty on petrol bought by the private motorist is a tax on final goods and services.

4 Including concessionary fares expenditure.

Source: United Kingdom National Accounts, 2007 Edition.



Table 14 (Appendix 1)

## Average incomes, taxes and benefits by decile groups of ALL households, 2006/07

	Decile groups of all households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (£ per year)											
Decile points (equivalised £)	10,323	12,933	15,497	18,001	20,891	24,298	28,597	34,717	45,291		
Number of households in the population ('000s)	2,479	2,488	2,482	2,483	2,482	2,486	2,483	2,481	2,486	2,486	24,836
Original income											
Wages and salaries	2,072	3,994	6,808	10,254	15,527	20,147	27,283	34,049	41,176	68,693	23,000
Imputed income from benefits in kind	21	11	16	50	119	239	237	463	793	1,303	325
Self-employment income	585	690	685	852	1,692	1,609	2,273	2,657	5,346	13,974	3,036
Occupational pensions, annuities	483	1,046	1,600	1,938	2,488	2,701	2,800	3,403	3,307	4,548	2,431
Investment income	301	223	239	365	564	554	997	1,453	1,866	4,320	1,088
Other income	199	177	143	160	263	252	128	219	237	213	199
Total	3,661	6,141	9,491	13,618	20,653	25,503	33,718	42,243	52,724	93,051	30,080
Direct benefits in cash											
Contributory											
Retirement pension	1,806	2,812	3,354	2,997	2,484	1,995	1,736	1,415	957	909	2,047
Job seeker's allowance (Contribution based)	52	37	36	15	2	10	2	2	1	-	16
Incapacity benefit	393	434	391	394	190	173	106	123	27	9	224
Widows' benefits	8	20	10	62	14	7	29	-	13	15	18
Statutory Maternity Pay/Allowance	7	-	11	14	34	52	66	82	114	151	53
Non-contributory											
Income support and pension credit	720	1,064	710	547	277	336	182	56	86	20	400
Child benefit	471	485	457	448	404	396	388	371	294	244	396
Housing benefit	717	1,004	880	798	439	379	140	83	43	-	448
Job seeker's allowance (Income based)	184	108	27	7	31	9	-	-	13	-	38
Carer's allowance	34	66	93	58	64	40	51	8	3	4	42
Attendance allowance	19	41	64	88	59	72	53	24	-	3	42
Disability living allowance	213	279	357	451	463	376	304	131	64	37	268
War pensions/War widows' pensions	2	1	37	27	36	49	33	57	22	3	27
Severe disablement allowance	10	42	34	53	51	68	52	4	36	14	36
Industrial injury disablement benefit	16	19	16	29	24	15	13	15	2	6	15
Student support	108	176	65	72	53	124	18	36	35	4	69
Government training schemes	11	15	5	5	9	3	2	4	-	1	5
Tax credits <sup>1</sup>	491	693	632	520	374	209	97	48	36	12	311
Other non-contributory benefits <sup>2</sup>	151	177	156	158	134	122	110	57	140	42	125
Total cash benefits	5,415	7,475	7,335	6,744	5,142	4,435	3,383	2,516	1,885	1,473	4,580
Gross income	9,076	13,616	16,826	20,362	25,795	29,938	37,100	44,759	54,609	94,524	34,661
Direct taxes and Employees' NIC											
Income tax	318	657	1,122	1,757	2,711	3,573	5,040	6,623	8,790	18,944	4,954
less: Tax credits <sup>3</sup>	35	135	232	256	210	215	185	128	70	17	148
Employees' NI contributions	118	250	467	685	1,089	1,458	2,007	2,539	3,052	3,617	1,528
Council tax and Northern Ireland rates <sup>4</sup>	955	960	976	976	1,044	1,085	1,122	1,189	1,244	1,383	1,093
less: Council tax benefit/Rates rebates	277	340	249	212	98	102	47	20	12	9	137
Total	1,078	1,392	2,084	2,950	4,537	5,799	7,938	10,202	13,003	23,918	7,290
Disposable income	7,998	12,224	14,742	17,412	21,259	24,138	29,162	34,557	41,606	70,606	27,370
Equivalised disposable income	7,420	11,665	14,203	16,749	19,403	22,516	26,351	31,349	39,103	69,547	25,831
Indirect taxes											
Taxes on final goods and services											
VAT	1,238	1,262	1,360	1,484	1,809	1,945	2,421	2,736	2,945	3,840	2,104
Duty on tobacco	253	307	376	359	350	324	384	276	232	198	306
Duty on beer and cider	70	70	70	82	114	139	161	155	167	167	120
Duty on wines & spirits	79	81	82	109	131	145	177	201	211	263	148
Duty on hydrocarbon oils	252	265	308	337	425	471	540	669	649	710	463
Vehicle excise duty	81	83	95	102	134	141	165	179	194	210	138
Television licences	103	96	97	116	106	109	116	121	124	125	111
Stamp duty on house purchase	71	53	51	70	97	109	153	216	267	501	159
Customs duties	20	20	21	23	25	27	31	35	39	50	29
Betting taxes	25	29	45	37	37	30	40	48	37	37	36
Insurance premium tax	25	27	27	34	41	46	53	62	64	88	47
Air passenger duty	10	18	10	21	25	33	29	48	56	58	31
Camelot National Lottery Fund	45	57	55	57	61	56	57	57	47	42	53
Other	10	5	6	27	12	8	21	20	38	37	18
Intermediate taxes											
Commercial and industrial rates	186	185	190	208	234	253	288	320	356	460	268
Employers' NI contributions	328	325	336	366	412	445	508	565	628	811	472
Duty on hydrocarbon oils	112	111	115	125	141	152	174	193	215	277	162
Vehicle excise duty	9	9	10	10	12	13	14	16	18	23	13
Other	189	187	193	211	237	257	292	325	361	467	272
Total indirect taxes	3,107	3,191	3,447	3,777	4,401	4,703	5,624	6,244	6,645	8,364	4,950
Post-tax income	4,891	9,033	11,294	13,635	16,858	19,435	23,538	28,313	34,961	62,243	22,420
Benefits in kind											
Education	4,074	2,642	2,046	2,267	1,977	2,132	1,676	1,568	1,196	839	2,042
National health service	3,727	4,097	4,292	3,906	3,666	3,460	3,150	3,036	2,768	2,512	3,462
Housing subsidy	28	41	24	26	20	15	5	4	3	0	17
Rail travel subsidy	28	9	15	10	22	30	38	47	52	103	36
Bus travel subsidy	81	84	81	86	76	70	65	60	45	69	72
School meals and welfare milk	65	78	36	28	13	8	7	4	3	1	24
Total	8,003	6,951	6,495	6,324	5,774	5,715	4,942	4,719	4,067	3,524	5,651
Final income	12,894	15,984	17,789	19,958	22,632	25,150	28,480	33,032	39,028	65,767	28,071

## Notes:

- 1 Child tax credit and working tax credit.
- 2 There were no age-related payments in 2006/07.
- 3 Including tax relief at source on life assurance premiums.
- 4 Council tax and Northern Ireland rates after deducting discounts.

Table 14A (Appendix 1)

## Average incomes, taxes and benefits by quintile groups of ALL households, 2006/07

	Quintile groups of all households ranked by equivalised disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Quintile points (equivalised £)	12,933	18,001	24,298	34,717		
Number of households in the population ('000s)	4,967	4,965	4,968	4,965	4,972	24,836
Original income						
Wages and salaries	3,033	8,531	17,837	30,666	54,934	23,000
Imputed income from benefits in kind	16	33	179	350	1,048	325
Self-employment income	637	768	1,650	2,465	9,660	3,036
Occupational pensions, annuities	764	1,769	2,595	3,101	3,928	2,431
Investment income	262	302	559	1,225	3,093	1,088
Other income	188	151	257	174	225	199
Total	4,901	11,554	23,078	37,980	72,888	30,080
Direct benefits in cash						
Contributory						
Retirement pension	2,309	3,176	2,239	1,576	933	2,047
Job seeker's allowance (Contribution based)	45	25	6	2	1	16
Incapacity benefit	413	392	181	115	18	224
Widows' benefits	14	36	10	14	14	18
Statutory Maternity Pay/Allowance	4	12	43	74	133	53
Non-contributory						
Income support and pension credit	892	629	307	119	53	400
Child benefit	478	452	400	380	269	396
Housing benefit	860	839	409	111	22	448
Job seeker's allowance (Income based)	146	17	20	-	6	38
Carer's allowance	50	76	52	30	4	42
Attendance allowance	30	76	66	38	1	42
Disability living allowance	246	404	420	218	50	268
War pensions/War widows' pensions	2	32	42	45	13	27
Severe disablement allowance	26	44	59	28	25	36
Industrial injury disablement benefit	18	22	20	14	4	15
Student support	142	69	89	27	19	69
Government training schemes	13	5	6	3	1	5
Tax credits <sup>1</sup>	592	576	292	73	24	311
Other non-contributory benefits <sup>2</sup>	164	157	128	83	91	125
Total cash benefits	6,445	7,040	4,788	2,949	1,679	4,580
Gross income	11,346	18,594	27,867	40,929	74,567	34,661
Direct taxes and Employees' NIC						
Income tax	487	1,440	3,142	5,831	13,867	4,954
/less: Tax credits <sup>3</sup>	85	244	212	156	44	148
Employees' NI contributions	184	576	1,274	2,273	3,334	1,528
Council tax and Northern Ireland rates <sup>4</sup>	958	976	1,064	1,155	1,313	1,093
/less: Council tax benefit/Rates rebates	309	230	100	33	11	137
Total	1,235	2,517	5,168	9,070	18,460	7,290
Disposable income	10,111	16,077	22,699	31,860	56,106	27,370
Equivalised disposable income	9,543	15,476	20,960	28,850	54,325	25,831
Indirect taxes						
Taxes on final goods and services						
VAT	1,250	1,422	1,877	2,579	3,393	2,104
Duty on tobacco	280	368	337	330	215	306
Duty on beer and cider	70	76	127	158	167	120
Duty on wines & spirits	80	96	138	189	237	148
Duty on hydrocarbon oils	258	322	448	605	680	463
Vehicle excise duty	82	99	137	172	202	138
Television licences	99	106	108	118	125	111
Stamp duty on house purchase	62	60	103	185	384	159
Customs duties	20	22	26	33	44	29
Betting taxes	27	41	34	44	37	36
Insurance premium tax	26	31	43	58	76	47
Air passenger duty	14	15	29	39	57	31
Camelot National Lottery Fund	51	56	59	57	44	53
Other	7	17	10	21	37	18
Intermediate taxes						
Commercial and industrial rates	185	199	243	304	408	268
Employers' NI contributions	327	351	429	536	719	472
Duty on hydrocarbon oils	112	120	147	183	246	162
Vehicle excise duty	9	10	12	15	20	13
Other	188	202	247	309	414	272
Total indirect taxes	3,149	3,612	4,552	5,934	7,505	4,950
Post-tax income	6,962	12,464	18,147	25,926	48,602	22,420
Benefits in kind						
Education	3,358	2,156	2,054	1,622	1,017	2,042
National health service	3,912	4,099	3,563	3,093	2,640	3,462
Housing subsidy	35	25	17	4	1	17
Rail travel subsidy	18	13	26	43	78	36
Bus travel subsidy	83	83	73	62	57	72
School meals and welfare milk	71	32	11	5	2	24
Total	7,477	6,409	5,744	4,831	3,796	5,651
Final income	14,439	18,874	23,891	30,756	52,397	28,071

**Notes:**

- 1 Child tax credit and working tax credit.
- 2 There were no age-related payments in 2006/07.
- 3 Including tax relief at source on life assurance premiums.
- 4 Council tax and Northern Ireland rates after deducting discounts.

Table 15 (Appendix 1)

**Household characteristics of decile groups of ALL households, 2006/07**

	Decile groups of all households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (number)											
People	2.4	2.4	2.3	2.3	2.4	2.4	2.5	2.5	2.3	2.2	2.4
Adults	1.8	1.7	1.7	1.7	1.9	1.9	2.0	2.0	1.9	1.8	1.8
Men	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.0	0.9
Women	1.0	0.9	0.9	0.9	1.0	1.0	1.0	1.0	0.9	0.8	1.0
Children	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.3	0.5
Economically active people	0.6	0.6	0.7	0.9	1.2	1.3	1.5	1.6	1.7	1.6	1.2
Retired people	0.5	0.6	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.4
People in full-time education	0.81	0.65	0.53	0.56	0.51	0.51	0.46	0.44	0.34	0.30	0.51
In state primary schools	0.29	0.31	0.27	0.27	0.27	0.23	0.24	0.27	0.17	0.13	0.24
In state secondary schools	0.21	0.22	0.18	0.20	0.15	0.19	0.14	0.09	0.08	0.05	0.15
In further and higher education	0.27	0.10	0.05	0.08	0.08	0.08	0.04	0.05	0.05	0.03	0.08
In other educational establishments	0.04	0.01	0.02	0.01	0.02	0.01	0.03	0.03	0.04	0.09	0.03
Composition (percentages)											
Household type											
Retired											
1 adult	19	18	25	24	13	12	10	6	2	4	13
1 adult men	3	4	6	6	3	3	3	2	1	1	3
1 adult women	15	14	19	18	10	9	7	4	1	2	10
2 or more adults	17	23	22	17	15	10	8	8	5	4	13
Non-retired											
1 adult	15	12	8	11	15	16	12	15	20	22	15
1 adult men	9	7	5	6	7	8	7	9	11	14	8
1 adult women	5	5	3	5	8	9	6	7	10	8	6
2 adults	12	9	9	11	17	21	27	30	34	43	21
3 or more adults	8	4	5	5	11	11	13	12	14	6	9
1 adult with children	11	14	8	7	5	4	3	3	2	1	6
2 adults with 1 child	3	5	6	7	6	8	10	9	11	9	7
2 adults with 2 children	5	6	8	9	10	10	11	10	10	7	9
2 adults with 3 or more children	6	5	5	3	3	4	3	3	0	2	3
3 or more adults with children	4	5	5	5	5	4	3	3	1	3	4
Household tenure											
Rented											
Local authority rented	16	18	22	16	12	10	5	2	1	1	10
Housing association or RSL	9	13	12	12	5	5	4	1	1	0	6
Other rented unfurnished	7	8	7	7	8	7	7	5	6	3	6
Rented furnished	9	3	5	4	6	5	5	4	4	5	5
Rent free	2	1	1	2	2	2	1	1	1	1	1
Owner occupied											
With mortgage	19	17	19	28	34	41	49	60	62	63	39
Rental purchase	0	0	0	0	0	1	1	1	1	-	0
Owned outright	38	40	34	31	34	29	28	27	25	27	31
Age of chief economic supporter											
Under 25	9	5	4	3	3	4	4	2	2	0	4
Over 24 and under 35	10	13	10	10	13	13	14	17	21	22	14
Over 34 and under 45	17	17	18	18	19	21	24	26	24	25	21
Over 44 and under 55	18	15	12	13	18	18	21	22	25	24	19
Over 54 and under 65	17	12	13	17	19	19	17	19	19	20	17
Over 64 and under 75	13	17	22	20	15	12	10	9	6	6	13
Over 74	17	22	22	19	14	13	8	5	3	3	13
Employment status of chief economic supporter											
Self-employed	8	6	4	5	7	5	7	7	11	16	8
Full-time employee	6	13	23	32	46	55	65	71	74	73	46
Part-time employee	11	11	11	9	11	10	6	6	6	3	8
Unemployed	9	3	2	2	1	1	0	-	1	0	2
Unoccupied and under minimum NI age	34	28	14	12	7	6	3	3	2	2	11
Retired/unoccupied over minimum NI age	32	39	46	40	28	23	19	13	6	7	25
Other	0	0	0	-	-	-	-	-	-	-	0

Table 15A (Appendix 1)

**Household characteristics of quintile groups of ALL households, 2006/07**

	Quintile groups of all households ranked by equivalised disposable income					All
	Bottom	2nd	3rd	4th	Top	households
Average per household (number)						
People	2.4	2.3	2.4	2.5	2.2	2.4
<i>Adults</i>	1.7	1.7	1.9	2.0	1.9	1.8
<i>Men</i>	0.8	0.8	0.9	1.0	1.0	0.9
<i>Women</i>	1.0	0.9	1.0	1.0	0.9	1.0
<i>Children</i>	0.6	0.6	0.5	0.5	0.3	0.5
Economically active people	0.6	0.8	1.3	1.6	1.7	1.2
Retired people	0.6	0.7	0.4	0.3	0.2	0.4
People in full-time education	0.73	0.54	0.51	0.45	0.32	0.51
<i>In state primary schools</i>	0.30	0.27	0.25	0.25	0.15	0.24
<i>In state secondary schools</i>	0.22	0.19	0.17	0.12	0.07	0.15
<i>In further and higher education</i>	0.19	0.07	0.08	0.05	0.04	0.08
<i>In other educational establishments</i>	0.03	0.01	0.02	0.03	0.06	0.03
Composition (percentages)						
Household type						
Retired						
1 adult	18	24	13	8	3	13
<i>1 adult men</i>	3	6	3	3	1	3
<i>1 adult women</i>	15	18	9	6	2	10
2 or more adults	20	20	13	8	5	13
Non-retired						
1 adult	13	10	15	14	21	15
<i>1 adult men</i>	8	6	7	8	12	8
<i>1 adult women</i>	5	4	8	6	9	6
2 adults	10	10	19	28	38	21
3 or more adults	6	5	11	12	10	9
1 adult with children	12	8	4	3	2	6
2 adults with 1 child	4	6	7	9	10	7
2 adults with 2 children	6	9	10	11	9	9
2 adults with 3 or more children	5	4	3	3	1	3
3 or more adults with children	5	5	4	3	2	4
Household tenure						
Rented						
<i>Local authority rented</i>	17	19	11	4	1	10
<i>Housing association or RSL</i>	11	12	5	3	1	6
<i>Other rented unfurnished</i>	7	7	7	6	4	6
<i>Rented furnished</i>	6	4	6	4	5	5
<i>Rent free</i>	1	2	2	1	1	1
Owner occupied						
<i>With mortgage</i>	18	23	38	54	62	39
<i>Rental purchase</i>	0	0	0	1	0	0
<i>Owned outright</i>	39	33	31	28	26	31
Age of chief economic supporter						
Under 25	7	3	4	3	1	4
Over 24 and under 35	12	10	13	16	22	14
Over 34 and under 45	17	18	20	25	25	21
Over 44 and under 55	16	12	18	22	25	19
Over 54 and under 65	15	15	19	18	19	17
Over 64 and under 75	15	21	13	9	6	13
Over 74	19	20	13	7	3	13
Employment status of chief economic supporter						
Self-employed	7	4	6	7	13	8
Full-time employee	9	28	50	68	73	46
Part-time employee	11	10	10	6	4	8
Unemployed	6	2	1	0	1	2
Unoccupied and under minimum NI age	31	13	7	3	2	11
Retired/unoccupied over minimum NI age	35	43	25	16	7	25
Other	0	0	-	-	-	0

Table 16 (Appendix 1)

## Average incomes, taxes and benefits by decile groups of NON-RETIRED households, 2006/07

	Decile groups of non-retired households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (£ per year)											
Decile points (equivalised £)	10,762	14,123	17,480	20,328	23,553	27,267	31,705	37,749	49,371		
Number of households in the population ('000s)	1,831	1,827	1,835	1,830	1,832	1,830	1,832	1,831	1,831	1,832	18,311
Original income											
Wages and salaries	3,236	8,742	15,166	20,748	24,994	31,235	36,227	42,573	49,168	78,203	31,029
Imputed income from benefits in kind	28	30	62	153	292	276	404	710	994	1,446	440
Self-employment income	932	1,268	1,202	2,042	2,244	2,475	3,111	3,990	6,139	17,670	4,107
Occupational pensions, annuities	167	259	346	592	982	898	1,080	1,605	1,526	1,897	935
Investment income	200	118	175	372	325	521	669	1,311	1,054	3,644	839
Other income	263	276	203	263	322	196	264	169	249	231	243
Total	4,826	10,694	17,154	24,169	29,159	35,601	41,754	50,358	59,131	103,091	37,594
Direct benefits in cash											
Contributory											
Retirement pension	127	345	521	795	642	642	572	442	421	411	492
Job seeker's allowance (Contribution based)	79	36	33	12	14	0	5	3	-	-	18
Incapacity benefit	552	705	557	270	180	188	71	137	8	12	268
Widows' benefits	6	15	82	35	10	39	-	8	19	10	22
Statutory Maternity Pay/Allowance	10	8	20	44	67	42	130	96	116	189	72
Non-contributory											
Income support and pension credit	1,014	1,176	762	251	200	100	41	57	21	27	365
Child benefit	751	799	819	595	519	501	422	384	285	270	534
Housing benefit	1,187	1,315	781	408	235	99	69	76	13	-	418
Job seeker's allowance (Income based)	225	133	35	40	13	-	-	8	9	-	46
Carer's allowance	46	99	112	53	24	53	30	4	6	-	43
Attendance allowance	-	-	4	18	18	27	7	4	-	-	8
Disability living allowance	271	377	518	380	313	239	119	127	12	19	238
War pensions/War widows' pensions	-	2	13	-	36	1	39	21	26	4	14
Severe disablement allowance	17	59	23	37	55	43	30	25	17	-	31
Industrial injury disablement benefit	14	31	19	24	16	21	8	6	8	-	15
Student support	159	268	103	96	164	33	36	38	27	4	93
Government training schemes	18	23	5	14	3	2	1	4	-	2	7
Tax credits¹	840	1,099	1,059	614	272	141	100	17	45	16	420
Other non-contributory benefits	43	75	58	76	58	42	54	28	146	31	61
Total cash benefits	5,361	6,565	5,526	3,763	2,840	2,214	1,731	1,485	1,178	993	3,166
Gross income	10,187	17,258	22,680	27,932	31,999	37,814	43,485	51,844	60,309	104,084	40,759
Direct taxes and Employees' NIC											
Income tax	386	1,205	2,140	3,056	4,081	5,065	6,388	8,261	10,104	21,343	6,203
less: Tax credits²	63	299	454	306	274	254	164	122	53	8	200
Employees' NI contributions	178	575	1,027	1,439	1,811	2,272	2,731	3,139	3,530	3,907	2,061
Council tax and Northern Ireland rates³	901	928	988	1,019	1,041	1,101	1,132	1,199	1,238	1,379	1,093
less: Council tax benefit/Rates rebates	340	292	192	69	53	31	21	11	3	11	102
Total	1,063	2,116	3,510	5,139	6,606	8,152	10,067	12,466	14,816	26,609	9,054
Disposable income	9,124	15,142	19,169	22,793	25,392	29,662	33,419	39,378	45,493	77,475	31,705
Equivalised disposable income	7,581	12,380	15,818	18,875	21,891	25,294	29,399	34,697	42,550	76,316	28,480
Indirect taxes											
Taxes on final goods and services											
VAT	1,419	1,550	1,723	2,018	2,074	2,458	2,546	3,026	3,217	3,825	2,386
Duty on tobacco	339	473	426	460	320	462	335	316	245	188	357
Duty on beer and cider	88	93	98	131	174	165	185	178	175	173	146
Duty on wines & spirits	90	93	101	152	161	161	180	247	217	266	167
Duty on hydrocarbon oils	292	370	426	499	522	572	674	712	681	711	546
Vehicle excise duty	81	96	125	144	155	169	174	193	199	202	154
Television licences	125	121	146	121	124	124	125	127	127	129	127
Stamp duty on house purchase	64	54	80	96	114	143	182	233	295	559	182
Customs duties	24	24	26	28	29	32	34	39	41	51	33
Betting taxes	27	27	31	39	34	39	44	52	31	30	35
Insurance premium tax	24	29	38	44	48	52	55	66	64	86	50
Air passenger duty	12	17	20	21	27	29	35	53	53	55	32
Camelot National Lottery Fund	47	53	55	64	67	60	51	61	51	35	54
Other	13	7	27	13	3	23	22	20	37	37	20
Intermediate taxes											
Commercial and industrial rates	220	224	237	262	265	294	311	355	375	470	301
Employers' NI contributions	387	395	417	462	467	518	547	625	661	828	531
Duty on hydrocarbon oils	132	135	143	158	160	177	187	214	226	283	182
Vehicle excise duty	11	11	12	13	13	15	16	18	19	24	15
Other	223	228	240	266	269	298	315	360	380	477	306
Total indirect taxes	3,619	4,002	4,372	4,992	5,026	5,789	6,018	6,895	7,094	8,428	5,624
Post-tax income	5,505	11,140	14,797	17,801	20,366	23,872	27,401	32,483	38,399	69,047	26,081
Benefits in kind											
Education	5,976	4,294	3,827	2,880	2,801	2,249	1,869	1,572	1,147	852	2,747
National health service	2,822	2,977	3,348	3,028	2,902	2,730	2,774	2,691	2,457	2,344	2,807
Housing subsidy	55	34	27	15	18	5	6	2	1	0	16
Rail travel subsidy	35	17	17	29	34	47	25	68	63	110	44
Bus travel subsidy	57	58	58	59	52	55	51	44	49	66	55
School meals and welfare milk	110	99	57	27	11	9	6	4	2	1	33
Total	9,056	7,478	7,336	6,038	5,819	5,094	4,731	4,380	3,718	3,373	5,702
Final income	14,561	18,618	22,133	23,839	26,185	28,967	32,132	36,862	42,118	72,420	31,783

## Notes:

- 1 Child tax credit and working tax credit.
- 2 Including tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts.



Table 16A (Appendix 1)

**Average incomes, taxes and benefits by quintile groups of NON-RETIRED households, 2006/07**

	Quintile groups of non-retired households ranked by equivalised disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Quintile points (equivalised £)	14,123	20,328	27,267	37,749		
Number of households in the population ('000s)	3,658	3,664	3,662	3,663	3,663	18,311
Original income						
Wages and salaries	5,989	17,957	28,115	39,400	63,686	31,029
Imputed income from benefits in kind	29	107	284	557	1,220	440
Self-employment income	1,100	1,622	2,359	3,551	11,904	4,107
Occupational pensions, annuities	213	469	940	1,342	1,712	935
Investment income	159	273	423	990	2,349	839
Other income	269	233	259	216	240	243
Total	7,760	20,662	32,380	46,056	81,111	37,594
Direct benefits in cash						
Contributory						
Retirement pension	236	658	642	507	416	492
Job seeker's allowance (Contribution based)	57	22	7	4	-	18
Incapacity benefit	628	413	184	104	10	268
Widows' benefits	11	58	25	4	14	22
Statutory Maternity Pay/Allowance	9	32	54	113	152	72
Non-contributory						
Income support and pension credit	1,095	507	150	49	24	365
Child benefit	775	707	510	403	277	534
Housing benefit	1,251	594	167	72	6	418
Job seeker's allowance (Income based)	179	38	7	4	5	46
Carer's allowance	72	82	38	17	3	43
Attendance allowance	-	11	23	5	-	8
Disability living allowance	324	449	276	123	16	238
War pensions/War widows' pensions	1	7	18	30	15	14
Severe disablement allowance	38	30	49	27	8	31
Industrial injury disablement benefit	23	22	19	7	4	15
Student support	214	100	99	37	16	93
Government training schemes	21	10	3	3	1	7
Tax credits <sup>1</sup>	970	837	206	58	30	420
Other non-contributory benefits	59	67	50	41	88	61
Total cash benefits	5,963	4,644	2,527	1,608	1,086	3,166
Gross income	13,723	25,306	34,907	47,665	82,196	40,759
Direct taxes and Employees' NIC						
Income tax	795	2,598	4,573	7,325	15,723	6,203
less: Tax credits <sup>2</sup>	181	380	264	143	30	200
Employees' NI contributions	377	1,233	2,041	2,935	3,718	2,061
Council tax and Northern Ireland rates <sup>3</sup>	914	1,004	1,071	1,166	1,308	1,093
less: Council tax benefit/Rates rebates	316	131	42	16	7	102
Total	1,589	4,325	7,379	11,266	20,712	9,054
Disposable income	12,133	20,981	27,527	36,398	61,484	31,705
Equivalised disposable income	9,980	17,346	23,593	32,048	59,433	28,480
Indirect taxes						
Taxes on final goods and services						
VAT	1,485	1,871	2,266	2,786	3,521	2,386
Duty on tobacco	406	443	391	326	217	357
Duty on beer and cider	91	115	170	182	174	146
Duty on wines & spirits	91	126	161	213	242	167
Duty on hydrocarbon oils	331	462	547	693	696	546
Vehicle excise duty	89	134	162	184	200	154
Television licences	123	134	124	126	128	127
Stamp duty on house purchase	59	88	128	208	427	182
Customs duties	24	27	30	36	46	33
Betting taxes	27	35	36	48	30	35
Insurance premium tax	26	41	50	61	75	50
Air passenger duty	15	20	28	44	54	32
Camelot National Lottery Fund	50	59	63	56	43	54
Other	10	20	13	21	37	20
Intermediate taxes						
Commercial and industrial rates	222	250	280	333	422	301
Employers' NI contributions	391	440	493	586	744	531
Duty on hydrocarbon oils	134	150	168	200	254	182
Vehicle excise duty	11	13	14	17	21	15
Other	225	253	284	338	429	306
Total indirect taxes	3,811	4,682	5,408	6,456	7,761	5,624
Post-tax income	8,322	16,299	22,119	29,942	53,723	26,081
Benefits in kind						
Education	5,135	3,354	2,525	1,720	999	2,747
National health service	2,899	3,188	2,816	2,732	2,400	2,807
Housing subsidy	44	21	12	4	1	16
Rail travel subsidy	26	23	41	46	86	44
Bus travel subsidy	57	59	54	47	57	55
School meals and welfare milk	105	42	10	5	2	33
Total	8,267	6,687	5,457	4,555	3,546	5,702
Final income	16,589	22,986	27,576	34,497	57,269	31,783

**Notes:**

- 1 Child tax credit and working tax credit.
- 2 Including tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts.

Table 17 (Appendix 1)

**Household characteristics of decile groups of NON-RETIRED households, 2006/07**

	Decile groups of non-retired households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (number)											
People	2.9	3.0	3.0	2.8	2.7	2.7	2.6	2.5	2.3	2.2	2.7
Adults	1.9	1.9	1.9	2.1	2.0	2.0	2.0	2.1	2.0	1.8	2.0
Men	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0
Women	1.0	1.0	1.0	1.1	1.0	1.0	0.9	1.0	0.9	0.8	1.0
Children	1.0	1.1	1.1	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.7
Economically active people	0.9	1.1	1.4	1.7	1.7	1.8	1.9	1.9	1.8	1.7	1.6
Retired people	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
People in full-time education	1.23	1.06	0.95	0.76	0.66	0.61	0.52	0.44	0.34	0.32	0.69
In state primary schools	0.47	0.50	0.48	0.39	0.29	0.31	0.30	0.25	0.16	0.13	0.33
In state secondary schools	0.33	0.37	0.33	0.22	0.25	0.20	0.11	0.10	0.07	0.06	0.20
In further and higher education	0.37	0.16	0.11	0.11	0.10	0.06	0.07	0.05	0.04	0.03	0.11
In other educational establishments	0.05	0.02	0.02	0.03	0.02	0.03	0.03	0.04	0.05	0.10	0.04
Composition (percentages)											
Household type											
Non-retired											
1 adult	23	18	18	18	22	15	18	19	21	26	20
1 adult men	14	12	11	8	10	7	12	9	12	17	11
1 adult women	9	6	7	10	12	7	6	10	10	9	9
2 adults	17	16	16	24	26	33	33	35	41	46	29
3 or more adults	11	9	7	15	15	13	16	15	14	5	12
1 adult with children	18	19	14	7	5	5	4	2	2	1	8
2 adults with 1 child	6	8	13	9	10	11	11	11	10	10	10
2 adults with 2 children	9	11	16	15	12	15	12	12	10	7	12
2 adults with 3 or more children	9	8	7	5	5	3	3	2	0	2	4
3 or more adults with children	6	11	9	7	5	5	3	3	2	2	5
Household tenure											
Rented	61	60	44	36	27	24	19	13	13	11	31
Local authority rented	22	26	16	12	7	6	4	1	1	1	9
Housing association or RSL	14	15	12	5	5	3	2	1	1	-	6
Other rented unfurnished	9	11	9	9	8	7	6	5	6	3	7
Rented furnished	13	8	5	8	6	6	6	4	4	6	7
Rent free	3	1	1	1	1	2	2	1	1	1	1
Owner occupied	39	40	56	64	73	76	81	87	87	89	69
With mortgage	25	28	40	46	52	57	63	67	68	67	51
Rental purchase	0	0	1	-	1	-	1	0	1	-	0
Owned outright	14	12	16	18	21	18	16	19	19	22	17
Age of chief economic supporter											
Under 25	14	6	6	5	5	5	4	2	1	1	5
Over 24 and under 35	17	21	17	18	17	16	20	20	24	25	19
Over 34 and under 45	27	30	32	28	26	31	29	27	26	28	28
Over 44 and under 55	25	24	21	23	24	23	27	29	29	23	25
Over 54 and under 65	18	15	19	21	21	20	16	20	18	21	19
Over 64 and under 75	1	2	3	4	4	2	3	2	2	3	3
Over 74	1	2	1	2	2	2	1	0	0	1	1
Employment status of chief economic supporter											
Self-employed	11	10	7	10	8	8	8	9	12	19	10
Full-time employee	10	29	50	63	69	77	83	80	82	77	62
Part-time employee	17	19	19	14	13	9	6	7	5	3	11
Unemployed	12	6	3	2	1	0	0	1	1	0	3
Unoccupied and under minimum NI age	48	34	19	8	6	4	1	2	0	0	12
Retired/unoccupied over minimum NI age	1	2	2	3	3	2	1	1	-	0	2
Other	1	0	-	-	-	-	-	-	-	-	0

Table 17A (Appendix 1)

**Household characteristics of quintile groups of NON-RETIRED households, 2006/07**

	Quintile groups of non-retired households ranked by equivalised disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (number)						
People	2.9	2.9	2.7	2.6	2.2	2.7
Adults	1.9	2.0	2.0	2.0	1.9	2.0
Men	0.9	1.0	1.0	1.1	1.0	1.0
Women	1.0	1.0	1.0	1.0	0.9	1.0
Children	1.0	0.9	0.7	0.5	0.4	0.7
Economically active people	1.0	1.5	1.8	1.9	1.8	1.6
Retired people	0.1	0.1	0.1	0.1	0.0	0.1
People in full-time education	1.15	0.85	0.64	0.48	0.33	0.69
In state primary schools	0.49	0.44	0.30	0.28	0.15	0.33
In state secondary schools	0.35	0.28	0.22	0.11	0.07	0.20
In further and higher education	0.27	0.11	0.08	0.06	0.04	0.11
In other educational establishments	0.04	0.03	0.02	0.04	0.08	0.04
Composition (percentages)						
Household type						
Non-retired						
1 adult	21	18	18	19	24	20
1 adult men	13	10	9	11	14	11
1 adult women	8	9	10	8	9	9
2 adults	17	20	29	34	44	29
3 or more adults	10	11	14	15	9	12
1 adult with children	19	11	5	3	1	8
2 adults with 1 child	7	11	11	11	10	10
2 adults with 2 children	10	15	14	12	9	12
2 adults with 3 or more children	9	6	4	2	1	4
3 or more adults with children	8	8	5	3	2	5
Household tenure						
Rented	61	40	25	16	12	31
Local authority rented	24	14	6	2	1	9
Housing association or RSL	15	9	4	1	0	6
Other rented unfurnished	10	9	8	6	5	7
Rented furnished	10	7	6	5	5	7
Rent free	2	1	1	2	1	1
Owner occupied	39	60	75	84	88	69
With mortgage	26	43	54	65	68	51
Rental purchase	0	0	0	1	0	0
Owned outright	13	17	20	18	20	17
Age of chief economic supporter						
Under 25	10	5	5	3	1	5
Over 24 and under 35	19	18	17	20	24	19
Over 34 and under 45	28	30	29	28	27	28
Over 44 and under 55	24	22	23	28	26	25
Over 54 and under 65	16	20	21	18	19	19
Over 64 and under 75	1	3	3	2	2	3
Over 74	1	2	2	0	0	1
Employment status of chief economic supporter						
Self-employed	11	8	8	9	15	10
Full-time employee	19	57	73	82	79	62
Part-time employee	18	16	11	7	4	11
Unemployed	9	3	1	1	0	3
Unoccupied and under minimum NI age	41	14	5	2	0	12
Retired/unoccupied over minimum NI age	1	3	3	1	0	2
Other	0	-	-	-	-	0

Table 18 (Appendix 1)

**Average incomes, taxes and benefits by decile groups of RETIRED households, 2006/07**

	Decile groups of retired households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (£ per year)											
Decile points (equivalised £)	9,671	11,421	13,047	14,478	15,916	17,563	19,933	23,494	29,691		
Number of households in the population ('000s)	651	653	652	654	649	653	654	655	651	654	6,526
Original income											
Wages and salaries	33	102	224	130	126	221	325	684	1,109	1,768	472
Imputed income from benefits in kind	-	-	-	-	-	-	17	6	-	21	4
Self-employment income	-	8	-	4	43	-	3	139	26	87	31
Occupational pensions, annuities	879	1,948	2,290	2,976	3,500	4,198	6,041	8,738	11,538	24,180	6,629
Investment income	449	381	455	373	296	639	775	1,366	2,550	10,594	1,788
Other income	59	1	38	73	128	66	73	216	65	27	75
Total	1,419	2,440	3,008	3,556	4,093	5,124	7,235	11,148	15,287	36,677	8,999
Direct benefits in cash											
Contributory											
Retirement pension	4,531	5,807	7,045	6,496	6,774	6,376	6,906	6,413	6,879	6,861	6,409
Job seeker's allowance (Contribution based)	-	41	-	29	14	8	-	2	-	-	10
Incapacity benefit	68	112	87	112	79	264	181	91	-	8	100
Widows' benefits	13	31	-	-	-	-	-	-	-	-	4
Statutory Maternity Pay/Allowance	-	-	-	-	-	-	-	-	-	-	-
Non-contributory											
Income support and pension credit	318	577	453	481	521	516	599	553	704	254	498
Child benefit	9	11	6	2	15	-	8	-	-	24	7
Housing benefit	108	74	301	671	937	1,005	923	692	553	62	532
Job seeker's allowance (Income based)	55	86	-	-	-	-	-	-	-	-	14
Carer's allowance	26	23	35	19	43	92	85	35	56	-	41
Attendance allowance	39	66	185	122	126	137	244	210	191	71	139
Disability living allowance	72	221	120	217	192	523	603	685	644	241	352
War pensions/War widows' pensions	9	-	-	95	47	56	122	52	104	136	62
Severe disablement allowance	-	18	29	14	-	131	96	120	35	88	53
Industrial injury disablement benefit	13	9	3	18	39	11	46	12	-	26	18
Student support	12	-	-	-	9	-	-	-	-	-	2
Government training schemes	1	0	-	-	-	-	-	-	-	-	0
Tax credits <sup>1</sup>	-	-	13	-	32	-	10	-	-	-	6
Other non-contributory benefits <sup>2</sup>	340	383	253	312	249	291	322	323	312	241	303
Total cash benefits	5,613	7,458	8,529	8,588	9,079	9,410	10,145	9,188	9,477	8,011	8,550
Gross income	7,032	9,898	11,537	12,144	13,171	14,533	17,379	20,336	24,764	44,688	17,548
Direct taxes and Employees' NIC											
Income tax	219	265	334	412	497	742	1,126	1,597	2,510	6,775	1,448
less: Tax credits <sup>3</sup>	3	3	4	3	3	2	2	2	6	10	4
Employees' NI contributions	5	7	14	7	3	8	16	39	75	152	33
Council tax and Northern Ireland rates <sup>4</sup>	1,057	1,025	1,039	991	944	969	1,054	1,165	1,221	1,488	1,095
less: Council tax benefit/Rates rebates	168	313	306	286	295	301	241	199	170	47	233
Total	1,111	981	1,078	1,121	1,145	1,417	1,954	2,600	3,631	8,358	2,340
Disposable income	5,921	8,918	10,459	11,023	12,026	13,117	15,426	17,736	21,134	36,330	15,209
Equivalised disposable income	7,214	10,522	12,236	13,820	15,142	16,768	18,690	21,583	26,138	41,861	18,397
Indirect taxes											
Taxes on final goods and services											
VAT	870	909	1,037	897	1,074	1,072	1,180	1,434	1,860	2,805	1,314
Duty on tobacco	104	97	186	174	306	225	217	113	152	61	164
Duty on beer and cider	42	43	40	31	51	47	47	41	52	54	45
Duty on wines & spirits	60	62	64	73	94	85	92	102	135	179	95
Duty on hydrocarbon oils	159	159	208	165	174	198	214	262	297	452	229
Vehicle excise duty	78	69	86	73	71	59	89	99	123	205	95
Television licences	62	60	61	70	63	64	69	64	76	83	67
Stamp duty on house purchase	80	50	62	45	32	50	63	107	148	300	94
Customs duties	13	13	15	14	16	17	18	20	24	37	19
Betting taxes	21	26	38	61	49	58	25	27	36	54	40
Insurance premium tax	28	24	30	22	21	26	26	40	53	94	36
Air passenger duty	9	14	14	9	11	21	19	31	56	85	27
Camelot National Lottery Fund	42	53	67	54	64	56	44	38	46	37	50
Other	1	2	1	1	15	25	0	12	1	68	13
Intermediate taxes											
Commercial and industrial rates	123	124	143	131	151	159	165	187	223	345	175
Employers' NI contributions	217	218	251	230	267	280	291	329	392	607	308
Duty on hydrocarbon oils	74	75	86	79	91	96	100	112	134	208	105
Vehicle excise duty	6	6	7	7	8	8	8	9	11	17	9
Other	125	126	145	133	154	161	168	189	226	350	178
Total indirect taxes	2,114	2,131	2,540	2,268	2,711	2,708	2,837	3,218	4,046	6,042	3,062
Post-tax income	3,807	6,787	7,919	8,755	9,315	10,409	12,588	14,518	17,088	30,289	12,147
Benefits in kind											
Education	239	18	36	9	161	-	77	66	-	30	63
National health service	5,318	5,834	5,918	5,055	5,159	5,220	5,254	5,395	4,917	4,909	5,298
Housing subsidy	16	11	11	18	25	35	32	12	14	2	18
Rail travel subsidy	8	4	5	2	5	5	1	4	20	50	10
Bus travel subsidy	105	130	133	123	116	110	124	121	109	113	118
School meals and welfare milk	1	2	1	0	4	-	1	-	-	-	1
Total	5,686	6,000	6,103	5,206	5,470	5,370	5,487	5,598	5,061	5,104	5,509
Final income	9,493	12,786	14,022	13,962	14,785	15,779	18,076	20,116	22,149	35,393	17,656

**Notes:**

- 1 Child tax credit and working tax credit.
- 2 There were no age-related payments in 2006/07.
- 3 Including tax relief at source on life assurance premiums.
- 4 Council tax and Northern Ireland rates after deducting discounts.

Table 18A (Appendix 1)

## Average incomes, taxes and benefits by quintile groups of RETIRED households, 2006/07

	Quintile groups of retired households ranked by equivalised disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
<i>Quintile points (equivalised £)</i>	<i>11,421</i>	<i>14,478</i>	<i>17,563</i>	<i>23,494</i>		
Number of households in the population ('000s)	1,303	1,306	1,303	1,308	1,305	6,526
Original income						
Wages and salaries	67	177	174	504	1,438	472
Imputed income from benefits in kind	-	-	-	12	11	4
Self-employment income	4	2	22	71	57	31
Occupational pensions, annuities	1,414	2,633	3,849	7,390	17,859	6,629
Investment income	415	414	467	1,070	6,572	1,788
Other income	30	56	97	145	46	75
Total	1,930	3,282	4,608	9,191	25,982	8,999
Direct benefits in cash						
Contributory						
Retirement pension	5,169	6,771	6,575	6,660	6,870	6,409
Job seeker's allowance (Contribution based)	20	15	11	1	-	10
Incapacity benefit	90	100	171	136	4	100
Widows' benefits	22	-	-	-	-	4
Statutory Maternity Pay/Allowance	-	-	-	-	-	-
Non-contributory						
Income support and pension credit	448	467	519	576	479	498
Child benefit	10	4	8	4	12	7
Housing benefit	91	486	971	807	308	532
Job seeker's allowance (Income based)	70	-	-	-	-	14
Carer's allowance	24	27	68	60	28	41
Attendance allowance	52	153	132	227	131	139
Disability living allowance	147	168	357	644	442	352
War pensions/War widows' pensions	5	48	51	87	120	62
Severe disablement allowance	9	21	66	108	61	53
Industrial injury disablement benefit	11	11	25	29	13	18
Student support	6	-	5	-	-	2
Government training schemes	1	-	-	-	-	0
Tax credits <sup>1</sup>	-	7	16	5	-	6
Other non-contributory benefits <sup>2</sup>	362	283	270	323	276	303
Total cash benefits	6,536	8,559	9,244	9,666	8,744	8,550
Gross income	8,465	11,840	13,852	18,858	34,726	17,548
Direct taxes and Employees' NIC						
Income tax	242	373	619	1,362	4,642	1,448
Less: Tax credits <sup>3</sup>	3	3	2	2	8	4
Employees' NI contributions	6	11	6	27	114	33
Council tax and Northern Ireland rates <sup>4</sup>	1,041	1,015	956	1,110	1,354	1,095
Less: Council tax benefit/Rates rebates	241	296	298	220	108	233
Total	1,046	1,100	1,281	2,277	5,994	2,340
Disposable income	7,419	10,741	12,571	16,581	28,732	15,209
<i>Equivalised disposable income</i>	<i>8,868</i>	<i>13,028</i>	<i>15,955</i>	<i>20,136</i>	<i>34,000</i>	<i>18,397</i>
Indirect taxes						
Taxes on final goods and services						
VAT	890	967	1,073	1,307	2,333	1,314
Duty on tobacco	101	180	265	165	106	164
Duty on beer and cider	43	36	49	44	53	45
Duty on wines & spirits	61	68	89	97	157	95
Duty on hydrocarbon oils	159	186	186	238	374	229
Vehicle excise duty	73	79	65	94	164	95
Television licences	61	66	63	67	79	67
Stamp duty on house purchase	65	53	41	85	224	94
Customs duties	13	15	17	19	31	19
Betting taxes	24	49	53	26	45	40
Insurance premium tax	26	26	23	33	74	36
Air passenger duty	11	12	16	25	70	27
Camelot National Lottery Fund	48	61	60	41	42	50
Other	1	1	20	6	35	13
Intermediate taxes						
Commercial and industrial rates	123	137	155	176	284	175
Employers' NI contributions	217	241	274	310	500	308
Duty on hydrocarbon oils	74	82	94	106	171	105
Vehicle excise duty	6	7	8	9	14	9
Other	125	139	158	179	288	178
Total indirect taxes	2,123	2,404	2,710	3,028	5,044	3,062
Post-tax income	5,297	8,337	9,862	13,553	23,688	12,147
Benefits in kind						
Education	128	22	81	71	15	63
National health service	5,576	5,486	5,190	5,324	4,913	5,298
Housing subsidy	13	14	30	22	8	18
Rail travel subsidy	6	3	5	2	35	10
Bus travel subsidy	118	128	113	122	111	118
School meals and welfare milk	2	1	2	0	-	1
Total	5,843	5,655	5,420	5,543	5,083	5,509
Final income	11,140	13,992	15,282	19,096	28,771	17,656

## Notes:

- 1 Child tax credit and working tax credit.
- 2 There were no age-related payments in 2006/07.
- 3 Including tax relief at source on life assurance premiums.
- 4 Council tax and Northern Ireland rates after deducting discounts.



Table 19 (Appendix 1)

**Household characteristics of decile groups of RETIRED households, 2006/07**

	Decile groups of retired households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (number)											
People	1.5	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.5	1.7	1.5
Adults	1.5	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.5	1.6	1.5
Men	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.8	0.6
Women	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9
Children	0.0	0.0	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0
Economically active people	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Retired people	1.3	1.4	1.5	1.4	1.4	1.3	1.4	1.4	1.4	1.5	1.4
People in full-time education	0.04	0.01	0.01	0.00	0.02	-	0.01	0.01	-	0.03	0.01
Composition (percentages)											
Household type											
Retired											
1 adult	53	46	42	53	56	59	50	50	54	41	50
1 adult men	10	9	9	13	15	18	8	15	17	13	13
1 adult women	44	37	33	40	41	41	42	34	38	28	38
2 or more adults	47	54	58	47	44	41	50	50	46	59	50
Household tenure											
Rented	13	12	16	39	45	42	32	28	22	4	25
Local authority rented	8	4	8	19	31	13	18	14	10	1	13
Housing association or RSL	1	6	5	13	6	20	7	8	7	2	7
Other rented unfurnished	2	1	2	4	4	5	4	3	3	1	3
Rented furnished	-	-	-	1	1	1	1	1	0	-	1
Rent free	1	-	1	2	3	3	3	2	1	0	2
Owner occupied	87	88	84	61	55	58	68	72	78	96	75
With mortgage	6	7	5	4	5	3	4	5	7	6	5
Rental purchase	0	-	-	-	-	-	-	-	-	-	0
Owned outright	81	81	79	57	49	56	64	67	71	90	69
Age of chief economic supporter											
Under 25	-	-	-	-	-	-	-	-	-	-	-
Over 24 and under 35	-	-	-	-	-	-	-	-	-	-	-
Over 34 and under 45	-	-	-	-	-	-	0	-	-	-	0
Over 44 and under 55	5	1	1	1	-	1	1	-	2	1	1
Over 54 and under 65	16	12	5	10	6	12	9	16	13	20	12
Over 64 and under 75	32	37	42	47	48	39	48	35	46	43	42
Over 74	47	49	51	43	46	47	41	49	39	36	45
Employment status of chief economic supporter											
Self-employed	-	1	-	-	-	-	-	-	-	-	0
Full-time employee	-	-	-	-	-	-	-	-	1	0	0
Part-time employee	-	-	0	-	-	-	0	1	-	-	0
Unemployed	1	1	-	-	-	-	-	-	-	-	0
Unoccupied and under minimum NI age	14	7	5	4	3	6	6	11	7	16	8
Retired/unoccupied over minimum NI age	85	92	94	96	97	94	93	89	93	84	92

Table 19A (Appendix 1)

**Household characteristics of quintile groups of RETIRED households, 2006/07**

	Quintile groups of retired households ranked by equivalised disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (number)						
People	1.6	1.5	1.5	1.5	1.6	1.5
<i>Adults</i>	<i>1.6</i>	<i>1.5</i>	<i>1.4</i>	<i>1.5</i>	<i>1.6</i>	<i>1.5</i>
<i>Men</i>	<i>0.6</i>	<i>0.6</i>	<i>0.6</i>	<i>0.6</i>	<i>0.7</i>	<i>0.6</i>
<i>Women</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>	<i>0.9</i>
<i>Children</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Economically active people	0.1	0.0	0.0	0.1	0.1	0.1
Retired people	1.4	1.5	1.4	1.4	1.5	1.4
People in full-time education	0.02	0.01	0.01	0.01	0.01	0.01
Composition (percentages)						
Household type						
Retired						
1 adult	50	48	57	50	48	50
<i>1 adult men</i>	<i>9</i>	<i>11</i>	<i>16</i>	<i>12</i>	<i>15</i>	<i>13</i>
<i>1 adult women</i>	<i>40</i>	<i>37</i>	<i>41</i>	<i>38</i>	<i>33</i>	<i>38</i>
2 or more adults	50	52	43	50	52	50
Household tenure						
Rented	12	28	44	30	13	25
<i>Local authority rented</i>	<i>6</i>	<i>13</i>	<i>22</i>	<i>16</i>	<i>6</i>	<i>13</i>
<i>Housing association or RSL</i>	<i>4</i>	<i>9</i>	<i>13</i>	<i>7</i>	<i>4</i>	<i>7</i>
<i>Other rented unfurnished</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>3</i>
<i>Rented furnished</i>	<i>-</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>1</i>
<i>Rent free</i>	<i>0</i>	<i>2</i>	<i>3</i>	<i>3</i>	<i>1</i>	<i>2</i>
Owner occupied	88	72	56	70	87	75
<i>With mortgage</i>	<i>7</i>	<i>4</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>5</i>
<i>Rental purchase</i>	<i>0</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0</i>
<i>Owned outright</i>	<i>81</i>	<i>68</i>	<i>52</i>	<i>65</i>	<i>81</i>	<i>69</i>
Age of chief economic supporter						
Under 25	-	-	-	-	-	-
Over 24 and under 35	-	-	-	-	-	-
Over 34 and under 45	-	-	-	0	-	0
Over 44 and under 55	3	1	1	1	1	1
Over 54 and under 65	14	7	9	13	16	12
Over 64 and under 75	35	45	44	41	45	42
Over 74	48	47	46	45	38	45
Employment status of chief economic supporter						
Self-employed	0	-	-	-	-	0
Full-time employee	-	-	-	-	1	0
Part-time employee	-	0	-	0	-	0
Unemployed	1	-	-	-	-	0
Unoccupied and under minimum NI age	10	5	4	9	11	8
Retired/unoccupied over minimum NI age	88	95	96	91	88	92

Table 20 (Appendix 1)

**Average incomes, taxes and benefits by decile groups of NON-RETIRED households WITHOUT CHILDREN, 2006/07**

	Decile groups of non-retired households without children ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (£ per year)											
<i>Decile points (equivalised £)</i>	<i>11,435</i>	<i>16,361</i>	<i>19,801</i>	<i>22,837</i>	<i>26,339</i>	<i>30,171</i>	<i>35,381</i>	<i>40,885</i>	<i>53,864</i>		
Number of households in the population ('000s)	1,103	1,109	1,106	1,107	1,107	1,108	1,108	1,106	1,105	1,111	11,070
Original income											
Wages and salaries	2,980	8,276	15,822	21,292	26,460	32,436	37,743	39,235	50,572	71,142	30,596
Imputed income from benefits in kind	42	13	114	60	95	202	330	505	996	1,547	390
Self-employment income	749	1,229	1,346	1,612	1,413	2,015	1,824	4,909	4,298	16,175	3,557
Occupational pensions, annuities	249	661	729	1,400	1,057	1,380	2,009	2,079	1,587	2,670	1,382
Investment income	260	212	409	354	587	451	880	1,184	1,416	3,735	949
Other income	252	200	229	18	124	38	311	180	135	149	164
Total	4,533	10,591	18,650	24,736	29,736	36,522	43,097	48,092	59,003	95,417	37,038
Direct benefits in cash											
Contributory											
Retirement pension	160	958	1,333	1,072	915	817	759	685	382	572	765
Job seeker's allowance (Contribution based)	75	55	10	17	1	6	5	-	-	-	17
Incapacity benefit	747	1,139	558	187	244	99	259	14	-	19	326
Widows' benefits	10	28	1	41	23	-	14	15	16	16	16
Statutory Maternity Pay/Allowance	-	-	-	-	2	-	-	-	-	-	0
Non-contributory											
Income support and pension credit	405	768	403	220	149	56	41	63	35	44	218
Child benefit	16	8	16	8	16	10	14	6	-	8	10
Housing benefit	917	946	402	159	130	23	71	27	21	-	270
Job seeker's allowance (Income based)	275	108	36	12	-	-	-	13	16	-	46
Carer's allowance	14	108	78	13	56	9	-	-	10	-	29
Attendance allowance	-	-	37	5	60	20	7	-	-	-	13
Disability living allowance	359	621	576	261	297	109	157	62	12	19	247
War pensions/War widows' pensions	-	3	-	4	56	45	34	14	28	-	19
Severe disablement allowance	20	65	27	56	61	61	8	33	28	-	36
Industrial injury disablement benefit	24	66	19	15	46	13	5	4	13	-	20
Student support	145	288	106	44	151	49	19	43	2	-	85
Government training schemes	4	12	15	1	6	0	1	-	3	-	4
Tax credits <sup>1</sup>	102	41	92	51	14	34	1	-	-	-	34
Other non-contributory benefits	32	79	85	96	79	42	34	28	249	27	75
Total cash benefits	3,303	5,293	3,792	2,262	2,303	1,393	1,429	1,007	813	706	2,230
Gross income	7,836	15,884	22,442	26,998	32,040	37,914	44,526	49,099	59,817	96,123	39,268
Direct taxes and Employees' NIC											
Income tax	330	1,108	2,208	3,541	4,074	5,346	6,372	7,569	10,173	19,420	6,014
Less: Tax credits <sup>2</sup>	8	19	38	25	51	54	6	5	4	6	22
Employees' NI contributions	158	518	1,041	1,498	1,939	2,459	2,892	3,079	3,620	3,877	2,108
Council tax and Northern Ireland rates <sup>3</sup>	839	897	947	1,003	1,010	1,048	1,091	1,150	1,197	1,325	1,051
Less: Council tax benefit/Rates rebates	316	258	113	52	56	22	10	8	7	15	86
Total	1,002	2,246	4,044	5,966	6,916	8,777	10,339	11,785	14,980	24,602	9,066
Disposable income	6,833	13,638	18,398	21,032	25,124	29,137	34,187	37,313	44,837	71,521	30,202
<i>Equivalised disposable income</i>	<i>7,483</i>	<i>13,865</i>	<i>18,183</i>	<i>21,268</i>	<i>24,508</i>	<i>28,255</i>	<i>32,614</i>	<i>37,915</i>	<i>46,520</i>	<i>80,987</i>	<i>31,160</i>
Indirect taxes											
Taxes on final goods and services											
VAT	1,084	1,430	1,580	1,762	1,993	2,265	2,692	2,646	3,268	3,712	2,243
Duty on tobacco	283	482	302	376	478	463	323	308	232	181	343
Duty on beer and cider	102	117	127	164	194	203	170	188	203	182	165
Duty on wines & spirits	103	95	150	165	144	216	232	246	237	282	187
Duty on hydrocarbon oils	273	309	379	444	488	662	662	607	662	701	519
Vehicle excise duty	72	99	118	144	149	170	173	178	185	192	148
Television licences	121	113	116	121	119	123	125	126	127	129	122
Stamp duty on house purchase	52	40	73	77	100	118	170	218	305	488	164
Customs duties	20	22	24	25	28	30	34	34	39	48	30
Betting taxes	23	36	37	38	33	53	61	30	34	35	38
Insurance premium tax	20	29	34	42	47	52	63	56	65	83	49
Air passenger duty	10	12	13	19	31	36	49	41	59	55	33
Camelot National Lottery Fund	41	60	72	77	62	62	71	48	57	38	59
Other	11	3	48	7	10	31	14	53	14	46	24
Intermediate taxes											
Commercial and industrial rates	184	199	218	229	256	274	317	312	357	439	278
Employers' NI contributions	323	350	384	404	452	482	558	550	629	774	491
Duty on hydrocarbon oils	111	120	131	138	155	165	191	188	215	265	168
Vehicle excise duty	9	10	11	12	13	14	16	16	18	22	14
Other	186	202	221	233	260	278	322	317	362	446	283
Total indirect taxes	3,030	3,727	4,038	4,479	5,013	5,696	6,245	6,161	7,068	8,118	5,357
Post-tax income	3,803	9,910	14,359	16,553	20,111	23,441	27,942	31,152	37,769	63,404	24,845
Benefits in kind											
Education	3,049	845	856	465	418	157	491	310	117	92	680
National health service	1,806	2,305	2,475	2,278	2,300	2,239	2,138	1,979	1,848	1,807	2,117
Housing subsidy	25	41	19	15	9	4	2	4	0	0	12
Rail travel subsidy	43	17	24	23	39	24	55	40	76	121	46
Bus travel subsidy	52	68	68	57	50	51	61	48	63	60	58
School meals and welfare milk	-	-	-	-	-	-	-	-	-	-	-
Total	4,975	3,275	3,442	2,839	2,815	2,475	2,748	2,381	2,103	2,079	2,913
Final income	8,778	13,186	17,802	19,392	22,926	25,916	30,690	33,533	39,872	65,483	27,758

**Notes:**

- 1 Child tax credit and working tax credit.
- 2 Including tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts.

Table 21 (Appendix 1)

**Average incomes, taxes and benefits by decile groups of NON-RETIRED households WITH CHILDREN, 2006/07**

	Decile groups of non-retired households with children ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
<i>Decile points (equivalised £)</i>	<i>10,286</i>	<i>12,558</i>	<i>14,851</i>	<i>17,110</i>	<i>19,637</i>	<i>22,708</i>	<i>26,460</i>	<i>31,686</i>	<i>40,927</i>		
Number of households in the population ('000s)	724	722	726	724	720	727	722	725	726	724	7,241
<b>Original income</b>											
Wages and salaries	3,616	7,048	13,908	19,574	22,612	28,721	34,635	42,487	51,251	93,068	31,692
Imputed income from benefits in kind	12	4	60	100	182	367	697	771	1,304	1,651	515
Self-employment income	1,171	1,165	1,259	1,262	2,849	2,949	4,531	4,410	7,411	22,477	4,948
Occupational pensions, annuities	-	114	150	45	268	301	274	542	428	403	252
Investment income	114	32	86	80	314	330	315	852	1,562	3,025	671
Other income	292	245	247	271	375	656	470	170	344	585	365
Total	5,205	8,608	15,708	21,332	26,599	33,324	40,922	49,230	62,299	121,208	38,444
<b>Direct benefits in cash</b>											
Contributory											
Retirement pension	106	-	70	61	162	105	76	-	102	58	74
Job seeker's allowance (Contribution based)	79	48	35	9	18	9	-	-	5	-	20
Incapacity benefit	418	221	344	311	167	161	107	34	23	-	179
Widows' benefits	-	39	28	137	49	-	63	-	-	-	32
Statutory Maternity Pay/Allowance	25	-	20	44	68	208	113	328	376	637	182
Non-contributory											
Income support and pension credit	1,508	2,138	1,227	562	204	146	97	-	8	-	589
Child benefit	1,563	1,322	1,523	1,330	1,378	1,365	1,278	1,253	1,215	1,137	1,336
Housing benefit	1,507	1,800	1,128	708	668	302	155	65	121	-	645
Job seeker's allowance (Income based)	199	160	40	10	48	16	-	-	-	-	47
Carer's allowance	74	64	201	108	28	26	56	70	10	-	64
Attendance allowance	-	-	-	-	-	-	-	-	-	-	-
Disability living allowance	209	202	392	295	311	368	229	166	55	-	223
War pensions/War widows' pensions	-	-	-	34	-	-	-	30	-	11	7
Severe disablement allowance	16	44	38	18	44	40	27	-	-	-	23
Industrial injury disablement benefit	-	24	3	-	16	7	10	-	-	-	6
Student support	138	217	136	183	83	147	57	14	73	10	106
Government training schemes	32	24	25	10	13	-	-	3	10	-	12
Tax credits <sup>1</sup>	1,588	1,902	1,923	1,785	1,281	868	363	212	42	153	1,012
Other non-contributory benefits	58	63	59	32	78	11	9	66	18	3	40
Total cash benefits	7,519	8,268	7,191	5,636	4,617	3,779	2,639	2,240	2,058	2,009	4,596
Gross income	12,724	16,875	22,900	26,968	31,216	37,103	43,561	51,470	64,357	123,217	43,039
<b>Direct taxes and Employees' NIC</b>											
Income tax	467	991	1,934	2,743	3,415	4,575	5,904	7,936	11,176	25,776	6,492
less: Tax credits <sup>2</sup>	112	315	679	741	766	681	571	418	353	84	472
Employees' NI contributions	220	453	986	1,302	1,636	2,115	2,542	3,075	3,470	4,093	1,989
Council tax and Northern Ireland rates <sup>3</sup>	971	927	1,001	1,065	1,045	1,123	1,223	1,280	1,371	1,559	1,156
less: Council tax benefit/Rates rebates	361	388	212	151	81	40	24	12	14	-	128
Total	1,185	1,669	3,030	4,217	5,250	7,092	9,074	11,861	15,651	31,345	9,037
Disposable income	11,539	15,207	19,870	22,751	25,966	30,011	34,487	39,609	48,706	91,873	34,002
<i>Equivalised disposable income</i>	<i>7,819</i>	<i>11,352</i>	<i>13,704</i>	<i>15,938</i>	<i>18,253</i>	<i>21,225</i>	<i>24,526</i>	<i>28,990</i>	<i>35,649</i>	<i>66,381</i>	<i>24,384</i>
<b>Indirect taxes</b>											
Taxes on final goods and services											
VAT	1,771	1,519	1,981	1,928	2,449	2,411	2,933	3,118	3,718	4,206	2,603
Duty on tobacco	350	476	449	526	642	311	352	253	208	206	377
Duty on beer and cider	65	86	79	95	126	133	129	161	169	131	117
Duty on wines & spirits	77	80	95	112	127	130	156	171	203	209	136
Duty on hydrocarbon oils	314	348	498	537	549	613	687	711	801	815	587
Vehicle excise duty	93	82	122	141	142	193	184	195	228	247	163
Television licences	129	127	130	130	179	128	131	131	130	128	134
Stamp duty on house purchase	82	42	97	84	122	169	197	276	345	680	209
Customs duties	27	26	29	29	34	33	37	40	50	60	36
Betting taxes	26	31	27	29	38	29	32	39	39	23	31
Insurance premium tax	27	30	33	45	50	57	56	61	77	90	52
Air passenger duty	6	33	14	26	30	28	35	28	75	39	31
Camelot National Lottery Fund	44	55	51	59	44	58	49	47	38	34	48
Other	16	13	5	2	15	7	29	10	34	22	15
Intermediate taxes											
Commercial and industrial rates	253	239	264	264	309	306	340	370	457	557	336
Employers' NI contributions	446	421	466	466	545	540	599	651	806	981	592
Duty on hydrocarbon oils	152	144	159	159	186	185	205	223	276	336	202
Vehicle excise duty	13	12	13	13	16	15	17	19	23	28	17
Other	257	242	268	268	314	311	345	375	464	565	341
Total indirect taxes	4,146	4,004	4,778	4,913	5,915	5,658	6,512	6,879	8,140	9,358	6,030
Post-tax income	7,393	11,203	15,092	17,838	20,051	24,353	27,974	32,730	40,566	82,515	27,972
<b>Benefits in kind</b>											
Education	9,124	6,408	6,733	6,061	6,018	6,056	5,647	4,929	4,583	3,504	5,906
National health service	3,888	3,379	4,010	4,196	3,664	3,904	3,500	3,830	4,135	4,112	3,862
Housing subsidy	57	83	18	16	17	26	3	6	1	1	23
Rail travel subsidy	22	10	22	28	31	30	57	51	76	93	42
Bus travel subsidy	63	55	27	79	56	44	55	40	31	54	50
School meals and welfare milk	216	230	138	77	78	29	18	22	10	8	83
Total	13,371	10,164	10,948	10,456	9,864	10,089	9,281	8,878	8,835	7,772	9,966
Final income	20,765	21,367	26,040	28,294	29,915	34,442	37,255	41,608	49,402	90,287	37,937

**Notes:**

- 1 Child tax credit and working tax credit.
- 2 Including tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts.

Table 22 (Appendix 1)  
**Distribution of households<sup>1</sup> by household type, 2006/07**

	Retired households				Non-Retired households		
	1 adult Men	1 adult Women	All 1 adult	2 or more adults	1 adult Men	1 adult Women	All 1 adult
Decile groups of households ranked by equivalised disposable income							
Number of households ('000s)							
Bottom	83	380	463	429	234	134	368
2nd	89	353	442	567	184	113	297
3rd	150	460	610	543	119	70	189
4th	160	438	598	425	159	125	284
5th	74	245	320	368	169	194	363
6th	85	223	307	254	193	214	407
7th	86	171	257	206	162	140	301
8th	43	106	148	199	219	161	380
9th	19	36	55	133	268	240	508
Top	36	56	91	110	350	191	541
All households in population ('000s)	824	2,467	3,291	3,234	2,056	1,582	3,638

	Non-Retired households						
	2 adults	3 or more adults	1 adult with children	2 adults with 1 child	2 adults with 2 children	2 adults with 3 or more children	3 or more adults with children
Decile groups of households ranked by equivalised disposable income							
Number of households ('000s)							
Bottom	292	193	262	84	130	148	110
2nd	212	105	341	123	159	115	127
3rd	230	120	205	153	194	114	124
4th	262	125	169	169	234	81	136
5th	434	273	118	160	253	78	115
6th	510	263	102	208	246	88	100
7th	659	311	85	239	278	66	80
8th	752	294	82	222	258	71	75
9th	845	338	44	269	251	9	34
Top	1,064	149	33	219	173	42	64
All households in population ('000s)	5,260	2,172	1,441	1,847	2,176	812	965

**Notes:**

1 See Appendix 2 for definitions of retired households, adults and children.



Table 23 (Appendix 1)

**Summary of the effects of taxes and benefits, by household type<sup>1</sup>, 2006/07**

	Retired households				Non-Retired households		
	1 adult Men	1 adult Women	All 1 adult	2 or more adults	1 adult Men	1 adult Women	All 1 adult
<b>Average per household (£ per year)</b>							
Original income	6,368	4,570	5,020	13,047	23,158	20,616	22,053
<i>plus</i> Cash benefits	7,165	7,434	7,367	9,753	2,073	2,136	2,100
Gross income	13,533	12,004	12,387	22,800	25,231	22,752	24,153
<i>less</i> Direct taxes and employees' NIC	1,611	1,353	1,417	3,278	5,900	5,229	5,608
Disposable income	11,923	10,652	10,970	19,522	19,331	17,523	18,545
<i>Equivalised disposable income</i>	<i>19,537</i>	<i>17,429</i>	<i>17,957</i>	<i>18,845</i>	<i>31,690</i>	<i>28,726</i>	<i>30,401</i>
<i>less</i> Indirect taxes	2,234	1,946	2,019	4,123	3,243	3,065	3,166
Post-tax income	9,688	8,705	8,951	15,400	16,088	14,458	15,379
<i>plus</i> Benefits in kind	4,028	4,590	4,449	6,586	1,230	1,247	1,238
Final income	13,717	13,295	13,401	21,986	17,318	15,705	16,617

	Non-Retired households						
	2 adults	3 or more adults	1 adult with children	2 adults with 1 child	2 adults with 2 children	2 adults with 3 or more children	3 or more adults with children
<b>Average per household (£ per year)</b>							
Original income	42,649	48,549	11,698	43,084	48,056	41,866	44,947
<i>plus</i> Cash benefits	2,032	2,927	7,633	2,694	3,086	6,196	5,757
Gross income	44,681	51,476	19,331	45,778	51,141	48,062	50,704
<i>less</i> Direct taxes and employees' NIC	10,631	11,066	2,342	10,367	11,871	9,790	9,467
Disposable income	34,050	40,410	16,988	35,412	39,270	38,272	41,237
<i>Equivalised disposable income</i>	<i>33,806</i>	<i>26,020</i>	<i>17,066</i>	<i>29,257</i>	<i>27,203</i>	<i>21,959</i>	<i>21,668</i>
<i>less</i> Indirect taxes	5,969	7,548	3,463	5,926	6,806	6,351	8,044
Post-tax income	28,081	32,862	13,526	29,485	32,464	31,920	33,193
<i>plus</i> Benefits in kind	2,688	6,267	8,320	6,753	10,166	16,690	12,462
Final income	30,769	39,129	21,845	36,238	42,630	48,610	45,655

**Notes:**

1 See Appendix 2 for definitions of retired households, adults and children.

Table 24 (Appendix 1)

**Average incomes, taxes and benefits by decile groups of ALL households (ranked by UNADJUSTED disposable income), 2006/07**

	Decile groups of all households ranked by UNADJUSTED disposable income										All house- holds
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (£ per year)											
Decile points (£)	8,502	11,214	14,199	17,716	21,710	26,175	31,902	38,922	51,581		
Number of households in the population ('000s)	2,483	2,482	2,486	2,483	2,483	2,481	2,481	2,488	2,485	2,484	24,836
Original income											
Wages and salaries	778	2,004	4,381	7,192	12,677	20,141	26,681	34,510	45,796	75,843	23,000
Imputed income from benefits in kind	8	-	8	59	50	116	185	419	922	1,485	325
Self-employment income	339	330	462	588	1,097	1,617	2,350	2,908	4,835	15,834	3,036
Occupational pensions, annuities	743	1,382	1,782	2,817	3,249	2,337	3,187	2,743	2,374	3,698	2,431
Investment income	277	327	397	509	712	696	910	1,299	2,065	3,690	1,088
Other income	116	183	177	189	249	196	189	161	325	205	199
Total	2,262	4,227	7,207	11,354	18,034	25,104	33,502	42,041	56,317	100,755	30,080
Direct benefits in cash											
Contributory											
Retirement pension	2,384	3,354	3,487	3,348	2,495	1,654	1,296	1,093	714	643	2,047
Job seeker's allowance (Contribution based)	29	22	23	25	18	20	10	5	3	3	16
Incapacity benefit	296	297	287	322	375	215	143	171	108	23	224
Widows' benefits	16	12	22	29	28	43	9	6	7	6	18
Statutory Maternity Pay/Allowance	-	7	-	16	16	35	48	105	110	194	53
Non-contributory											
Income support and pension credit	444	822	909	601	481	330	136	147	98	29	400
Child benefit	108	187	234	354	417	517	534	564	543	503	396
Housing benefit	665	1,060	1,037	702	481	271	117	85	52	14	448
Job seeker's allowance (Income based)	125	53	59	61	21	24	3	22	7	4	38
Carer's allowance	5	26	47	70	76	44	65	49	42	-	42
Attendance allowance	37	34	87	88	74	47	27	25	-	5	42
Disability living allowance	145	289	395	448	371	283	234	262	213	35	268
War pensions/War widows' pensions	-	28	28	24	45	58	33	38	9	3	27
Severe disablement allowance	10	39	53	53	45	52	15	34	36	26	36
Industrial injury disablement benefit	6	17	26	31	17	13	29	13	3	-	15
Student support	36	40	11	74	67	170	99	121	23	49	69
Government training schemes	1	4	1	11	8	8	2	10	5	4	5
Tax credits <sup>1</sup>	106	230	362	723	576	482	338	143	113	40	311
Other non-contributory benefits <sup>2</sup>	152	221	192	180	116	97	61	48	60	119	125
Total cash benefits	4,565	6,743	7,260	7,158	5,728	4,363	3,198	2,942	2,147	1,699	4,580
Gross income	6,826	10,970	14,466	18,512	23,762	29,467	36,701	44,982	58,464	102,455	34,661
Direct taxes and Employees' NIC											
Income tax	231	451	867	1,469	2,458	3,470	5,016	6,292	9,384	19,897	4,954
less: Tax credits <sup>3</sup>	9	14	43	146	200	338	274	245	144	70	148
Employees' NI contributions	53	113	292	488	895	1,488	1,988	2,565	3,255	4,144	1,528
Council tax and Northern Ireland rates <sup>4</sup>	883	869	946	980	1,048	1,062	1,156	1,206	1,298	1,484	1,093
less: Council tax benefit/Rates rebates	277	328	293	198	112	61	38	33	18	8	137
Total	882	1,091	1,769	2,594	4,089	5,620	7,847	9,786	13,775	25,447	7,290
Disposable income	5,944	9,879	12,697	15,919	19,673	23,847	28,853	35,196	44,689	77,007	27,370
Indirect taxes											
Taxes on final goods and services											
VAT	875	870	1,135	1,511	1,699	1,971	2,439	2,895	3,380	4,265	2,104
Duty on tobacco	158	209	252	368	297	378	438	325	376	257	306
Duty on beer and cider	52	46	58	102	90	128	158	179	183	200	120
Duty on wines & spirits	68	64	75	106	111	142	171	223	216	302	148
Duty on hydrocarbon oils	149	158	229	330	421	451	574	663	740	910	463
Vehicle excise duty	57	61	84	101	120	137	175	183	214	252	138
Television licences	86	86	99	102	124	118	123	123	125	127	111
Stamp duty on house purchase	64	40	56	69	93	117	156	197	300	497	159
Customs duties	15	15	18	23	24	27	32	37	43	56	29
Betting taxes	18	29	27	45	33	32	44	46	48	41	36
Insurance premium tax	20	19	25	34	40	44	57	62	70	96	47
Air passenger duty	9	11	8	34	29	22	32	37	48	79	31
Camelot National Lottery Fund	33	41	47	57	61	61	63	66	54	50	53
Other	5	7	4	38	8	10	19	17	42	33	18
Intermediate taxes											
Commercial and industrial rates	135	141	168	210	225	250	292	344	398	518	268
Employers' NI contributions	237	248	296	370	396	440	515	607	701	913	472
Duty on hydrocarbon oils	81	85	101	127	135	150	176	207	240	312	162
Vehicle excise duty	7	7	8	11	11	13	15	17	20	26	13
Other	137	143	171	213	228	253	296	349	404	526	272
Total indirect taxes	2,205	2,279	2,862	3,850	4,146	4,742	5,774	6,579	7,605	9,463	4,950
Post-tax income	3,739	7,600	9,836	12,068	15,526	19,105	23,080	28,617	37,084	67,545	22,420
Benefits in kind											
Education	1,160	960	1,150	1,860	2,391	2,591	2,656	2,799	2,582	2,267	2,042
National health service	3,212	3,690	3,752	3,898	3,654	3,402	3,147	3,394	3,223	3,245	3,462
Housing subsidy	39	30	30	21	14	12	7	5	5	2	17
Rail travel subsidy	16	7	12	15	15	24	36	62	62	105	36
Bus travel subsidy	67	75	83	77	79	80	56	75	58	67	72
School meals and welfare milk	8	29	46	43	35	30	21	13	15	5	24
Total	4,501	4,792	5,073	5,916	6,188	6,140	5,921	6,348	5,944	5,691	5,651
Final income	8,240	12,392	14,909	17,984	21,714	25,245	29,001	34,965	43,028	73,235	28,071

**Notes:**

- 1 Child tax credit and working tax credit.
- 2 There were no age-related payments in 2006/07.
- 3 Including tax relief at source on life assurance premiums.
- 4 Council tax and Northern Ireland rates after deducting discounts.

Table 25 (Appendix 1)

**Cross-tabulation of households ranked by disposable income, unadjusted and equivalised, 2006/07**

(i) Quintile groups		Quintile groups of equivalised disposable income					All households	
		Bottom	2nd	3rd	4th	Top		
Number of households in the population ('000s)								
Quintile groups of <b>unadjusted</b> disposable income								
Bottom		3,146	1,717	102	-	-		4,965
2nd		1,366	1,641	1,350	612	-		4,969
3rd		416	1,201	1,970	896	482		4,965
4th		39	370	1,354	2,281	925		4,969
Top		-	35	193	1,176	3,565		4,969
All households		4,967	4,965	4,968	4,965	4,972		24,836

(ii) Decile groups		Decile groups of equivalised disposable income									All households	
		Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Number of households in the population ('000s)												
Decile groups of <b>unadjusted</b> disposable income												
Bottom		1,458	753	272	-	-	-	-	-	-	-	2,483
2nd		551	384	565	880	102	-	-	-	-	-	2,482
3rd		206	714	426	50	578	511	-	-	-	-	2,486
4th		154	292	576	589	46	215	562	50	-	-	2,483
5th		75	204	337	315	810	220	16	479	28	-	2,483
6th		29	109	182	367	253	687	365	36	454	-	2,481
7th		5	18	100	185	423	305	615	566	94	170	2,481
8th		-	16	21	64	224	402	531	569	482	179	2,488
9th		-	-	3	25	38	138	343	535	850	552	2,485
Top		-	-	-	7	10	6	51	246	578	1,586	2,484
All households		2,479	2,488	2,482	2,483	2,482	2,486	2,483	2,481	2,486	2,486	24,836

Table 26 (Appendix 1)

**Percentage shares of equivalised total original, gross, disposable and post-tax incomes by quintile groups for ALL households<sup>1</sup>, 1984 to 2006/07<sup>2</sup>**

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1993/94	1994/95
<b>Original income</b>												
Bottom	3	2	3	2	2	2	2	2	2	2	2	2
2nd	7	7	7	7	7	7	7	7	6	6	6	6
3rd	17	17	16	16	16	16	15	16	15	15	14	15
4th	26	27	26	25	26	26	25	26	26	25	25	25
Top	47	47	49	50	50	49	51	50	50	52	52	51
All households	100	100	100	100	100	100	100	100	100	100	100	100
<b>Gross income</b>												
Bottom	9	8	8	7	7	7	7	7	7	7	7	7
2nd	12	12	11	11	11	11	10	10	11	11	11	11
3rd	17	17	16	16	16	16	16	16	16	16	16	16
4th	23	24	23	23	23	23	23	23	23	23	23	23
Top	39	40	41	43	43	42	44	44	43	44	44	43
All households	100	100	100	100	100	100	100	100	100	100	100	100
<b>Disposable income</b>												
Bottom	10	9	9	8	8	8	7	7	7	8	8	8
2nd	13	13	12	12	11	12	11	11	11	12	12	12
3rd	17	17	17	16	16	17	16	16	16	16	16	16
4th	23	23	23	23	23	23	23	23	23	23	23	23
Top	37	38	40	41	42	41	43	42	42	42	42	41
All households	100	100	100	100	100	100	100	100	100	100	100	100
<b>Post-tax income</b>												
Bottom	9	9	8	8	7	7	6	7	7	7	7	7
2nd	13	13	12	12	11	11	10	11	11	11	11	11
3rd	17	17	16	16	16	16	15	16	16	16	16	16
4th	22	23	22	22	22	23	23	23	23	22	22	22
Top	38	39	41	43	44	43	45	44	44	44	44	43
All households	100	100	100	100	100	100	100	100	100	100	100	100

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
<b>Original income</b>												
Bottom	3	2	2	3	2	2	3	3	3	3	3	3
2nd	7	7	7	7	7	7	7	7	7	8	7	7
3rd	15	15	15	15	15	15	14	15	15	15	15	15
4th	25	25	25	25	25	25	24	25	24	24	24	24
Top	50	51	51	52	52	50	52	50	51	50	51	51
All households	100	100	100	100	100	100	100	100	100	100	100	100
<b>Gross income</b>												
Bottom	7	7	7	7	7	6	6	7	7	7	7	7
2nd	11	11	11	11	11	11	11	11	11	11	11	11
3rd	16	16	16	16	16	16	15	16	16	16	16	16
4th	23	23	23	23	23	23	22	23	22	23	23	23
Top	43	44	44	44	44	44	45	43	44	43	44	44
All households	100	100	100	100	100	100	100	100	100	100	100	100
<b>Disposable income</b>												
Bottom	8	8	8	7	7	7	7	8	8	8	8	7
2nd	12	12	12	12	12	12	12	12	12	13	12	12
3rd	17	16	16	16	16	16	16	17	17	17	16	16
4th	23	23	23	23	23	23	22	23	22	22	22	22
Top	40	42	42	42	42	42	43	41	42	41	41	42
All households	100	100	100	100	100	100	100	100	100	100	100	100
<b>Post-tax income</b>												
Bottom	7	7	7	6	6	6	6	6	7	7	7	6
2nd	12	11	11	11	11	11	11	12	12	12	12	11
3rd	16	16	16	16	16	16	15	16	16	16	16	16
4th	23	22	22	22	22	22	22	23	22	22	22	22
Top	43	44	44	45	45	44	46	43	44	43	43	44
All households	100	100	100	100	100	100	100	100	100	100	100	100

**Notes:**

1 Ranked by equivalised disposable income.

2 From 1990 this includes company car benefit and beneficial house purchase loans from employers. From 1996–97 values are based on estimates for the sample grossed up to population totals.

Table 27 (Appendix 1)

**Gini coefficients for the distribution of income at each stage of the tax-benefit system and P90/P10 and P75/P25<sup>1</sup> ratios for disposable income for all households, 1980 to 2006/07<sup>2</sup>**

	Gini coefficients (per cent)				Ratios for disposable income	
	Equivalised income				P90/P10	P75/P25
	Original	Gross	Disposable	Post-tax		
1980	44	31	28	30	3.5	2.0
1981	46	31	28	31	3.4	2.0
1982	47	31	28	31	3.3	2.0
1983	48	32	28	31	3.3	1.9
1984	49	31	28	30	3.3	2.0
1985	49	32	29	32	3.5	2.1
1986	50	34	31	35	3.7	2.1
1987	51	36	33	36	4.1	2.2
1988	51	37	35	38	4.4	2.4
1989	50	36	34	37	4.5	2.4
1990	52	38	36	40	4.9	2.5
1991	51	37	35	39	4.8	2.5
1992	52	37	34	38	4.6	2.4
1993	53	38	35	38	4.5	2.3
1993/94	54	37	34	38	4.5	2.3
1994/95	53	37	33	37	4.5	2.3
1995/96	52	36	33	37	4.2	2.2
1996/97	53	37	34	38	4.4	2.3
1997/98	53	37	34	38	4.5	2.3
1998/99	53	38	35	39	4.5	2.3
1999/00	53	38	35	40	4.6	2.4
2000/01	51	38	35	39	4.5	2.3
2001/02	53	39	36	40	4.5	2.3
2002/03	51	37	33	37	4.3	2.2
2003/04	52	37	34	38	4.1	2.1
2004/05	51	36	32	36	4.1	2.1
2005/06	52	37	34	37	4.2	2.1
2006/07	52	38	34	39	4.4	2.2

**Notes:**

1 P90/P10 is the ratio of the income at the 90th percentile to the 10th; P75/P25 is the ratio of the income at the 75th percentile to the 25th.

2 From 1990 this includes company car benefit and beneficial house purchase loans from employers. From 1996–97 values are based on estimates for the sample grossed to population totals.



# Appendix 2

## Methodology and Definitions

### The allocation of government expenditure and its financing

1. There are considerable difficulties in moving from the aggregates of government expenditure and financing published in the United Kingdom National Accounts – the ONS *Blue Book* – to apportioning taxes and benefits to individual households. We can obtain information about the types of household that receive cash benefits and pay direct taxes through surveys such as the Expenditure and Food Survey (EFS). From the replies respondents give to questions on their expenditure, we can impute their payments of indirect taxes, and from information they supply about such factors as their ages and number of children in the household, we can estimate the average costs of providing them with social services, such as health and education. But there are other kinds of financing, such as corporation tax and government receipts from public corporations: no attempt is made in this analysis to apportion them to households because it would be too difficult. Similarly, there are other items of government expenditure, such as capital expenditure and expenditure on defence and on the maintenance of law and order, for which there is no clear conceptual basis for allocation, or for which we do not have sufficient information to make an allocation.

### Expenditure and Food Survey (EFS)

2. The estimates in this analysis are based mainly on data derived from the EFS, which replaced the Family Expenditure Survey (FES) from 2001/02. The EFS is an annual survey of the expenditure and income of private households. People living in hotels, lodging houses, and in institutions such as old peoples' homes are excluded. Each person aged 16 and over keeps a full record of payments made during 14 consecutive days and answers questions about hire purchase and other payments; children aged 7 to 15 keep a simplified diary. The respondents also give detailed information,

where appropriate, about income (including cash benefits received from the state) and payments of income tax. Information on age, occupation, education received, family composition and housing tenure is also obtained. The survey covers the whole 12-month period.

3. *Family Spending 2007*, published on the National Statistics website in January 2008, shows detailed results on expenditure and income from the 2006 survey, and how they vary with household characteristics. The report also includes an outline of the survey design.

4. The number of households in Great Britain responding to the EFS in 2006 was 6,058 (about 1 in every 4,000 households). The response rate was 55 per cent. An additional sample of 586 households covers Northern Ireland. To count as a co-operating household, all members aged 16 and over must fill in the diaries for both weeks and give full details of income. The available evidence suggests that households containing a couple with non-dependent children, those where the head is self-employed, and those where the head was born outside the United Kingdom, are less likely to co-operate than others (see *A comparison of the Census characteristics of respondents and non-respondents to the 1991 Family Expenditure Survey* by Kate Foster, *Survey Methodology Bulletin*, ONS, No 38, Jan 1996). In addition, response in Greater London is noticeably lower than in other areas.

5. The results in the analysis are grossed up so that totals reflect the total population in private households in the United Kingdom (that is excluding those in institutions such as residential homes for the elderly). Households were assigned different initial weights based on the non-response in the 1991 FES. These weights were derived from Census-linked data (see 'Weighting the FES in Great Britain to compensate for non-response: an investigation using

Census-linked data' by Kate Foster). The final household weights were produced using specialised software developed by INSEE, the French national statistics institute. The control variables used in the grossing system were the number of individuals by age (in five-year bands) and sex; and the number of individuals by region. This non-response weighting will be updated next year using data from the 2001 EFS and Census.

6. The EFS is designed primarily as a survey of expenditure on goods and services by households. It has been developed to gather information about the income of household members, and is an important and detailed source of income data. However, no information is collected that would enable a balance sheet of income and expenditure to be drawn up for a household over any particular period. Much expenditure relates to the two-week period after the interview, whereas many income components refer to a much longer period (for example, investment income over the previous 12 months). EFS income does not include proceeds from the sale of assets (for example, a car) or windfalls such as inheritances. But recorded expenditure might reflect these items, as well as the effects of living off savings, using capital or borrowing money. Hence, there is no reason why income and expenditure should balance either for an individual household or even averaged over a group of households. Indeed, for many households in the bottom part of the income distribution, measured expenditure exceeds measured income. Moreover, the difference between income and expenditure is not necessarily a measure of savings or dis-savings.

### Unit of analysis

7. The basic unit of analysis used is the household, and not the family, individual or benefit unit. A household is defined in terms of the harmonised definition as used in the Census and nearly all other government household surveys since 1981.

This is one person, or a group of persons, who have the accommodation as their only or main residence and (for a group) share the living accommodation, that is a living or sitting room, or share meals together or have common housekeeping. Up until 1999–2000, the definition was based on the pre-1981 Census definition and required members to share eating and budgeting arrangements as well as shared living accommodation. The definition of a household comprised people who lived at the same address and who shared common catering for at least one meal a day. The effect of the change was fairly small, but not negligible. Spending on many items, particularly on food, housing, fuel and light, is largely joint spending by the members of the household. Without further information or assumptions it is difficult to apportion indirect taxes between individuals or other sub-divisions of households.

8. In classifying the households into various types, a **child** (that is, a dependent) is defined as:

- either aged under 16;
- or aged 16, 17 or 18 not married, and receiving full-time non-advanced further education.

Most of the 'extra' adults in households with at least three adults are sons or daughters of the head of household rather than retired people.

9. A **retired household** is defined as one where the combined income of retired members amounts to at least half the total gross income of the household, where a retired person is defined as anyone who describes themselves as 'retired' or anyone over minimum NI pension age describing themselves as 'unoccupied' or 'sick or injured but not intending to seek work'.

10. By no means all retired people are in retired households: about one in five households comprising three or more adults contains retired people, for example, and households comprising one retired and one non-retired adult are often classified as non-retired.

11. The sample households have been classified according to their compositions at the time of the interview. This classification is sensible for the vast majority of households, but it can be misleading for the very small number of cases where a spouse is absent from the household at

the time of interview. The absent spouse may well be working away from home, or living separately – but contributing financially to the household's upkeep. These contributions would be picked up as part of the household's original income. Also, it is likely that some households will have changed their composition during the year.

12. Economically active people comprise persons aged 16 or over who, at the time of interview, were:

- employees at work
- employees temporarily away from work through illness, temporary lay-off, industrial action, etc
- on government training schemes
- self-employed
- not in employment but who had sought work within the last four weeks, or were waiting to start a job already obtained

### Income: redistributive stages

13. Stage one:

Original income *plus* cash benefits =  
Gross income.

Stage two:

Gross income *minus* income tax, employees' National Insurance contributions and Council tax and Northern Ireland rates (see paragraph 24 below) = Disposable income.

Stage three:

Disposable income *minus* indirect taxes =  
Post-tax income.

Stage four:

Post-tax income *plus* 'benefits in kind' =  
Final income.

14. The starting point of the analysis is **original income**. This is the annualised income in cash of all members of the household before the deduction of taxes or the addition of any state benefits. It includes income from employment, self-employment, investment income, occupational pensions and annuities. The term 'annualised' rather than 'annual' is used advisedly. For instance, annualised income from a respondent's 'main job' is not current wage or salary multiplied up to an annual value; nor is it the sum of income from this source in the twelve month period prior to interview. Rather it is an estimate of such income expressed at an annual rate based on the respondent's assessment of

his 'normal' wage or salary subject to his current employment status.

15. Furthermore, to avoid double counting and to make it consistent with the estimate of income from cash benefits (see paragraph 20), this annualised estimate has to be 'abated' for the number of weeks likely to be lost due to unemployment, sickness, etc. This figure is taken as the number of weeks so lost in the 12 months prior to interview. It should be noted that regardless of whether the respondent is currently working or unemployed the treatment is essentially the same, that is, normal gross wage or salary expressed at an annual rate abated as required.

16. In all of this, the crucial determining role of current employment status should also be noted. Thus, no employment income would be assigned to a respondent whose employment status had recently become retired or unoccupied even though he or she may have worked for most of the twelve months prior to interview.

17. About 98 per cent of original income comes from earnings, occupational pensions (including annuities) and investment income. The tiny bit remaining comes from a variety of sources: trade union benefits, income of children under 16, private scholarships, earnings as a mail order agent or baby-sitter, regular allowance from a non-spouse, allowance from an absent spouse and the imputed value of rent-free accommodation. Households living in rent-free dwellings are each assigned an imputed income (although this is counted as employment income if the tenancy depends on the job).

18. In addition to salary, many employees receive as part of their income fringe benefits such as company cars, private medical insurance and beneficial loans. The company car benefit, together with the benefit from fuel for personal use, has been included in the analysis since 1990. This is by far the most important fringe benefit accounting for around 60 per cent of total taxable benefits according to HM Revenue & Customs' (HMRC) statistics. The imputed income allocated to households is the taxable value of the benefit in accordance with HMRC rules. Although, for those earning below £8,500 per year the benefit is not taxable, here the benefit has been allocated to all those with a company car regardless of the level of earnings. Information collected about

company cars in the EFS is used to impute the benefit.

19. The benefit of subsidised loans from employers for house purchase has been allocated, since the 1992 analysis. The benefit is taken to be the difference between the interest payments on such loans as reported in the EFS and the interest payments that would have been payable at the ruling market rate of interest.

20. The next stage of the analysis is to add cash benefits and tax credits to original income to obtain **gross income**. This is slightly different from the 'gross normal weekly income' used in the EFS report. Cash benefits and tax credits include:

*Contributory:*

Retirement pension, part of job seeker's allowance, incapacity benefit, widows' benefits, and statutory maternity pay.

*Non-contributory:*

Income support, part of job seeker's allowance, child benefit, housing benefit (council tax benefit and rates rebates are treated as deductions from Council tax and Northern Ireland rates), carer's allowance, attendance allowance, disability living allowance, war pensions, severe disablement allowance, industrial injury disablement benefits, child tax credit and working tax credit, pension credit, over 80 pension, Christmas bonus for pensioners, government training scheme allowances, student support, and winter fuel payments.

21. Statutory maternity pay is classified as a cash benefit even though it is paid through the employer. From 2005/06 student support included the new educational maintenance allowance as well as other education grants. Winter fuel payments are included within the category 'other non-contributory benefits'. Age-related payments made in 2005/06 were not continued.

22. Child tax credit (CTC) and working tax credit (WTC) are more complicated. They are classified as negative income tax, but only to the extent that income tax *less* tax credits, remains greater than or equal to zero for each family. So for households paying relatively little or no income tax, tax credit payments are regarded either partially or wholly, as cash benefits.

23. Income from short-term benefits is taken as the product of the last weekly

payment and the number of weeks the benefit was received in the 12 months prior to interview. Income from long-term benefits, and from housing benefits, is based on current rates.

24. Income tax, Council tax and Northern Ireland rates, and employees' and self-employed National Insurance contributions are then deducted to give **disposable income**. Taxes on capital, such as capital gains tax and inheritance tax, are not included in these deductions because there is no clear conceptual basis for doing so, and the relevant data are not available from the EFS.

25. Income tax is shown after the deduction of those tax credit payments which are regarded as negative income tax.

26. The figures for Council tax and Northern Ireland rates include Council tax (for households in Great Britain), and domestic rates (for households in Northern Ireland). Council tax is shown after discounts to reduce or remove the personal element of the tax (for example, the discount of 25 per cent for single person households). All Council tax and Northern Ireland rates are shown after the deduction of council tax benefit and rate rebates. This is in line with National Accounts which treats such rebates as revenue foregone. Up to, and including, 1995/96 these rebates were included as part of housing benefits.

27. Up until 2001/02 the figures for local taxes included Council tax, Northern Ireland rates and charges made by water authorities for water, environmental and sewerage services. From 2002/03, charges made by water authorities were treated as charges for a service rather than a tax, so the figures for Council tax and Northern Ireland rates from 2002/03 onwards are not strictly comparable with those for local taxes up to 2001/02.

28. The tax estimates are based on the amount deducted from the last payments of employment income and pensions, and on the amount paid in the last 12 months in respect of income from self-employment, interest, dividends and rent. The income tax payments recorded will therefore take account of a household's tax allowances, with the exception of tax credits and life assurance premium relief. Where households are eligible for either of these reliefs deductions are made from recorded income tax payments.

29. The next step is to deduct indirect taxes to give **post-tax income**. Indirect tax on final consumer goods and services include:

- Duties on alcoholic drinks, tobacco, petrol, oil, betting, etc
- Value Added Tax (VAT)
- Customs (import) duties
- Motor vehicle duties
- Air passenger duty
- Insurance premium tax
- Driving licenses
- Television licenses
- Stamp duties
- Camelot: payments to National Lottery Distribution Fund

30. Taxes levied on final goods and services are assumed to be fully incident on the consumer, and can be imputed from a household's EFS expenditure record. For example, the amount of VAT that is paid by the household is calculated from the household's total expenditure on goods and services subject to VAT.

31. VAT affects the prices of second-hand cars and is therefore assumed to be incident on the purchasers of such cars as well as on the purchasers of new cars. In allocating taxes, expenditures recorded in the EFS on alcoholic drink, tobacco, ice cream, soft drinks and confectionery are grossed up to allow for the known under-recording of these items in the sample. The true expenditure in each case is assumed to be proportional to the recorded expenditure. This approach has its drawbacks because there is some evidence to suggest that heavy drinkers, for example, are under-represented in the EFS.

32. The incidence of stamp duty on house purchase on an owner-occupying household has been taken as the product of the hypothetical duty payable on buying their current dwelling (estimated from valuations given in the EFS) and the probability of a household of that type moving in a given year (estimated from the General Household Survey).

33. Indirect taxes on intermediate goods and services include:

- Rates on commercial and industrial property
- Motor vehicle duties
- Duties on hydrocarbon oils
- Employers' contributions to National Insurance, the National Health Service,

the industrial injuries fund and the redundancy payments scheme

- Customs (import) duties
- Stamp duties
- VAT
- Independent Commission franchise payments
- Landfill tax
- Consumer Credit Act fees

34. These are taxes that fall on goods and services purchased by industry. Only the elements attributable to the production of subsequent goods and services for final consumption by the UK personal sector are allocated in the analysis, being assumed to be fully shifted to the consumer. Their allocations between different categories of consumers' expenditure are based on the relation between intermediate production and final consumption using estimated input-output techniques. This process is not an exact science, and many assumptions have to be made. Some analyses, for example, that by Dilnot, Kay and Keen *Allocating Taxes to Households: A Methodology*, suggest that the taxes could be progressive rather than regressive if one were to use different incidence assumptions.

35. For Tables 3 and 9 of the main analysis, we have constructed a measure of expenditure on goods and services from data from the EFS. Indirect taxes are shown as a proportion both of disposable income and of expenditure. One drawback of comparing the incidence of indirect taxes on households at different levels of income is that, by whatever measure used, on average, recorded expenditure exceeds income apparently available for it by significant amounts at the bottom of the distribution. Thus, it has been argued that for many households, where, for instance, income fluctuates widely or where it is difficult to measure accurately, a measure based on regular household outgoings would be a far better indicator of resources available to the household and therefore give a better picture of the incidence of indirect taxes.

36. This measure of expenditure has been customised to be analogous to the definition of disposable income used in the analysis in order to facilitate these comparisons. For instance, because the imputed benefit of company cars and beneficial loans will have boosted the figure for disposable income these items have had to be added to this expenditure measure. Expenditure on alcohol, tobacco and confectionery have

been grossed up for under-recording in line with the treatment of the indirect taxes on these items. Payments deemed to be made out of income such as superannuation, regular savings, mortgage repayments, etc. have been included and adjusted where necessary but not items such as lump sum capital payments in line with the exclusion of capital gains and windfalls from income.

37. Finally, we add those notional benefits in kind provided to households by government for which there is a reasonable basis for allocation to households, to obtain **final income**. The benefits in kind allocated are:

- State education
- School meals and welfare milk
- National Health Service
- Housing subsidy
- Railway travel subsidy
- Bus travel subsidy (including concessionary fares schemes)

38. Education benefit is estimated from information provided by the Department for Education and Skills of the cost per pupil or student in special schools, primary and secondary schools, universities, and other further education establishments. The value of the benefits attributed to a household depends on the number of people in the household recorded in the EFS as receiving each kind of state education (students away from the household are excluded). No benefit is allocated for pupils attending private schools.

39. The value of school meals and other welfare foods is based on their costs to the public authorities.

40. Data are available on the average cost to the Exchequer of providing the various types of health care – hospital inpatient/outpatient care, GP consultations, dental services, etc. Each individual in the EFS is allocated a benefit from the National Health Service according to the estimated average use made of these various types of health service by people of the same age and sex, and according to the total cost of providing those services. The benefit from maternity services is assigned separately to those households containing children under the age of 12 months. No allowance is made for the use of private health care services.

41. In this analysis, public sector tenants are defined to include the tenants of local authorities, Scottish Homes, Northern

Ireland Housing Executive (NIHE), housing associations and Registered Social Landlords. The total housing subsidy includes the contribution from central government to the housing revenue accounts of local authorities, and grants paid to Scottish Homes, the NIHE, housing associations and Registered Social Landlords. Within Greater London, the rest of England, Wales, Scotland and Northern Ireland each public sector tenant has been allocated a share of the region's total relevant subsidy based on the Council Tax band of the dwelling. Housing subsidy does not include, rent rebates and allowances or local tax rebates.

42. The rail travel subsidies allocated are the support payments made to the train operating companies. The subsidy to London and South East services is allocated to households living in the area and subsidies to other services to households living outside the South East, in proportion to households' expenditure on rail fares as recorded in the EFS. In making these allocations, allowances are made for the use of rail travel by the business sector, tourists and the institutional part of the personal sector.

43. In this analysis, bus travel subsidy covers both the cost of concessionary travel schemes for senior citizens and others, and subsidies to operators. Separate allocations are made for Greater London, the other metropolitan areas and the rest of the United Kingdom. The subsidy is divided between households according to recorded expenditure on bus travel and the types of concessionary passes held.

44. We must emphasise that the analysis provides only a rough guide to the kinds of household which benefit from government expenditure, and by how much, and to those which finance it. Apart from the fact that large parts of expenditure and receipts are not allocated, the criteria used both to allocate taxes and to value and apportion benefits to individual households could be regarded as too simplistic.

45. For example, the lack of data forces us to assume that the incidence of direct taxes falls on the individual from whose income the tax is deducted. This implies that the benefit of tax relief for a life assurance premium, for example, accrues directly to the taxpayer rather than to some other party, for instance, the seller of the policy. It also implies that the working population



is not able to pass the cost of the direct tax back to employers through lower profits, or to consumers through higher prices.

46. In allocating indirect taxes we assume that the part of the tax falling on consumers' expenditure is borne by the households which buy the item or the service taxed, whereas in reality the incidence of the tax is spread by pricing policies and probably falls in varying proportions on the producers of a good or service, on their employees, on the buyer, and on the producers and consumers of other goods and services.

47. Another example is that we know only an estimate of the total financial cost of providing benefits such as education, and so we have to treat that cost as if it measured the benefit which accrues to recipients of the service. In fact, the value the recipients themselves place on the service may be very different to the cost of providing it. Moreover, there may be households in the community, other than the immediate beneficiaries, who receive a benefit indirectly from the general provision of the service.

### Equivalence scale

48. The equivalence scale used in this analysis is the *McClements scale* (**before** housing costs are deducted). The scales (separate ones for before and after housing costs) were developed by Dr L D McClements at the Department of Health and Social Security (DHSS) in the mid-seventies, based on expenditure data from the 1971 and 1972 FES. They were based on the assumption that it is possible to estimate equivalence scales from people's spending behaviour as recorded in the EFS without making any specific assumption about the criteria for equivalence. These scales are in regular use and an analysis by Banks and Johnson (*Children and Household Living Standards*, IFS, 1993) suggests that the scales are as valid as when they were developed. The scales are regarded as plausible and they are well within the range of equivalence scales developed at different times in a number of countries. Hence, their use is fully justified for broad statistical standardisation.

49. The equivalence values are given below:

Type of household member	Equivalence value
<b>Married head of household</b> (that is, a married or cohabiting couple)	1.00

1st additional adult	0.42
2nd (or more) additional adult	0.36 (per adult)

### Single head of household (adult)

1st additional adult	0.46
2nd additional adult	0.42
3rd (or more) additional adult	0.36 (per adult)

### Child aged:

16–18	0.36
13–15	0.27
11–12	0.25
8–10	0.23
5–7	0.21
2–4	0.18
Under 2	0.09

50. The values for each household member are added together to give the total equivalence number for that household. This number is then divided into the disposable income for that household to give **equivalised disposable income**. For example, a household has a married couple with two children (aged six and nine) plus one adult lodger. The household's equivalence number is  $1.0 + 0.21 + 0.23 + 0.42 = 1.86$ . The household's disposable income is £20,000, and so its equivalised disposable income is £10,753 ( $=£20,000/1.86$ ).

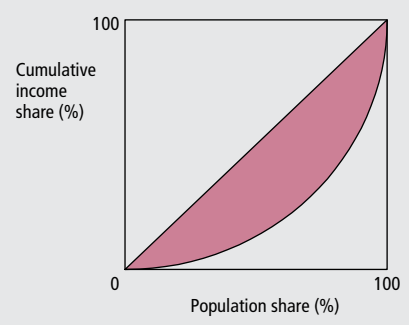
51. This quantity is used to produce the single ranking used in all the tables in this analysis (apart from the Gini coefficients which have to be ranked afresh for each different definition of income).

52. It is important to note that most monetary values shown in the analysis are ordinary (that is, un-equivalised) £ per year, not equivalised £ per year. Where equivalised values do appear (for example, the quintile points in Table 16A of Appendix 1), they are shown in *italics*.

### Gini coefficient

53. The Gini coefficient is the most widely used summary measure of the degree of inequality in an income distribution. It can more easily be understood by considering a Lorenz curve of the income distribution, (see **Diagram 2**) that is, a graph of the cumulative income share against the cumulative share of households. The curve representing complete equality of income is thus a diagonal line while complete inequality (with only one recipient

**Diagram 2**  
**Lorenz curve for a typical income distribution**

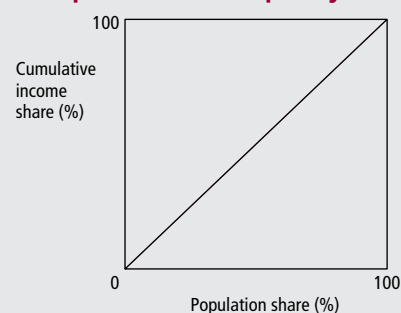


of income) is represented by a curve comprising the horizontal axis and the right-hand vertical axis (see **Diagram 3**). The area between the Lorenz curve and the diagonal line of complete equality, as a proportion of the triangular area between the curves of complete equality and inequality, gives the value of the Gini coefficient. Thus, a distribution of perfectly equal incomes has a Gini coefficient of zero; as inequality increases (and the Lorenz curve bellies out), so does the Gini coefficient until, with complete inequality, it reaches its maximum value of 1 (or 100 per cent).

54. To calculate the Gini coefficient for an income distribution, the first step is to rank that distribution in ascending order. All the Gini coefficients shown in this analysis are based on distributions of equivalised income for example, the coefficient for original income is calculated after dividing the original income for all the households by their appropriate equivalence values.

55. Strictly speaking, one could argue that the equivalence scales used here are only applicable to disposable income because this is the only income measure relating directly to spending power. Since the scales

**Diagram 3**  
**Complete income equality**





are often applied, in practice, to other income measures, we are content to use them to equivalise original, gross and post-tax income for the purpose of producing Gini coefficients (and in the tables giving percentage shares of total income). However, we do not think it is appropriate to equivalise the final income measure because this contains notional income from benefits in kind (for example, state education): the equivalence scales used in this analysis are based on actual household spending and do not, therefore, apply to such items as notional income.

### Impact of population weighting

56. The survey results have been re-weighted and grossed so that the population totals reflect the whole household population, a process described as population weighting. Different weights are applied to different types of households in order to correct for over and under-representation of these groups in the responding sample of the EFS. Population weighting raises the quality of the estimates by making the population more representative and by improving the allocation of national accounts aggregates to individual households. Estimates based on the population-weighted data set are different from estimates based on the sample. Indeed, if they were not, there would be little point in the weighting. The effect of weighting on some of the major

variables used in the analysis was given in the 1997/98 analysis.

### Sampling errors and reliability

57. As the EFS is a sample survey, data from it will differ in varying degrees from those of all households in the UK. The degree of difference will depend on how widely particular categories of income and expenditure vary between households. This 'sampling error' is smallest in relation to large groups of households and measures that do not vary greatly between households. Conversely, it is largest for small groups of households, and for measures that vary considerably between households. A broad numerical measure of the amount of variability is provided by the quantity known as the standard error.

58. To give some idea of sampling variability, the percentage standard error for average gross household income for all households is approximately 1.4 per cent, which implies a 95 per cent confidence interval of  $\pm 2.8$  per cent.

59. There will be greater sampling variability associated with estimates for decile and quintile groups, and for particular household types mainly because the sample sizes are smaller. For decile and quintile groups of given household types, the sample sizes are of course smaller still,

which will increase sampling variability further.

60. Aside from sampling error, recording household income through a survey is not easy, particularly where the complexities of the tax and benefit system are concerned. Consequently there will also be a significant amount of non-sampling error attached to some estimates.

### Previous analyses

61. This analysis is the latest in an annual series covering the years from 1957 onwards. From 1987 onwards, the analyses have used a very different methodology, in particular households are ranked by their equivalised disposable income. Hence, the results are completely incompatible with earlier years. Last year the analysis was published on the internet in May. A list of the previous articles was included in the article published in March 1997.

62. The results in all analyses are intended to be free standing: they were not designed for direct comparison with other years except where some limited comparisons were made in them. Such comparisons are difficult because of changes in definitions, however, some broader measures like the Gini coefficients are relatively robust and will stand comparison with other years: this year's analysis gives such a comparison for the years 1980 to 2006/07.

## FEATURE

Robin Youll  
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# Dealing with potential bias in early estimates of GDP

## SUMMARY

Historically, Office for National Statistics (ONS) early estimates of the growth of the volume of gross domestic product (GDP) have tended to be revised up on average. This article considers why this has occurred and ONS's response to reducing the potential for such bias in future. It concludes that there is insufficient evidence for ONS to make an explicit aggregate level adjustment to these early estimates to anticipate potential future bias, and that there are many more fundamental reasons why it should not make such an adjustment. Instead, ONS should continue to research the reasons for any bias, and seek to reduce or remove it altogether.

Timely economic statistics of the growth in gross domestic product (GDP) are needed by users so that their decisions better reflect current economic circumstances. The Office for National Statistics (ONS) GDP Preliminary Estimate First Release provides a timely source of evidence to meet this need, and is based on relevant information available at the time. The release is published just 25 days after the reference quarter, when only about 40 per cent of the data used in the final estimates are available. This figure increases to 67 per cent by the time of the UK Output, Income and Expenditure First Release, published around 55 days after the quarter, and reaches 80 per cent by the time of the Quarterly National Accounts First Release, about 85 days after the quarter. For a more detailed account of the GDP revisions process and recent revisions

history, see Skipper (2005).

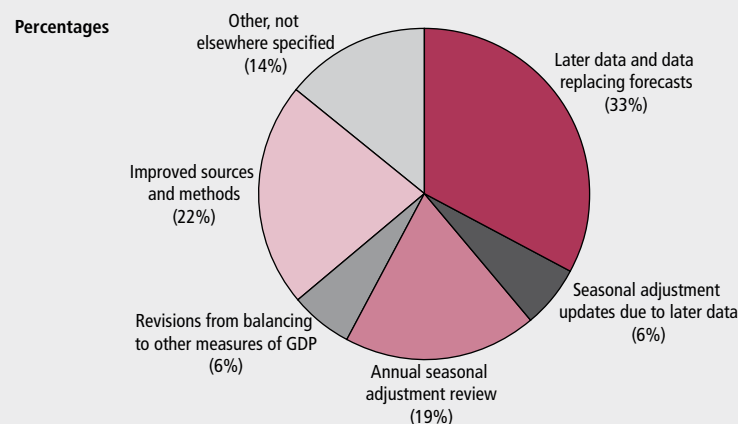
This process of updating estimates as more information becomes available does, of course, lead to revision of the earlier estimates, and therefore there is an expected and explicit trade-off between the timeliness and reliability of these estimates.

This article examines the extent to which, historically, early estimates of growth have tended to underestimate later estimates. It goes on to suggest some possible reasons for this, and considers the case for making an explicit adjustment to the early estimates to counter any possible bias. It then looks at responses to this issue from key users such as the Bank of England and, finally, ONS's own response.

## The GDP revisions process

Revisions to estimates of the growth of the volume of GDP occur for a variety

Figure 1  
Revisions to quarterly growth rates of GDP(O) data published in June 2007: by cause (Q1 2005 to Q1 2007)



of reasons, for example, as late responses received from businesses in ONS sample surveys are incorporated into the estimates; from regular and planned updates to the structures used to compile aggregates (such as updating of the gross value added weights based on annual surveys); and one-off methodological improvements – for instance, the introduction of annual chain-linking, and changes in the national accounting framework.

ONS monitors the impact of each type of revision as a standard part of the compilation of estimates of GDP. So, for example, **Figure 1** shows the causes of revisions to the output measure of GDP (GDP(O)) for periods between Q1 2005 and Q2 2007, published in the National Accounts *Blue Book* in June 2007 (Skipper 2007).

This shows that around 40 per cent of the total revision introduced in the 2007 *Blue Book* was caused by routine updates, that is, taking on late data and their re-seasonal adjustment. The annual review of seasonal adjustment and improvements to methods and sources accounted for a further 40 per cent of the revision.

ONS uses information of this kind to support research into ways of reducing revisions in future estimates. Notably, this

research currently includes an examination of the extent to which routine revisions, from taking on late data and re-seasonal adjustment, have contributed to upward revisions to GDP in the past.

### Are ONS early estimates 'biased'?

The question of whether, and to what extent, ONS early estimates of GDP might be biased has been debated for some time.

**Figure 2** shows vintages of estimates of quarterly growth of GDP over the period 1994 to 2008.

It is clear from this that the range of the estimates is considerable. Also, the latest estimates appear on average to be higher than the first estimates. Analysis in ONS (see, for example, Richardson and Mai 2004, and most recently Chamberlin 2007), demonstrates that revisions over this period have been significantly different from zero.

The Bank of England has also conducted much research into this topic, and most recently has published analysis which describes the extent of the upward revision, and sets out how forecast techniques might be used to anticipate this (see, for example, Cunningham *et al* 2007). Indeed, statistically significant upward revision of early estimates of GDP is a phenomenon

experienced by most developed countries. A recent Organisation of European Co-operation and Development study (McKenzie 2007) shows that all major economies, except the United States, have a tendency to revise early estimates upwards, with the magnitude of the revision being similar to that seen for the UK estimates, as illustrated in **Figure 3**.

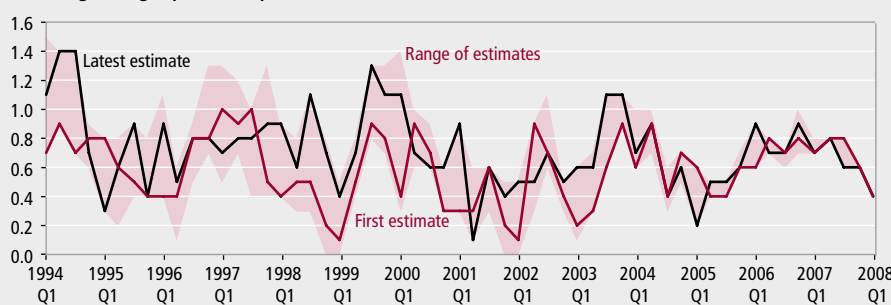
Why have revisions tended to be positive? There are no definitive studies of the causes of upward revisions to GDP, and many of the reasons may be idiosyncratic. However, some general causes might be identified, for example:

- there may be a tendency for new methods to identify changes in productivity more accurately than previous methods. For instance, the Index of Services development programme has very often led to 'input' methods (for example, those based on changes in employment) being replaced by those based on price-adjusted sales. More generally, methods for quality adjustment of volume measures of GDP have been much improved in recent years, and may account for some the upward revision
- at the time of the release of the early estimates, only limited 'hard' data are available, and compilers of National Accounts estimates may therefore need to make adjustments to the input data. These are generally based on well-understood properties of the compilation process, for example whether imputation methods tend to under or overestimate the final data, and on the extent to which future revision is deemed likely. Additionally, compilers may adjust the detailed forecasts included in the estimates if these have tended to under or overestimate growth in the past. These judgements and adjustments may tend to be conservative on average so that, during a period of sustained economic growth, this tendency could lead to upward revision when real data replace forecast estimates
- the development of methods for the measurement of emerging or rapidly changing sectors, for example telecommunications and information technology, may lag behind the growth of these sectors
- more generally, in the UK, early estimates of GDP growth are in the main based on the 'production' approach to GDP, where changes in

**Figure 2**

### Estimates of quarter-on-quarter growth of GDP first, latest and range of estimates

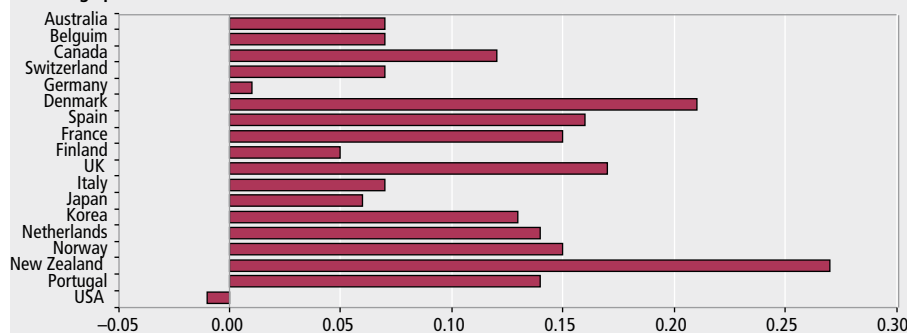
Percentage change, quarter on quarter



**Figure 3**

### Mean revision to quarter-on-quarter growth of GDP for main OECD countries, May 1995 to June 2007

Percentage points



output are used as a proxy for changes in gross value added (GVA), with the ratio between output and GVA assumed fixed in the short term. In reality, as production activities become more efficient, this ratio will tend to decrease. This may, therefore, create a tendency for later estimates to show stronger growth than the early estimates

Revisions from all of these causes can often be measured directly, and so general theories about causes can in principle be tested. While research in ONS continues in this area, it is already understood that much of the upward revision does arise from methodological changes. One approach to demonstrate this is to consider when revisions occur: if they arise predominantly during the early stages of the evolution of an estimate (for example, during the first six months) this would suggest that late data might be a cause of revision. In turn, this should promote improvements to imputation and forecasting methods, for example.

On the other hand, if revisions occur mainly during the period after late data have been taken on (say after six months), this would suggest that less regular sources of revisions, for example, methodological changes and taking on annual benchmark data, might be significant. **Figure 4** shows when revisions have occurred over the

period 1992 to 2008. In the figure, 'month 2' refers to estimates published one month after the first estimates, and so on; and the maximum number of periods are used as the basis of each average (for example, the average revision between month 36 and the latest estimate is based on all periods between January 1995, 36 months after the start of the period considered, and May 2008).

This shows that around four-fifths of the total average upward revision during this period occurred more than six months after the first estimate. This is consistent with the view that revisions are caused primarily by less regular events, for example, methodological changes. As a result, modelling the behaviour of the revisions process is made significantly more difficult.

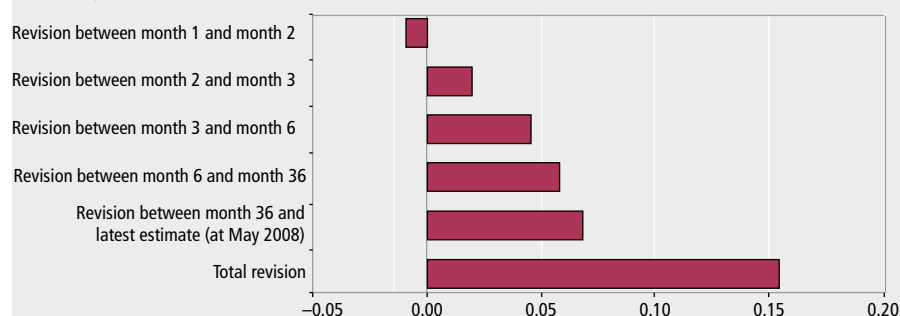
### Should ONS adjust early estimates of GDP?

Despite the foregoing, it is still reasonable to ask whether ONS could anticipate the extent of upward revisions and, if so, if it is appropriate to correct for this by a formal 'bias adjustment'. The remainder of this article considers this issue.

ONS does not currently make any formal adjustment for potential bias in the early estimates. In part this is because of the inherent difficulties in estimating an appropriate adjustment. In particular:

- while, on average, early estimates have been revised up in the last ten to 15 years, there are many occasions when particular estimates have been revised down (see, for example, Figure 1). If ONS were to make an adjustment to the calculated growth of GDP of, say, 0.1 per cent to each quarterly growth rate (which is roughly the mean revision in recent periods) then, while this might reduce bias on average, it will overstate significantly some estimates (those which are prone to be revised down). This phenomenon may be particularly important at turning points in the economic cycle. Indeed, most revisions studies only include data for the period since the early 1990s, and therefore at best include one complete economic cycle. There is therefore limited data on which to model the behaviour of revisions at turning points
- the extent of upward bias changes over time, so that predicting revisions to particular point estimates of growth becomes highly judgemental. For example, the mean average revision, which is normally taken as the measure of bias, varies considerably depending on the length of the period over which the average is taken, and the time span considered. For example, **Figure 5** shows the average revision to GDP between the first and latest estimates, using a three-year moving average over the period Q1 1997 to Q1 2008. For some periods, the first estimates have been revised up by as much as 0.27 percentage points, while more recently the average revision over three years is actually negative. This instability in the average revision makes modelling of the revisions process highly dependent on the period chosen as the basis of the model
- one method for making explicit bias adjustments to official GDP estimates might be to use data from external, non-official sources. Research in ONS suggests that this can be risky because of the uncertainty surrounding the external estimates themselves, and the extent to which they provide a robust basis for adjustment. In ONS's view, the effectiveness of using non-official estimates as a basis for predicting revisions to official estimates of GDP remains unproven. Furthermore, external surveys are not subject to the same public scrutiny, and private institutions can be perceived as representing a particular lobby in

**Figure 4**  
**Mean revisions: by stage of GDP production, 1992 to 2008**  
Percentage points



**Figure 5**  
**Mean revisions to GDP based on three-year end-point moving average**  
Percentage points



the political arena, and so have a declared interest in the message they are presenting. There would be a clear danger if official statistics were perceived by the public as reflecting their message in any formal way

- the underlying revision process itself is not stable, making forecasting expected revisions particularly difficult. For example, in 2007, the suspension of the usual *Blue Book* production round (see Beadle 2007) deferred revisions until 2008. Models of the revisions process which include this period may work less well, unless adjusted 'off model' to accommodate this
- many of the occurrences of upward revision to GDP result from one-off causes, for example, the methodological changes introduced as part of the development programme for the Index of Services. The introduction of new deflators for producer price indices in 2003 also led to upward revision. The fact that the particular reasons for these revisions will not occur again in future reduces the power of past revisions to act as a basis for forecasting likely future revisions

Furthermore, ONS chooses not to make formal adjustment as a matter of principle, because:

- estimates of GDP are produced as part of an integrated set of National Accounts. The balanced estimates of GDP take on data for income, expenditure and output, and provide considerable detail of growth within institutional sectors and industries. A 'top-down' adjustment to GDP, based on an aggregate model of historical revisions say, could not be allocated in a meaningful way. A 'bottom-up' approach to adjustment would be impractical because the historical pattern of revisions is considerably more volatile than for the aggregate
- ONS can, and does, provide much information about historical revisions to GDP. However, the process of forecasting future revisions is ultimately one of judgement, for example which indicators to use, their representativeness of past revisions, their performance as predictors of revisions, and so on. It would be inappropriate for ONS, as the official producer of estimates of GDP growth, to make such judgements, although individual users are of course free to do so. See Chamberlin (2007) for a fuller treatment of this point

- ONS estimates are compiled according to international standards which ensure comparability of UK estimates with those of other countries. Making formal adjustments based on judgement would be inconsistent with these standards

### The roles of ONS and the Bank of England

This section considers the respective roles of ONS and the Bank of England in estimating growth in the economy. Bank staff have for some time generated alternative best guesses of GDP growth based on the pattern of revisions in ONS estimates and on external indicators like the Confederation of British Industry's Industrial Trends Survey and the Chartered Institute of Purchase and Supply indicators of growth (Cunningham *et al* 2007).

As already noted, ONS, as the official statistics authority, must ensure the transparency and internal coherence of published estimates, and has an obligation to meet national accounting standards worldwide. Combining official and external survey-based estimates would compromise this. On the other hand, as a user, the Bank can make economic judgements based on official estimates as well as other 'softer' evidence. More generally, the role of economic analysis of the type performed by the Bank may be viewed as simply needing to provide a better-than-evens chance of improving understanding of the current economic conjuncture.

It is legitimate to ask, though, whether the credibility of ONS may be damaged by the Bank's explicit use of external business surveys in estimating economic growth. In response to such questions, the Bank's Chief Economist, Charles Bean, has characterised the issue as follows (Bean 2007):

[the Bank's] work on data uncertainty [is seen by some] as indicative of a loss of faith in ONS by the Bank, [and] has led us to begin production of our own independent estimates of the key macroeconomic indicators. This represents a major misunderstanding of our respective roles and of the aims of our data uncertainty work. ONS's task is primarily one of measurement. This is a particularly difficult task in an evolving economy and one that they execute outstandingly well. Moreover, the data produced by ONS represents far and away the single most important source of information for us. But we do know that early official estimates are contaminated by unavoidable

measurement error and therefore need to be interpreted in the light of our economic understanding and other available sources of information. Just as we do not have the resources to get into serious measurement of the economy, so it would be inappropriate for ONS to stray too far from measurement into interpretation. This just represents the natural division of labour between us.

### ONS response to potential bias in early estimates

On balance, ONS considers it inappropriate for ONS, as the official producer, to make explicit adjustments to early estimates of GDP to anticipate future revisions. Rather, ONS addresses this issue in a number of ways:

- by providing users with a variety of metadata and analysis of historical revisions to inform their own judgements. In this regard, ONS is probably the most transparent official statistical agency in the world, and is the only one that publishes detailed real-time revisions data sets (so called 'revisions triangles') as part of the regular release of GDP
- to reduce the source of revisions through continued research and development into methods and systems, and analysis of the causes of historical revisions. As part of this, the ONS programme for the modernisation of National Accounts will balance the three measures of GDP (income, expenditure and output) each quarter rather than each year, and so allow revisions arising from this process to be taken on sooner
- by informal use of information from external surveys as part of the compilation of the official estimates. ONS regards these surveys as a useful basis to confirm the official data and so, as part of the validation of the detailed sources used to estimate GDP growth, comparisons with these indicators occasionally leads ONS to question returned data with contributors, and to correct these if necessary

### Conclusions

Users rely on ONS early estimates of GDP growth, alongside other information, to gain an understanding of the current state of the economy. Users want these estimates to both coincide with the current period as closely as possible, while also acting as reliable approximations of the final



estimates. As such, ONS needs to make a judgement about the optimal timetable for the release of these early estimates, based on the known trade-off between reliability and timeliness. Conversely, users need to be aware of this trade-off and of the nature of the revision process. To help users understand this process, ONS publishes considerable metadata relating to historical revisions at the time of each GDP statistical release, as well as regular and occasional articles on the revisions process.<sup>1</sup>

Some users, like the Bank of England, may wish to factor into their economic decisions judgements about the likelihood, magnitude and direction of future revisions. However, ONS has a duty to report its best estimates of economic growth according to well-defined international standards. Furthermore, ONS considers that there are significant difficulties with making explicit adjustments to GDP growth to anticipate likely revisions, and so does not make them.

While ONS recognises a clear role for external surveys as early indicators of economic change, ultimately users need to understand the detail that drives the headline stories in GDP growth. This is only available from the official estimates, which are based on hundreds of different data sources, including extensive surveys of households and businesses. This detail is vital to inform economic policy decisions, but it takes time for all these data to become complete.

Work in ONS to understand the underlying process that leads to revision continues, for example, the development of models of the evolution of GDP estimates to help identify causes of revisions. In addition, it is anticipated that the modernisation of the National Accounts methods and systems in the coming period will further help to reduce revisions.

## Notes

- <sup>1</sup> These are just some of the trade-offs between the various components of quality that ONS needs to consider. For a detailed consideration of these issues, see ONS Guidelines on Measuring Statistical Quality at: [www.statistics.gov.uk/downloads/theme\\_other/guidelines\\_subject.pdf](http://www.statistics.gov.uk/downloads/theme_other/guidelines_subject.pdf) and ONS Quality Management Protocol at: [www.statistics.gov.uk/about\\_ns/cop/downloads/qualitymanagement.pdf](http://www.statistics.gov.uk/about_ns/cop/downloads/qualitymanagement.pdf)

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## FEATURE

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# Recent trends in UK corporate net lending

## SUMMARY

Until recently, the private non-financial corporations sector was a fairly large net lender to the rest of the UK economy, reflecting relatively high gross savings and weaker capital investment. This article investigates some of the factors accounting for these trends and why this position is now beginning to reverse.

In recent years the private non-financial corporations (PNFC) sector has been a net lender to the rest of the economy. This means that the earnings of corporations have exceeded payments, such as dividends to shareholders and spending on capital equipment. Excess corporate funds are therefore available to support spending in other sectors of the economy, particularly households and government, which at the same time have increasingly become net borrowers. These trends are evident from **Figure 1**.

The focus of this article is an attempt to explain why UK firms have been accumulating cash, and why this trend is now beginning to reverse. It should be made clear at the outset that this is a purely analytical piece and that the points raised should not necessarily be considered a definitive explanation of the data. Instead, the article simply reflects the author's thoughts on these questions and how the evidence might be interpreted.

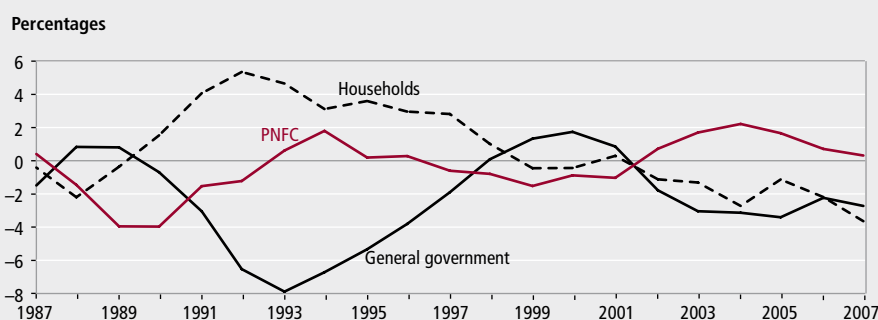
General government net borrowing

mainly reflects movements in the current budget balance, which has predominately been in deficit over the last two decades. The government's fiscal rules imply the current budget will be close to balanced over the economic cycle. If this is to be maintained, net borrowing, excluding that used to fund long-term investment, should be close to zero over the medium term. There is some evidence of this from **Figure 1**, observing the period from 1997 onwards. Initial budget surpluses corresponding to net lending have given way to budget deficits corresponding to net borrowing for the general government sector.

The household sector is traditionally a net lender to the rest of the economy, but has increasingly become a net borrower since the new millennium. It is tempting to blame growing indebtedness on excessive consumer spending supported by easy access to cheap credit. However, apart from a brief period between 1996 and 1999, consumer expenditure has grown

Figure 1

**Net lending of household, government and private non-financial corporations as a proportion of GDP**



at rates close to its long-term average. Although unsecured consumer debt has increased as a proportion of disposable income, it actually accounts for a relatively minor part of households' accumulation of financial liabilities. In fact, households have remained net borrowers despite a diminishing appetite for consumer loans and a tightening in credit availability during the last two years. Growing net borrowing seems more likely due to secured (mortgage) borrowing linked to the recent episode of strong house price inflation.

It is interesting that the circular flow of income in the UK economy is moving in the opposite direction to that expected by conventional wisdom. Economists are used to a situation where financial institutions perform an intermediary role, channelling savings from the household and overseas sectors to domestic or foreign corporations in order to fund long-term investment. Figure 1 demonstrates that recent experiences are running contrary to this view, as businesses have been lending to households.

Nor has this phenomenon been unique to the UK. The International Monetary Fund (2006) has recently presented similar trends for other G7 nations. Without this source of saving to offset the increase in borrowing from the household and government

sectors, the extent of global imbalances might be more worrying. For example, in the US it is calculated that saving from the corporate sector has offset around 50 per cent of consumer and government borrowing. Without this, current levels of consumer and government spending would require further borrowing from overseas, a result that would manifest itself in a larger current account deficit, extenuating the already weak external position of the US economy and fears of a hard landing.

Similar concerns exist for the UK economy, which has also experienced a prolonged rise in its current account deficit. Without the net lending of the PNFC sector, and the substantial net lending of the financial sector which is not shown in Figure 1, the UK's external position would be weaker still. These patterns may of course be partly a cyclical phenomenon. As the UK economy begins to slow, corporate net lending would be expected to fall in line with profits, and the household sector becomes less of a net borrower as saving rises.

Positive net lending basically arises when the gross saving of firms exceeds their capital expenditure:

$$\text{net lending/borrowing} = \text{gross saving} - \text{capital spending}$$

Gross saving is retained profits that represent the undistributed internally generated funds available for investment. If the sector as a whole were a net borrower, it would imply that internally generated funds were insufficient to meet planned capital expenditures, hence necessitating the use of external funds.

As **Figure 2** shows, the sector became a net lender after 2000 due to a combination of a rise in the gross saving rate, and a fall in the ratio of capital expenditure to gross domestic product (GDP). In the last two years, PNFC net lending as a proportion of GDP has fallen, mainly due to a declining corporate saving rate, but also due to a slight increase in capital expenditure in 2007.

Therefore, trends in PNFC net lending can be accounted for by movements in these two components. The weakness of UK investment over this period, despite a favourable environment, has surprised many policy makers and has been widely discussed (see Grieve 2006). Movements in the corporate gross saving rate have, though, attracted less attention. The structure of this article analyses these components in turn before some summary remarks.

### PNFC gross savings

Gross savings are defined as the undistributed earnings of companies thus:

$$\text{profits after taxes and net interest} - \text{dividends paid}$$

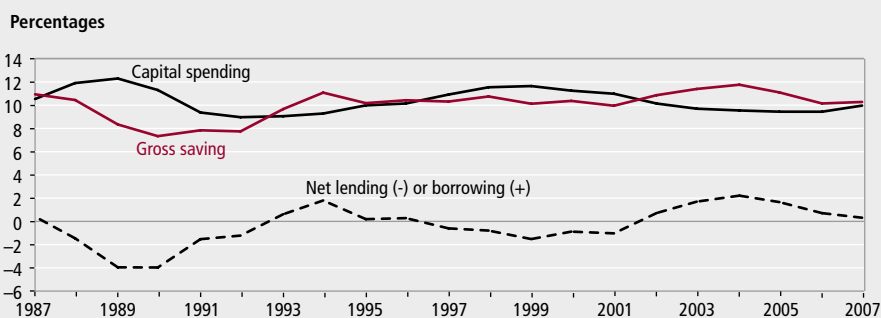
Looking at **Figure 3**, it is clear that, between 2001 and 2005, profits after net interest and taxes were fairly constant as a proportion of GDP. Therefore, the trend in the corporate gross saving rate in this period was predominately driven by a tendency to reduce the relative share of dividend payments. In the last two years, a decline in the corporate saving rate seems to reflect a slight rise in dividend payments and a fall in profits after net interest and taxes.

Profits after net interest and taxes can also be broken down into its constituent parts as:

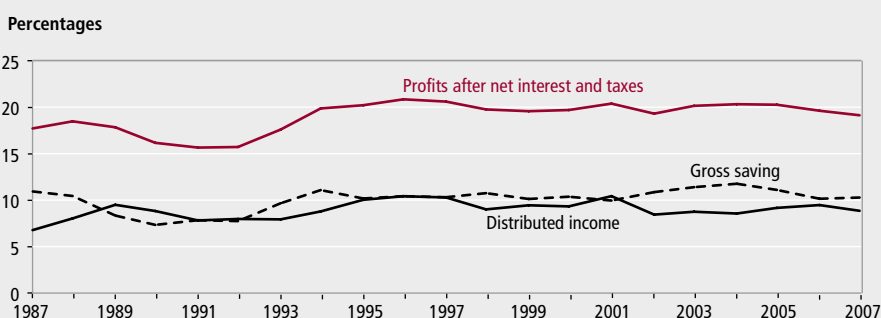
$$\text{gross operating surplus} + \text{property income} - \text{net interest paid} - \text{taxes}$$

As seen in **Figure 4**, gross operating surplus has picked up slightly since the new millennium, but the trend is not significant and the series remains close to average historical proportions of GDP. The interesting feature of PNFC profits is

**Figure 2**  
**Net lending of the UK PNFC sector and its components as a proportion of GDP**



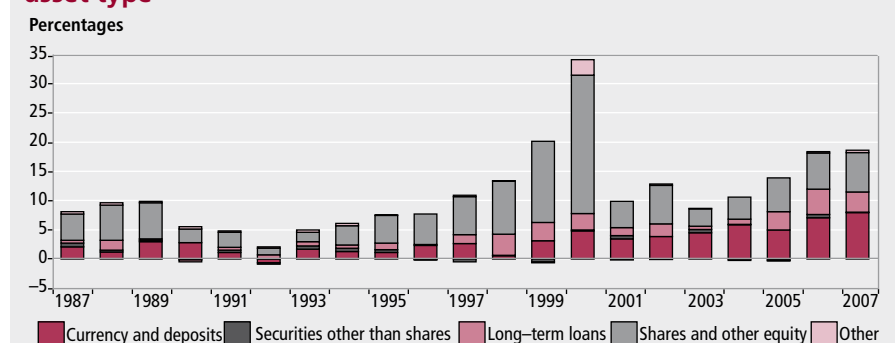
**Figure 3**  
**Gross saving of the UK PNFC sector and its components as a proportion of GDP**



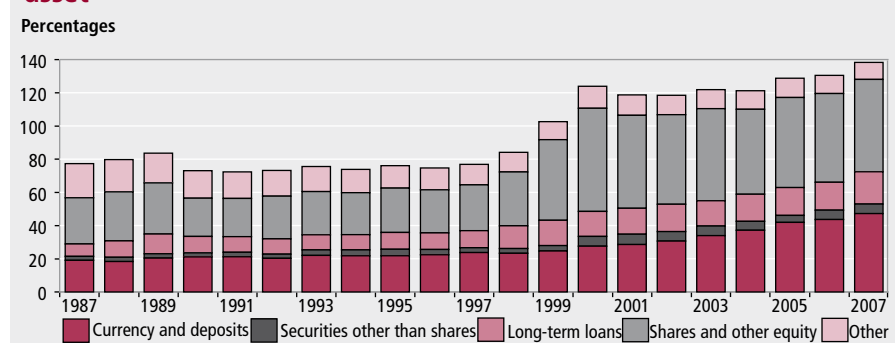
**Figure 4**  
**Earnings of the UK PNFC sector as a proportion of GDP**



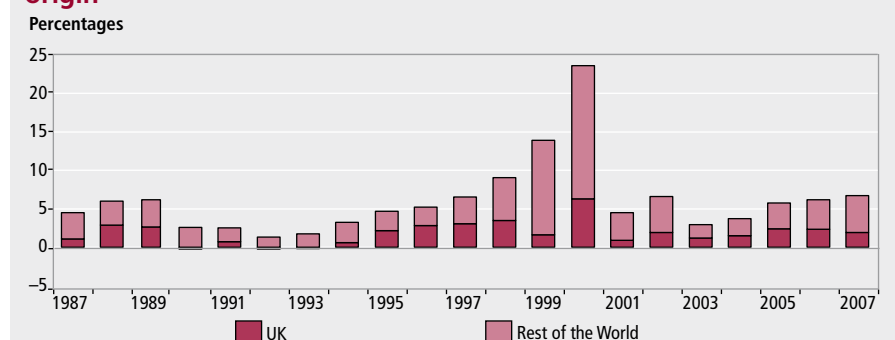
**Figure 5**  
**PNFC net accumulation of financial assets as a proportion of GDP: by asset type**



**Figure 6**  
**PNFC stocks of asset holdings as a proportion of GDP: by type of asset**



**Figure 7**  
**PNFC accumulation of shares and equities as a proportion of GDP: by origin**



the increasing proportion derived from property income, referring to corporate earnings from equity holdings and foreign direct investment.

The rise in property income since 2000 is in line with the large accumulation of shares and equity by the PNFC sector in the late 1990s (see **Figure 5**). As a result, there was a step change in the stock of financial assets held by this sector as proportion of GDP (**Figure 6**).

Therefore, growing property income is simply reflective of the trends in the accumulation and stocks of shares and equities held by private companies. It is not that surprising that more assets generate more income. One of the most notable trends in the accumulation of shares and equity is that most of it is in foreign rather than UK assets, so a large proportion of the increase in property income is being generated overseas. This is shown in **Figure 7** and **Figure 8**.

This is consistent with recent trends in the balance of payments, where the UK has been generating positive investment income flows despite persistent current account deficits, leading to a deteriorating net asset position (also known as the international investment position). Nickell (2006) accounts for the UK's ability to generate positive income from a negative position, as it has been operating like a successful venture capitalist, accumulating low-return interest-bearing liabilities while accumulating high-return direct investment assets (foreign direct investment not only includes direct purchases of foreign capital, but also significant (greater than 10 per cent) equity takes in foreign companies).

But, as shown in **Figure 9**, the increase in company earnings has been increasingly offset by an increase in tax and interest payments (particularly the latter). Much of the accumulation in equities during the end of the 1990s was funded by interest-bearing debt, hence there has been a corresponding increase in financial liabilities, and companies have generally become more highly leveraged. When combined with the recent tightening of monetary policy, interest payments have risen quite sharply for the PNFC sector, reaching the proportions of GDP seen in the high-interest rate era of the late 1980s and early 1990s. Furthermore, the current episode of low inflation means debt repayment may actually be at historical highs in real terms as inflation erodes the value of nominal debt. This appears to be the main factor driving down PNFC gross saving.

As company profits net of interest and tax

Figure 8

**PNFC stocks of shares and equities as a proportion of GDP: by origin**

Percentages

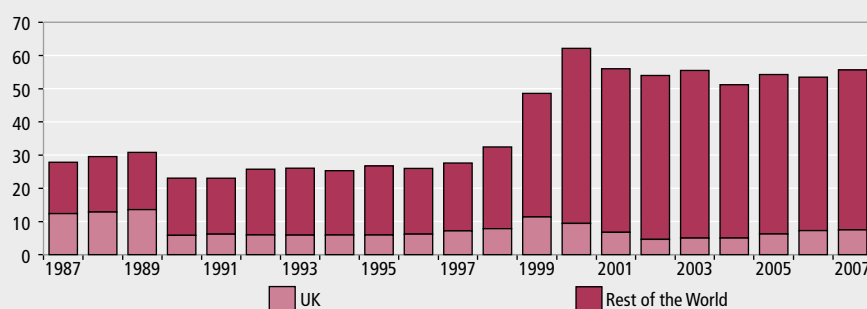
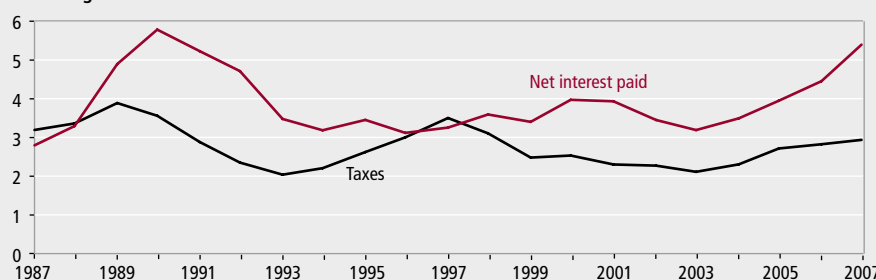


Figure 9

**PNFC net interest and taxes as a proportion of GDP**

Percentages



payments remained fairly stable between 2001 and 2005, the rise in the gross saving rate during this period predominately reflected the fall in the share of dividend payments. Given that corporate profitability has remained fairly robust, this cannot be attributed to a falling share of profits in GDP. Also, given the evidence in Figure 2, it does not seem to be the case that dividends are being squeezed to increase the internal funds available for capital spending.

One explanation is that companies are returning money to shareholders through means other than dividend payments. This is typically achieved by a company repurchasing its own shares, often at a premium. For most shareholders, capital gains taxes are lower than their marginal rate of income tax, so it represents a tax efficient way of distributing money. It is also consistent with managerial incentives, as maintaining high stock prices increases the value of stock options. Although there is some evidence of increasing use of share buy-backs in the US, there does not appear to be much evidence that it is a significant factor in the UK.

An alternative explanation is that firms cut dividends in order to build cash holdings. There are several reasons why this might be beneficial, some of which will be discussed in more detail later in the article. But an important consideration may have been the need to make cash contributions

to fill deficits in company-sponsored defined benefit (DB) pension schemes. Here, employees are entitled to a stream of pension benefits deriving from a formula that typically lends itself to salary and years of service. The liabilities and assets of DB pension funds have been sensitive to equity market values and life expectancy assumptions, with important implications for corporate balance sheets.

The 1995 Pensions Act specifically introduced the minimum funding requirement, broadly stating that, every three years, trustees of DB schemes must obtain a minimum funding valuation stating how scheme assets compare with scheme liabilities. The calculations are made on the assumption that, if the fund were to be wound up, there are sufficient funds to buy out pensioner benefits with an insurance company and provide non-pensioners with a fair actuarial value of their accrued rights, which can be transferred to an alternative pensions vehicle. When schemes fall short of 90 per cent funding, the employer is required to make up the shortfall to 90 per cent within three years, as well as agreeing to contribution rates sufficient to achieve the full 100 per cent level within ten years. There is also a fiscally enforced limit to prevent overfunding beyond 5 per cent of projected obligations. Any surplus above 105 per cent of liabilities has to

be eliminated by benefit improvements, reduction in employer and/or employee contributions, or a taxed payment from the scheme to the employer.

The funding position of DB schemes has been very sensitive to equity price movements. Strong stock market performance in the late 1990s swelled the net asset position of funds, enabling firms to reduce the contributions necessary to meet their obligations. However, the subsequent fall in stock markets as the 'dot-com bubble' unwound, coupled with upward revisions to life expectancy, has reversed this position, with many schemes becoming underfunded. In response, there has been an acceleration in employer pension contributions.

Pension fund deficits could be corrected by providing less generous terms, with many firms having closed DB schemes to new members, and some even to existing members, as they look to remove the risks of asset price volatility and uncertainty over life expectancies from their balance sheets. However, it is difficult for firms to change contractually agreed pension arrangements quickly, and many still need to offer an attractive pensions scheme to attract the best-quality workers in competitive job markets.

The effects of higher pension contributions on corporate expenditure have been investigated by Bunn and Trivedi (2005) using evidence from UK company accounts. Results from their econometric analysis suggest the main impact of higher pension contributions is on dividend payments rather than on investment, where the downward effect has been relatively minor. These results are not generally surprising. As Pomerantz and Weale (2005) argue, the easiest way to solve a pensions deficit would be to fully exploit those profitable opportunities available rather than limiting earnings. Those investment projects profitable at the margin should not be deterred by the need to make pensions contributions.

They also go on to argue that it is difficult to see why funding pensions deficits should create a general shortage of financing. Perhaps firms would be unwilling to invest pension funds in their own parent company, but all pension funds have to be invested somewhere, so collectively the need to top up funds should not necessarily be restricting the PNFC sector of funds. If, as widely believed, pension funds have shifted their funds away from equities towards fixed interest securities, one would expect that the resulting low rates of interest would

induce companies to rely rather more heavily on loan finance than share issues. Therefore, the portfolio decisions of pension funds should not also impact too greatly on the availability of finance.

Making pensions contributions could have a negative effect on capital expenditure by forcing companies to rely more heavily on relatively expensive external financing. However, there is also an offsetting effect on the cost of capital. Most credit-rating agencies take pension fund shortfalls into account, so while funding a deficit with cash contributions will reduce the availability of cheaper internal finance, it also lowers the risk premiums associated with off-balance sheet liabilities. In reality, there are incentives to respond to deficits other than the regulatory enforcements.

In the last two years, the recovery in equity markets along with significant restructuring in, and closure of, DB pension schemes has seen the aggregate pension deficit of the UK's largest companies fall. Given the findings of Bunn and Trivedi, this might account for the slight rise in dividend payments made by the PNFC sector more lately.

### PNFC capital expenditure

This section looks at the other side of the PNFC net lending situation – the relative weakness of UK corporate investment. Explaining this concept can be hard because

most of the traditional indicators and the general economic environment have been very supportive. The conclusion is that something more structural is at work. Here, two possibilities are discussed: that weak capital spending is a nominal rather than a real issue; and that, in line with structural change in the economy, the definition of what constitutes investment has changed from the tangible to the intangible.

Because of falling relative capital goods prices, the weakness in PNFC investment appears to be a nominal rather than a real phenomenon. **Figure 10** plots the deflators for GDP and gross fixed capital formation, which clearly shows that capital goods prices have grown at a much slower rate than the other components of demand. The consequence, as displayed in **Figure 11**, is that the share of PNFC capital expenditure in GDP looks rather low in nominal terms, but not so bad in real terms.

Therefore, a simple explanation for PNFC net lending is that firms do not have to spend as much (relative to GDP) to achieve their optimal capital stocks. In fact, because most capital goods prices are not adjusted for quality changes, the divergence between nominal and real capital spending might be even greater in actuality.

It is commonly asserted that the weakness of business (PNFC) investment is a consequence of firms spending increasing amounts on goods and services

that national accountants do not recognise as capital assets. These are the so called intangible products, which do not have the characteristics of traditional plant and machinery but, because they yield a flow of future returns to the business, are deemed to have asset properties. The significance of these assets has grown as the UK economy continues to move away from manufacturing towards services; this is also due to the increasing incidence of new information and communication technologies.

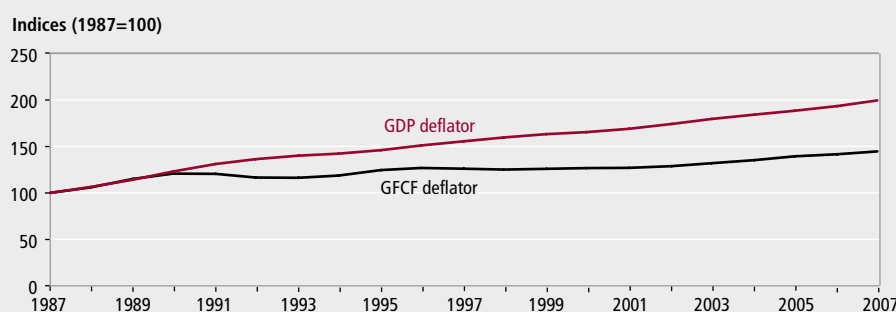
It is wrong to criticise statisticians for completely failing to recognise these important structural developments. The National Accounts have recently been expanded to recognise software as a capital good, even recording that produced in-house known as own-account software (Chamberlin *et al* 2007). In the future, firm spending on research and development (R&D) could also be treated as capital rather than current expenditure, initially in satellite accounts and then possibly in the full set of National Accounts (Galindo-Rueda 2007). However, work undertaken by researchers at Queen Mary College and HM Treasury argues that this still remains too narrow an interpretation (Giorgio Marrano *et al* 2007). The stock of intangible assets developed by firms should also include their brands, the human capital of their work forces and their organisational structure and management.

Estimates of these intangibles are shown in **Figure 12**. Software investment also incorporates spending on computer consultancy. The main components of non-scientific R&D are copyright licences, financial innovation and new products, architecture and engineering design. Conventional scientific R&D is expanded to include mineral exploration. Investments in brand equity include proportions of advertising and market research expenditures. Finally, organisational structure or firm competencies predominantly consist not only of training expenditures, but also of management consultancy.

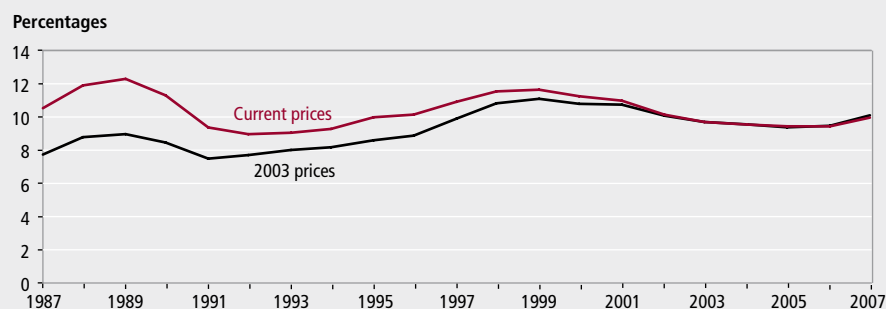
These categories of spending are a non-trivial and growing proportion of GDP. Accepting this much broader interpretation of capital would significantly increase the share of private sector investment in GDP and reverse the longer-run downward trend, although not the fall in recent years (see **Figure 13**).

The intangibles story might go some way to answering the puzzle of PNFC net lending. First, the weakness of capital

**Figure 10**  
**GDP and capital goods deflators**



**Figure 11**  
**PNFC capital expenditure as a proportion of GDP**





expenditure is a matter of definition. A wider interpretation, in line with structural changes in the UK economy, would significantly increase the investment share of GDP. Second, as it is probably difficult to fund intangible investment with external finance such as bank loans, it might also explain why firms are looking to increase internal funds by restricting other capital expenditure or dividend payments.

It is not clear cut though that many of the intangibles identified by this study will be universally accepted as investment expenditure, especially because they would be tough to both rigorously define and measure. While investigating expenditure on more intangible products might be interesting in the light of structural changes in the UK economy, there can still be a gap between the methods used to analyse and measure the economy. Furthermore, accepting the intangibles argument raises a further puzzle. It is not obvious why tangible and intangible investments should be strict substitutes for each other. In fact, one might argue that the impact of education, software and R&D makes conventional investment more, rather than less, attractive. So the ongoing weakness of corporate investment as a share of GDP is perhaps not fully answered by the intangibles story.

## Conclusion

The UK PNFC sector has emerged as a net lender to the rest of the economy due to a fall in the relative shares of capital expenditure and dividend payments compared with profits after interest and taxes. To a certain extent, it is difficult to conclude whether firms have accumulated cash automatically due to the aforementioned weakness of dividends and investment, or whether the need to increase cash holdings has depressed dividends and capital spending. The answer could, of course, be a bit of both.

There is little evidence that the weakness of dividends is the result of firms distributing cash to shareholders by other means. The case for weak capital spending, that falling capital goods prices and a shift from manufacturing towards services has lowered the amount spent on traditional investment goods is more plausible.

There are numerous reasons why firms may wish to increase cash holdings. Increasing cash holdings, despite its low rate of return, is not necessarily inconsistent with maximising shareholder value. Cash is the most liquid of financial assets, so its benefits are greater when firms are faced with an increasingly uncertain world. Volatility in financial markets, inflation in energy prices, pension fund deficits, globalisation, the weakness of

the US economy, and a global tightening of monetary policy are all risks and uncertainties that have emerged in recent years. Holding cash reduces the probability of being short of finance if profits fail to meet expectations, reducing the need to cut investment, cut dividend payments or having to rely on more expensive external finance. Furthermore, lower interest rates by historical standards have reduced the opportunity cost of liquidity.

PNFC net lending, though, has fallen in the last two years, mainly due to lower gross saving, as tighter monetary policy, combined with high leverage, has sharply increased the cost of servicing debts. The outlook indicates that this trend will continue and that the PNFC sector will once again become a net borrower, as an economic moderation or downturn weighs on operating surpluses.

## CONTACT

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Figure 12

### Estimates of market sector intangible investment as a proportion of GDP

Percentages

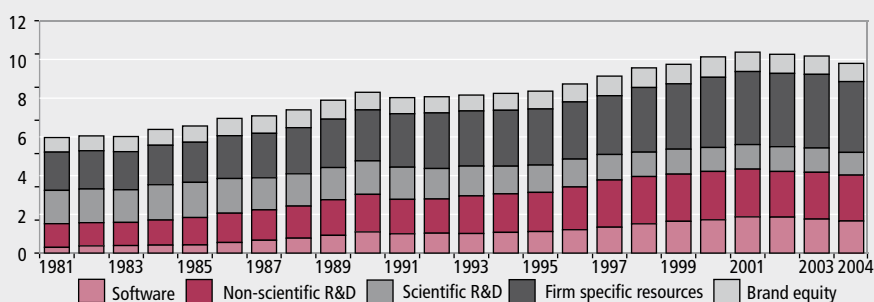
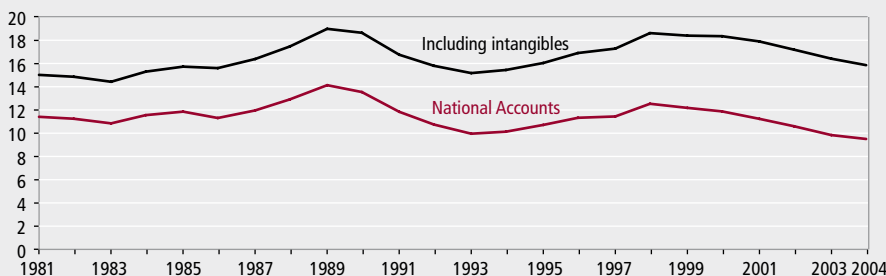


Figure 13

### Business investment as a proportion of GDP: extending the National Accounts to include intangibles

Percentages





## FEATURE

# Measuring inflation

Rob Pike

Office for National Statistics

## SUMMARY

Consumer price indexes measure the change in prices charged for goods and services bought for consumption by households in the UK. The Office for National Statistics publishes two main measures of consumer inflation, the consumer prices index (CPI) and the retail prices index (RPI).

The latest UK inflation figures, for May 2008, show the CPI rising by 3.3 per cent and the RPI rising by 4.3 per cent. It is clear from reports in the media that people are seeing big rises in the cost of food and fuel and are questioning the accuracy of official CPI and RPI rates. The consequence has been that newspapers are producing their own, selective, cost of living indexes, undermining confidence and trust in the official figures. This article explains how the official figures are compiled and looks at why some people think that the estimate of inflation should be higher.

The Government inflation target uses the consumer prices index (CPI); the Bank of England sets interest rates to meet the target. The CPI uses methods that are consistent across the European Union; this allows inflation comparisons to be made between European countries.

The retail prices index (RPI) is the more familiar measure of inflation. Payments such as tax allowances, state benefits and pensions, and index-linked gilts are often revised in line with this index. The RPI provides estimates of inflation from 1947 onwards, enabling analysis of price changes over a longer period of time.

There are several key differences between the CPI and the RPI:

- there are differences in the goods and services represented in the basket. For example:
  - the CPI excludes council tax and mortgage interest payments which are included in the RPI
  - the CPI includes some charges for financial services that are excluded from the RPI
- the way prices are combined using people's spending patterns are different:
  - the CPI represents a broader population than the RPI – the RPI excludes households with the top 4 per cent of income and excludes some pensioners
  - the CPI produces weights for items in the basket using a breakdown of household expenditure taken from the National Accounts. The RPI uses the Expenditure and Food Survey (EFS) to calculate weights

- different mathematical formulas are used for combining the prices collected for each item in the basket. The formula effect means that the average price for each item in the CPI is always lower than or equal to the average price for the same item within the RPI

## How are the CPI and RPI calculated?

The Office for National Statistics (ONS) collects 120,000 prices each month from a wide range of shops across the UK (including those in shopping centres, out-of-town retail outlets, supermarkets and corner shops) and from the internet. These prices represent the goods and services typically bought by households. Price collectors visit shops in 141 locations to collect over 100,000 prices. This ensures that variations in price across the UK are captured.

For some goods and services, the same price is charged throughout the country, for example, TV licences and purchases from catalogues. These prices are collected centrally and account for over 12,000 prices.

The price collectors visit the same shops each month to collect the prices of identical products to ensure they are comparing like for like.

As a large number of prices are collected for each item, the sample contains a broad representation of brands. For example, over 130 prices are collected for a box of 80 tea bags and these include all the main brands as well as supermarkets' own brand tea bags.

Prices are collected for a representative basket of around 650 goods and services

that households spend money on. Households spend different amounts of money on different items. For example, the spending pattern of a single pensioner may be different from that of a couple with two children. To reflect this, products are grouped together and a weight is allocated to represent the appropriate share of household expenditure.

The weights for the RPI are derived mainly from the EFS, which is conducted by ONS. The CPI weights are based on expenditure of all private households in the UK, foreign visitors to the UK and residents of communal establishments such as university halls of residence. This information is taken from household expenditure figures in the National Accounts which are also, in part, derived from the EFS.

The EFS samples over 6,000 households from all over the country. Households record every purchase they make over a fortnight. Details of major purchases are recorded over a longer period of time.

The items in the basket and their weights are reviewed and updated annually so that changes in household spending patterns are reflected.

### Are the systems used to produce the CPI robust?

The systems and procedures used to produce the CPI are subject to an external audit twice a year, to ensure they are robust. These audits are carried out by the British Standards Institute. As a result of these audits, certification to the internationally recognised quality management standard ISO 9001 has been held since 2001. This certification has been awarded to reflect the robust, accurate, controlled procedures and supporting documentation used in the production of CPI estimates.

### Does the CPI take account of special offers?

The CPI does take account of short-term price reductions. However, the index does not take account of temporary 'two for the price of one' offers nor does it adjust prices to take account of items temporarily bearing extra quantities (for example, 30 per cent extra free). The principle is that a single basket of goods is being measured and adjustment to price should only be made if the consumer wants, buys, and uses the additional quantity. In practice, this would be very difficult to assess, and so the additional quantity is not taken into account. This approach is consistent with international guidance on the treatment of special offers.

### Why do people think inflation is higher?

People tend to notice when prices are rising; where prices are unchanged or even falling they make less of an impression. This is particularly so when prices rise for items that are bought regularly and often. For example, prices of foods such as bread, milk, eggs and butter, and petrol have risen strongly over the past year. Clothing prices are falling but purchases are likely to be more sporadic and the items are less comparable. Prices of electrical goods such as flat-screen TVs and computers are plummeting; these relatively large expenditure items are purchased infrequently.

Some media reports suggest that the cost of living is higher than the official figures. Typically they have calculated their own cost of living index using a small number of items and just a few prices for each. The particular brands selected do not always represent average price moves. For example, in one index, the price of tea bags was

shown as rising by 67 per cent, whereas the official data, which is based on 130 price quotes covering 20 different brands, show a rise of less than 5 per cent.

The basket of goods and services used in the RPI and the CPI is based on the average expenditure across all households. As such, this basket does not represent any one particular household.

The official figures are based on average spending patterns, and people who spend relatively more on items with higher price increases, such as petrol, food and heating costs, will have a personal inflation rate that is higher than the CPI or RPI. Similarly, people who spend relatively more on items with lower price increases, or even price decreases, will experience a lower personal inflation rate (examples of such items include audio visual equipment and clothing).

The CPI and RPI measure the average change in expenditure by considering the change in price of an average basket of goods and services bought by households in the UK. This measure is not the same as the average of all individual inflation experienced by all households.

### Personal inflation calculator

ONS has produced a personal inflation calculator, based on the RPI, which allows individuals to input their own spending on the main categories of goods and services and then it reassembles the RPI price indices using these expenditure patterns. This gives them an indication of their personal inflation rate. It allows them to gain a better understanding of how price changes affect them. It can be accessed on the ONS website at [www.statistics.gov.uk/pic/](http://www.statistics.gov.uk/pic/)

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## FEATURE

Ian Richardson  
Office for National Statistics

# Services producer price index (experimental) – first quarter 2008

## SUMMARY

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

Prices of business-to-business services rose by 3.5 per cent in the year to the first quarter of 2008. This is based on a comparison of the change in the top-level services producer price index (SPPI) on a net sector basis. (This basis is explained at technical note 2.)

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

The top-level results, on both gross and net sector bases, are shown in **Table 1**. In 2008 Q1, the top-level SPPI (net sector) rose by 0.9 per cent compared with the previous quarter.

**Figure 2** depicts the SPPI annual growths for both the net and gross sector time series. The annual growth for the SPPI net sector rose to 3.5 per cent in 2008 Q1, up from 3.0 per cent in 2007 Q4. The gross SPPI growth at 0.8 per cent in 2008 Q1 was up from 0.5 per cent in the previous quarter.

## Industry-specific indices

Tables available on the National Statistics website contain the data for the 33 industries for which indices of services producer prices are currently available. The weights for each industry index are shown at both gross and net sector levels. Comparing Q1 2008 with Q1 2007, some key points to note are:

- freight transport by road rose 3.9 per cent, largely due to the rising cost of fuel
- property rentals rose by 3.6 per cent, due to sustained growth within the sector as reported by the Investment Property Databank
- freight forwarding rose by 7.0 per cent, largely due to the rising cost of fuel
- sewerage services rose by 6.5 per cent, following rises reported by OFWAT; these are updated on an annual basis in Q2

Figure 1

### Experimental top-level SPPI compared with the RPI and PPI

Percentage change, quarter on same quarter a year earlier

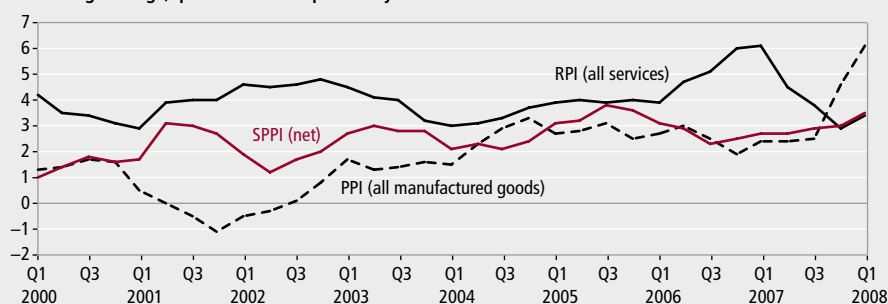


Table 1  
Top-level SPPI results

	SPPI quarterly index values, 2000=100		Percentage change, quarter on same quarter a year earlier	
	Gross sector	Net sector	Gross sector	Net sector
2000 Q1	100.1	99.7	-0.8	1.0
2000 Q2	99.9	99.8	-0.1	1.4
2000 Q3	99.9	100.1	0.4	1.8
2000 Q4	100.1	100.5	0.5	1.6
2001 Q1	100.6	101.3	0.5	1.7
2001 Q2	102.3	102.9	2.4	3.1
2001 Q3	102.7	103.1	2.7	3.0
2001 Q4	102.9	103.2	2.9	2.7
2002 Q1	103.1	103.2	2.4	1.9
2002 Q2	104.1	104.2	1.7	1.2
2002 Q3	104.8	104.8	2.0	1.7
2002 Q4	105.0	105.3	2.0	2.0
2003 Q1	105.3	106.0	2.2	2.7
2003 Q2	106.5	107.3	2.3	3.0
2003 Q3	106.9	107.8	2.1	2.8
2003 Q4	107.3	108.2	2.2	2.7
2004 Q1	107.1	108.2	1.7	2.1
2004 Q2	108.7	109.8	2.1	2.3
2004 Q3	108.9	110.1	1.9	2.1
2004 Q4	109.4	110.8	2.0	2.4
2005 Q1	110.1	111.6	2.8	3.1
2005 Q2	111.3	113.3	2.4	3.2
2005 Q3	112.2	114.3	3.0	3.8
2005 Q4	112.8	114.8	3.1	3.6
2006 Q1	113.1	115.1	2.7	3.1
2006 Q2	114.4	116.6	2.8	2.9
2006 Q3	114.7	116.9	2.2	2.3
2006 Q4	115.5	117.7	2.4	2.5
2007 Q1	116.0	118.2	2.6	2.7
2007 Q2	117.6	119.7	2.8	2.7
2007 Q3	118.1	120.3	3.0	2.9
2007 Q4	118.7	121.2	2.8	3.0
2008 Q1	119.6	122.3	3.1	3.5

## Next results

The next set of SPPI results will be issued on 27 August 2008 on the National Statistics website at:

[www.statistics.gov.uk/sppi](http://www.statistics.gov.uk/sppi)

## Further information

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

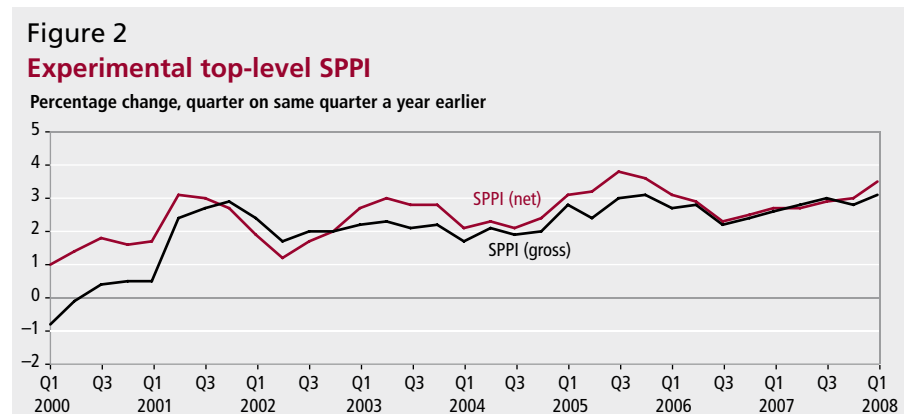
[www.statistics.gov.uk/sppi](http://www.statistics.gov.uk/sppi)

A Summary Quality Report for the SPPI can be found at:

[www.statistics.gov.uk/about/data/methodology/quality/information\\_business\\_statistics.asp](http://www.statistics.gov.uk/about/data/methodology/quality/information_business_statistics.asp)

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**TECHNICAL NOTE**

- 1 The experimental services producer price index (SPPI) replaced the former corporate services price index (CSPI). It measures movements in prices charged for services supplied by businesses to other businesses and to local and national government. It is not classified as a National Statistic.
- 2 Unless otherwise stated, index numbers shown in the main text are on a net sector basis. These relate only to transactions between the corporate services sector and other sectors. Detailed tables available on the National Statistics website also contain gross sector indices, which include transactions within the corporate services sector.
- 3 Indices relate to average prices per quarter. The full effect of a price change occurring within a quarter will only be reflected in the index for the following quarter. All index numbers exclude VAT and are not seasonally adjusted.
- 4 SPPI inflation is the percentage change in the net sector index for the latest quarter compared with the corresponding quarter in the previous year.
- 5 Grants from the European Commission helped ONS to begin developing the SPPI. Funding of approximately 600,000 euros was awarded between 2002 and 2005. This has now ceased.
- 6 A number of external data sources are currently used in the compilation of the SPPI, as follows:

Investment Property Database (IPD) – property rental payments

Office of Communications (Ofcom) – business telecommunications

Office of Water Services (OFWAT) – sewerage services

Parcelforce – national post parcels

Office of Rail Regulation (ORR) – business rail fares

# Key time series

## 1 National accounts aggregates

Last updated: 27/06/08

Seasonally adjusted

	£ million		Indices (2003 = 100)						
	At current prices		Value indices at current prices		Chained volume indices			Implied deflators <sup>3</sup>	
	Gross domestic product (GDP) at market prices	Gross value added (GVA) at basic prices	GDP at market prices <sup>1</sup>	GVA at basic prices	Gross national disposable income at market prices <sup>2</sup>	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
2002	1,055,793	937,323	94.4	94.3	97.1	97.3	97.3	97.0	97.0
2003	1,118,245	993,507	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004	1,184,296	1,051,934	105.9	105.9	103.4	103.3	103.3	102.6	102.5
2005	1,233,976	1,096,629	110.3	110.4	104.2	105.2	105.2	104.9	104.9
2006	1,303,915	1,159,257	116.6	116.7	105.7	108.2	108.4	107.7	107.7
2007	1,381,565	1,228,681	123.5	123.7	109.1	111.5	111.6	110.8	110.8
2002 Q1	259,054	229,737	92.7	92.5	95.9	96.4	96.5	96.1	95.9
2002 Q2	262,774	233,372	94.0	94.0	96.2	97.0	96.9	96.9	97.0
2002 Q3	265,836	236,103	95.1	95.1	98.3	97.7	97.6	97.4	97.4
2002 Q4	268,129	238,111	95.9	95.9	98.2	98.2	98.1	97.7	97.7
2003 Q1	272,953	242,612	97.6	97.7	99.4	98.8	98.8	98.9	98.9
2003 Q2	277,119	246,427	99.1	99.2	98.9	99.3	99.3	99.8	99.9
2003 Q3	281,996	250,492	100.9	100.9	100.0	100.4	100.4	100.4	100.5
2003 Q4	286,177	253,976	102.4	102.3	101.7	101.5	101.6	100.9	100.7
2004 Q1	288,912	256,106	103.3	103.1	101.9	102.2	102.2	101.1	100.9
2004 Q2	295,066	262,094	105.5	105.5	103.2	103.1	103.2	102.3	102.3
2004 Q3	297,941	264,732	106.6	106.6	103.0	103.5	103.5	102.9	103.0
2004 Q4	302,377	269,002	108.2	108.3	105.4	104.1	104.2	103.9	104.0
2005 Q1	303,996	270,082	108.7	108.7	104.2	104.4	104.4	104.2	104.1
2005 Q2	307,306	273,158	109.9	110.0	105.3	104.8	104.9	104.9	104.8
2005 Q3	308,515	273,676	110.4	110.2	103.4	105.4	105.4	104.7	104.5
2005 Q4	314,159	279,713	112.4	112.6	104.1	106.1	106.2	106.0	106.1
2006 Q1	319,265	284,197	114.2	114.4	104.6	107.1	107.2	106.7	106.7
2006 Q2	322,340	286,413	115.3	115.3	105.8	107.8	107.9	107.0	106.8
2006 Q3	329,094	292,535	117.7	117.8	106.2	108.6	108.7	108.4	108.4
2006 Q4	333,216	296,112	119.2	119.2	106.4	109.5	109.6	108.9	108.8
2007 Q1	337,647	299,660	120.8	120.6	106.9	110.4	110.5	109.4	109.2
2007 Q2	344,014	305,650	123.1	123.1	109.0	111.3	111.4	110.6	110.5
2007 Q3	348,174	309,763	124.5	124.7	108.8	111.9	112.0	111.3	111.4
2007 Q4	351,730	313,608	125.8	126.3	111.6	112.6	112.6	111.8	112.1
2008 Q1	355,669	316,768	127.2	127.5	112.7	112.9	112.9	112.7	113.0

### Percentage change, quarter on corresponding quarter of previous year

	IHYO	ABML <sup>4</sup>	YBGO <sup>4</sup>	IHYR	ABMM <sup>4</sup>	IHYU	ABML/ABMM <sup>4</sup>
2002 Q1	4.5	4.6	2.9	1.6	1.2	2.8	3.4
2002 Q2	5.3	5.6	3.1	2.1	1.7	3.2	3.9
2002 Q3	5.9	6.1	4.2	2.2	1.9	3.6	4.1
2002 Q4	5.2	5.3	4.3	2.3	2.2	2.9	3.0
2003 Q1	5.4	5.6	3.7	2.4	2.4	2.9	3.1
2003 Q2	5.5	5.6	2.7	2.5	2.4	2.9	3.1
2003 Q3	6.1	6.1	1.7	2.8	2.9	3.2	3.1
2003 Q4	6.7	6.7	3.6	3.4	3.5	3.2	3.1
2004 Q1	5.8	5.6	2.5	3.5	3.5	2.3	2.0
2004 Q2	6.5	6.4	4.4	3.8	3.9	2.5	2.4
2004 Q3	5.7	5.7	3.0	3.1	3.1	2.5	2.5
2004 Q4	5.7	5.9	3.7	2.6	2.6	3.0	3.2
2005 Q1	5.2	5.5	2.2	2.1	2.1	3.1	3.2
2005 Q2	4.1	4.2	2.1	1.6	1.7	2.5	2.5
2005 Q3	3.5	3.4	0.4	1.8	1.8	1.7	1.5
2005 Q4	3.9	4.0	-1.3	1.8	1.9	2.0	2.0
2006 Q1	5.0	5.2	0.4	2.6	2.7	2.4	2.5
2006 Q2	4.9	4.9	0.5	2.8	2.9	2.0	1.9
2006 Q3	6.7	6.9	2.7	3.0	3.1	3.5	3.7
2006 Q4	6.1	5.9	2.2	3.2	3.2	2.7	2.6
2007 Q1	5.8	5.4	2.2	3.1	3.0	2.6	2.4
2007 Q2	6.7	6.7	2.9	3.2	3.2	3.4	3.4
2007 Q3	5.8	5.9	2.5	3.1	3.1	2.6	2.7
2007 Q4	5.6	5.9	4.9	2.8	2.7	2.7	3.1
2008 Q1	5.3	5.7	5.4	2.3	2.2	3.0	3.4

#### 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: 27/06/08

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

	Domestic expenditure on goods and services at market prices											
	Final consumption expenditure			Gross capital formation								
	Households	Non-profit institutions¹	General government	Gross fixed capital formation	Changes in inventories²	Acquisitions less disposals of valuables	Total	Exports of goods and services	Gross final expenditure	less imports of goods and services	Statistical discrepancy (expenditure)	Gross domestic at product market prices
	ABJR	HAYO	NMRY	NPQT	CAFU	NPJR	YBIM	IKBK	ABMG	IKBL	GIXS	ABMI
2002	676,833	27,130	224,868	184,701	2,289	183	1,116,239	280,593	1,396,862	308,706	0	1,088,108
2003	697,160	27,185	232,699	186,700	3,983	-37	1,147,690	285,397	1,433,087	314,842	0	1,118,245
2004	721,434	27,327	240,129	197,655	4,597	-42	1,191,099	299,289	1,490,388	335,703	0	1,154,685
2005	732,005	28,167	246,527	200,654	3,611	-354	1,210,610	323,749	1,534,359	359,626	1,183	1,175,916
2006	745,737	29,858	250,630	215,985	2,416	290	1,244,916	358,356	1,603,272	394,789	1,805	1,210,288
2007	769,046	31,007	255,351	228,993	6,887	538	1,291,822	340,157	1,631,979	385,484	790	1,247,285
2002 Q1	167,588	6,762	55,756	44,562	1,059	66	275,814	69,440	345,256	75,709	0	269,595
2002 Q2	168,803	6,756	56,288	45,610	409	48	277,926	71,533	349,504	78,367	0	271,044
2002 Q3	169,715	6,793	56,429	46,422	520	62	280,004	71,056	351,089	78,006	0	273,034
2002 Q4	170,727	6,819	56,395	48,107	301	7	282,495	68,564	351,013	76,624	0	274,435
2003 Q1	171,828	6,843	57,099	46,805	-477	-8	282,249	72,662	354,921	78,836	0	276,082
2003 Q2	174,146	6,779	57,684	46,131	-635	94	284,342	70,610	354,945	77,283	0	277,686
2003 Q3	175,140	6,790	58,445	45,964	2,223	-68	288,498	70,334	358,825	78,089	0	280,743
2003 Q4	176,046	6,773	59,471	47,800	2,872	-55	292,601	71,791	364,396	80,634	0	283,734
2004 Q1	178,197	6,830	59,969	49,353	-439	112	294,023	73,389	367,412	81,648	0	285,764
2004 Q2	180,362	6,805	59,530	49,159	1,042	-90	296,808	74,861	371,670	83,313	0	288,357
2004 Q3	181,032	6,826	60,002	49,832	1,047	-96	298,644	75,097	373,741	84,300	0	289,441
2004 Q4	181,843	6,866	60,628	49,311	2,947	32	301,624	75,942	377,565	86,442	0	291,123
2005 Q1	182,466	7,005	60,858	49,393	1,894	-158	301,458	75,952	377,410	85,898	253	291,764
2005 Q2	182,306	6,987	61,613	49,334	797	86	301,122	79,576	380,698	87,920	300	293,078
2005 Q3	183,174	7,042	61,885	50,642	853	-201	303,394	82,357	385,751	91,483	320	294,588
2005 Q4	184,059	7,133	62,171	51,285	67	-81	304,636	85,864	390,500	94,325	310	296,486
2006 Q1	183,985	7,347	62,511	52,156	1,202	101	307,301	93,512	400,814	102,028	515	299,301
2006 Q2	186,369	7,428	62,342	52,872	564	229	309,804	95,747	405,551	104,683	503	301,371
2006 Q3	186,487	7,507	62,734	54,737	1,396	-28	312,833	84,334	397,167	94,116	445	303,495
2006 Q4	188,896	7,576	63,043	56,220	-746	-12	314,978	84,763	399,740	93,962	342	306,121
2007 Q1	190,272	7,640	63,445	57,006	708	73	319,144	84,165	403,308	95,034	253	308,527
2007 Q2	191,590	7,720	63,775	55,901	899	328	320,213	84,972	405,185	94,221	206	311,170
2007 Q3	193,224	7,783	63,990	57,417	2,680	47	325,141	86,075	411,216	98,462	173	312,926
2007 Q4	193,960	7,864	64,141	58,669	2,600	90	327,324	84,945	412,270	97,767	158	314,662
2008 Q1	196,034	7,999	64,722	57,813	-391	220	326,396	85,495	411,891	96,581	200	315,510

### Percentage change, quarter on corresponding quarter of previous year

2002 Q1	4.0	-1.6	4.0	0.9			3.1	-2.6	1.8	2.5		1.6
2002 Q2	4.0	-0.5	4.4	1.6			2.9	3.2	3.0	6.0		2.1
2002 Q3	3.3	0.5	3.3	3.1			2.8	4.6	3.2	6.4		2.2
2002 Q4	3.1	1.3	2.1	9.0			3.8	-0.8	2.8	4.5		2.3
2003 Q1	2.5	1.2	2.4	5.0			2.3	4.6	2.8	4.1		2.4
2003 Q2	3.2	0.3	2.5	1.1			2.3	-1.3	1.6	-1.4		2.5
2003 Q3	3.2	0.0	3.6	-1.0			3.0	-1.0	2.2	0.1		2.8
2003 Q4	3.1	-0.7	5.5	-0.6			3.6	4.7	3.8	5.2		3.4
2004 Q1	3.7	-0.2	5.0	5.4			4.2	1.0	3.5	3.6		3.5
2004 Q2	3.6	0.4	3.2	6.6			4.4	6.0	4.7	7.8		3.8
2004 Q3	3.4	0.5	2.7	8.4			3.5	6.8	4.2	8.0		3.1
2004 Q4	3.3	1.4	1.9	3.2			3.1	5.8	3.6	7.2		2.6
2005 Q1	2.4	2.6	1.5	0.1			2.5	3.5	2.7	5.2		2.1
2005 Q2	1.1	2.7	3.5	0.4			1.5	6.3	2.4	5.5		1.6
2005 Q3	1.2	3.2	3.1	1.6			1.6	9.7	3.2	8.5		1.8
2005 Q4	1.2	3.9	2.5	4.0			1.0	13.1	3.4	9.1		1.8
2006 Q1	0.8	4.9	2.7	5.6			1.9	23.1	6.2	18.8		2.6
2006 Q2	2.2	6.3	1.2	7.2			2.9	20.3	6.5	19.1		2.8
2006 Q3	1.8	6.6	1.4	8.1			3.1	2.4	3.0	2.9		3.0
2006 Q4	2.6	6.2	1.4	9.6			3.4	-1.3	2.4	-0.4		3.2
2007 Q1	3.4	4.0	1.5	9.3			3.9	-10.0	0.6	-6.9		3.1
2007 Q2	2.8	3.9	2.3	5.7			3.4	-11.3	-0.1	-10.0		3.3
2007 Q3	3.6	3.7	2.0	4.9			3.9	2.1	3.5	4.6		3.1
2007 Q4	2.7	3.8	1.7	4.4			3.9	0.2	3.1	4.0		2.8
2008 Q1	3.0	4.7	2.0	1.4			2.3	1.6	2.1	1.6		2.3

### 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: 11/06/08

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
<b>All persons</b>	MGSL	MGSF	MGRZ	MGSC	MGSI	MGWG	MGSR	MG SX	YBTC
Feb–Apr 2006	48,152	30,623	28,996	1,627	17,529	63.6	60.2	5.3	36.4
Feb–Apr 2007	48,556	30,785	29,108	1,677	17,770	63.4	59.9	5.4	36.6
May–Jul 2007	48,659	30,858	29,205	1,652	17,801	63.4	60.0	5.4	36.6
Aug–Oct 2007	48,766	30,954	29,317	1,637	17,812	63.5	60.1	5.3	36.5
Nov–Jan 2008	48,875	31,083	29,478	1,605	17,792	63.6	60.3	5.2	36.4
Feb–Apr 2008	48,983	31,197	29,554	1,643	17,786	63.7	60.3	5.3	36.3
<b>Male</b>	MGSM	MGSG	MGSA	MGSD	MGSJ	MGWH	MGSS	MGSY	YBTD
Feb–Apr 2006	23,373	16,588	15,640	947	6,785	71.0	66.9	5.7	29.0
Feb–Apr 2007	23,599	16,719	15,754	965	6,880	70.8	66.8	5.8	29.2
May–Jul 2007	23,657	16,751	15,804	947	6,906	70.8	66.8	5.7	29.2
Aug–Oct 2007	23,716	16,779	15,852	927	6,936	70.8	66.8	5.5	29.2
Nov–Jan 2008	23,775	16,848	15,923	925	6,927	70.9	67.0	5.5	29.1
Feb–Apr 2008	23,834	16,918	15,980	938	6,915	71.0	67.0	5.5	29.0
<b>Female</b>	MGSN	MGSH	MGSB	MGSE	MGSK	MGWI	MGST	MGSZ	YBTE
Feb–Apr 2006	24,780	14,036	13,356	680	10,744	56.6	53.9	4.8	43.4
Feb–Apr 2007	24,956	14,066	13,354	712	10,891	56.4	53.5	5.1	43.6
May–Jul 2007	25,002	14,107	13,401	706	10,895	56.4	53.6	5.0	43.6
Aug–Oct 2007	25,051	14,175	13,465	710	10,876	56.6	53.7	5.0	43.4
Nov–Jan 2008	25,100	14,235	13,556	680	10,865	56.7	54.0	4.8	43.3
Feb–Apr 2008	25,150	14,279	13,574	704	10,871	56.8	54.0	4.9	43.2
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
<b>All persons</b>	YBTF	YBSK	YBSE	YBSH	YBSN	MGSO	MGSU	YBTI	YBTL
Feb–Apr 2006	37,295	29,457	27,857	1,600	7,838	79.0	74.7	5.4	21.0
Feb–Apr 2007	37,522	29,555	27,903	1,652	7,967	78.8	74.4	5.6	21.2
May–Jul 2007	37,574	29,614	27,988	1,626	7,961	78.8	74.5	5.5	21.2
Aug–Oct 2007	37,624	29,681	28,069	1,613	7,943	78.9	74.6	5.4	21.1
Nov–Jan 2008	37,674	29,792	28,205	1,587	7,882	79.1	74.9	5.3	20.9
Feb–Apr 2008	37,724	29,865	28,246	1,619	7,859	79.2	74.9	5.4	20.8
<b>Male</b>	YBTG	YBSL	YBSF	YBSI	YBSO	MGSP	MGSV	YBTJ	YBTM
Feb–Apr 2006	19,328	16,194	15,256	938	3,134	83.8	78.9	5.8	16.2
Feb–Apr 2007	19,505	16,311	15,357	954	3,193	83.6	78.7	5.8	16.4
May–Jul 2007	19,549	16,331	15,394	937	3,218	83.5	78.7	5.7	16.5
Aug–Oct 2007	19,584	16,359	15,442	917	3,225	83.5	78.8	5.6	16.5
Nov–Jan 2008	19,620	16,414	15,497	917	3,206	83.7	79.0	5.6	16.3
Feb–Apr 2008	19,655	16,462	15,535	927	3,193	83.8	79.0	5.6	16.2
<b>Female</b>	YBTH	YBSM	YBSG	YBSJ	YBSP	MGSQ	MGSW	YBTK	YBTN
Feb–Apr 2006	17,967	13,263	12,601	662	4,704	73.8	70.1	5.0	26.2
Feb–Apr 2007	18,017	13,244	12,546	698	4,773	73.5	69.6	5.3	26.5
May–Jul 2007	18,025	13,283	12,593	690	4,742	73.7	69.9	5.2	26.3
Aug–Oct 2007	18,040	13,322	12,627	695	4,718	73.8	70.0	5.2	26.2
Nov–Jan 2008	18,055	13,378	12,708	670	4,676	74.1	70.4	5.0	25.9
Feb–Apr 2008	18,069	13,403	12,712	692	4,666	74.2	70.4	5.2	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: 17/06/08

Percentage change over 12 months

	Consumer prices						Not seasonally adjusted, except for series PLLW, RNPE and RNPF			
	Consumer prices index (CPI)			Retail prices index (RPI)			Producer prices			
							Output prices		Input prices	
	All items	CPI excluding indirect taxes (CPIY) <sup>1</sup>	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) <sup>2</sup>	All manufactured products	Excluding food, beverages, tobacco and petroleum products	Materials and fuels purchased by manufacturing industry	Excluding food, beverages, tobacco and petroleum products
	D7G7	EL2S	EAD6	CZBH	CDKQ	CBZX	PLLU <sup>3</sup>	PLLW <sup>3</sup>	RNPE <sup>3</sup>	RNPF <sup>3</sup>
2004 Jan	1.4	1.5	1.3	2.6	2.4	2.0	1.6	1.4	-0.3	0.0
2004 Feb	1.3	1.3	1.1	2.5	2.3	1.9	1.6	1.5	-0.8	-0.4
2004 Mar	1.1	1.1	1.0	2.6	2.1	1.7	1.4	1.5	0.8	-0.1
2004 Apr	1.1	1.1	1.0	2.5	2.0	1.8	1.8	1.3	2.9	-0.1
2004 May	1.5	1.4	1.3	2.8	2.3	2.2	2.5	1.4	5.6	0.6
2004 Jun	1.6	1.5	1.4	3.0	2.3	2.3	2.6	1.4	3.8	1.3
2004 Jul	1.4	1.4	1.2	3.0	2.2	2.0	2.6	1.7	3.9	1.8
2004 Aug	1.3	1.3	1.1	3.2	2.2	2.0	2.8	2.2	4.6	2.4
2004 Sep	1.1	1.0	0.9	3.1	1.9	1.7	3.1	2.3	8.1	3.6
2004 Oct	1.2	1.2	1.1	3.3	2.1	2.0	3.5	2.9	9.0	4.6
2004 Nov	1.5	1.4	1.4	3.4	2.2	2.2	3.5	3.0	6.4	4.5
2004 Dec	1.7	1.7	1.6	3.5	2.5	2.5	2.9	2.5	4.0	4.0
2005 Jan	1.6	1.7	1.5	3.2	2.1	2.0	2.6	2.6	9.7	7.5
2005 Feb	1.7	1.7	1.6	3.2	2.1	2.0	2.7	2.5	11.0	8.2
2005 Mar	1.9	2.0	1.8	3.2	2.4	2.3	2.9	2.4	11.1	7.4
2005 Apr	1.9	2.0	1.9	3.2	2.3	2.3	3.3	2.6	10.1	7.0
2005 May	1.9	2.0	1.8	2.9	2.1	2.2	2.7	2.5	7.6	6.7
2005 Jun	2.0	2.2	1.9	2.9	2.2	2.2	2.5	2.2	11.8	7.4
2005 Jul	2.3	2.5	2.3	2.9	2.4	2.5	3.1	2.2	14.1	8.7
2005 Aug	2.4	2.6	2.3	2.8	2.3	2.3	3.0	1.9	13.0	7.6
2005 Sep	2.5	2.6	2.4	2.7	2.5	2.5	3.3	2.1	10.6	5.6
2005 Oct	2.3	2.5	2.3	2.5	2.4	2.3	2.6	1.4	8.8	7.0
2005 Nov	2.1	2.3	2.1	2.4	2.3	2.3	2.3	1.3	13.5	9.6
2005 Dec	1.9	2.1	1.8	2.2	2.0	2.0	2.4	1.8	17.9	12.0
2006 Jan	1.9	2.1	1.9	2.4	2.3	2.3	2.9	1.7	15.8	10.2
2006 Feb	2.0	2.1	2.0	2.4	2.3	2.3	2.9	1.7	15.0	10.6
2006 Mar	1.8	1.9	1.7	2.4	2.1	2.2	2.5	1.9	13.0	10.0
2006 Apr	2.0	2.1	2.0	2.6	2.4	2.3	2.5	2.2	15.3	10.0
2006 May	2.2	2.3	2.2	3.0	2.9	2.8	3.1	2.4	13.6	8.6
2006 Jun	2.5	2.6	2.4	3.3	3.1	3.2	3.4	2.9	11.1	8.7
2006 Jul	2.4	2.4	2.3	3.3	3.1	3.2	2.9	2.5	10.6	8.3
2006 Aug	2.5	2.6	2.4	3.4	3.3	3.4	2.7	2.3	8.0	7.9
2006 Sep	2.4	2.6	2.3	3.6	3.2	3.3	1.9	2.2	5.4	7.4
2006 Oct	2.4	2.7	2.3	3.7	3.2	3.3	1.6	2.6	4.6	6.3
2006 Nov	2.7	3.0	2.6	3.9	3.4	3.6	1.8	2.5	3.4	4.9
2006 Dec	3.0	3.2	2.9	4.4	3.8	3.9	2.2	2.4	2.1	3.0
2007 Jan	2.7	2.9	2.6	4.2	3.5	3.7	2.2	2.5	-2.8	1.5
2007 Feb	2.8	2.9	2.6	4.6	3.7	3.9	2.3	2.7	-1.7	1.0
2007 Mar	3.1	3.1	2.9	4.8	3.9	4.0	2.7	2.7	0.2	2.0
2007 Apr	2.8	2.9	2.6	4.5	3.6	3.7	2.4	2.3	-1.5	1.4
2007 May	2.5	2.6	2.3	4.3	3.3	3.4	2.4	2.2	0.6	3.1
2007 Jun	2.4	2.5	2.2	4.4	3.3	3.3	2.5	2.1	2.4	3.3
2007 Jul	1.9	2.0	1.7	3.8	2.7	2.6	2.5	2.2	0.6	1.5
2007 Aug	1.8	1.9	1.6	4.1	2.7	2.6	2.4	2.4	1.1	2.1
2007 Sep	1.8	1.7	1.6	3.9	2.8	2.8	2.9	2.3	7.5	3.7
2007 Oct	2.1	1.9	1.8	4.2	3.1	3.0	4.0	2.4	9.7	3.2
2007 Nov	2.1	1.9	1.8	4.3	3.2	3.0	4.7	2.4	11.5	2.7
2007 Dec	2.1	2.0	1.9	4.0	3.1	3.1	5.0	2.7	13.0	4.5
2008 Jan	2.2	2.1	2.0	4.1	3.4	3.3	5.8	3.5	19.8	7.6
2008 Feb	2.5	2.5	2.3	4.1	3.7	3.6	6.0	3.5	20.8	9.3
2008 Mar	2.5	2.6	2.3	3.8	3.5	3.6	6.5	3.6	21.1	10.1
2008 Apr	3.0	3.0	2.7	4.2	4.0	3.9	7.6	4.8	24.7	13.3
2008 May	3.3	3.3	3.1	4.3	4.4	4.4	8.9	5.9	27.6	13.7

## Notes:

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.

Source: Office for National Statistics

## 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 who:

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

*plus* the number of people who:

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

**Unit wage costs**

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

**Vacancies**

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

## Directory of online tables

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

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

**Weblink:** [www.statistics.gov.uk/elmr/07\\_08/data\\_page.asp](http://www.statistics.gov.uk/elmr/07_08/data_page.asp)

Title	Frequency of update	Updated since last month
<b>UK economic accounts</b>		
1.01 National accounts aggregates	M	✓
1.02 Gross domestic product and gross national income	M	✓
1.03 Gross domestic product, by category of expenditure	M	✓
1.04 Gross domestic product, by category of income	M	✓
1.05 Gross domestic product and shares of income and expenditure	M	✓
1.06 Income, product and spending per head	Q	✓
1.07 Households' disposable income and consumption	M	✓
1.08 Household final consumption expenditure	M	✓
1.09 Gross fixed capital formation	M	✓
1.10 Gross value added, by category of output	M	✓
1.11 Gross value added, by category of output: service industries	M	✓
1.12 Summary capital accounts and net lending/net borrowing	Q	✓
1.13 Private non-financial corporations: allocation of primary income account	Q	✓
1.14 Private non-financial corporations: secondary distribution of income account and capital account	Q	✓
1.15 Balance of payments: current account	M	✓
1.16 Trade in goods (on a balance of payments basis)	M	✓
1.17 Measures of variability of selected economic series	Q	.
1.18 Index of services	M	✓

### Selected labour market statistics

2.01 Summary of Labour Force Survey data	M	✓
2.02 Employment by age	M	✓
2.03 Full-time, part-time and temporary workers	M	✓
2.04 Public and private sector employment	Q	✓
2.05 Workforce jobs	Q	✓
2.06 Workforce jobs by industry	Q	✓
2.07 Actual weekly hours of work	M	✓
2.08 Usual weekly hours of work	M	✓
2.09 Unemployment by age and duration	M	✓
2.10 Claimant count levels and rates	M	✓
2.11 Claimant count by age and duration	M	✓
2.12 Economic activity by age	M	✓
2.13 Economic inactivity by age	M	✓
2.14 Economic inactivity: reasons	M	✓
2.15 Educational status, economic activity and inactivity of young people	M	✓
2.16 Average earnings – including bonuses	M	✓
2.17 Average earnings – excluding bonuses	M	✓
2.18 Productivity and unit wage costs	M	✓
2.19 Regional labour market summary	M	✓

**Weblink:** [www.statistics.gov.uk/elmr/07\\_08/data\\_page.asp](http://www.statistics.gov.uk/elmr/07_08/data_page.asp)

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

## Prices

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

## Selected output and demand indicators

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

## Selected financial statistics

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

## Further labour market statistics

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



**Weblink:** [www.statistics.gov.uk/elmr/07\\_08/data\\_page.asp](http://www.statistics.gov.uk/elmr/07_08/data_page.asp)

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

#### Notes

A Annually  
Q Quarterly  
M Monthly

#### More information

Time series are available from [www.statistics.gov.uk/statbase/tsdintro.asp](http://www.statistics.gov.uk/statbase/tsdintro.asp)

Subnational labour market data are available from [www.statistics.gov.uk/statbase/Product.asp?vlnk=14160](http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14160) and [www.nomisweb.co.uk](http://www.nomisweb.co.uk)

Labour Force Survey tables are available from [www.statistics.gov.uk/statbase/Product.asp?vlnk=14365](http://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](http://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

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

[www.statistics.gov.uk/products/p4861.asp](http://www.statistics.gov.uk/products/p4861.asp)

### Foreign Direct Investment (MA4)

2006 edition

[www.statistics.gov.uk/products/p9614.asp](http://www.statistics.gov.uk/products/p9614.asp)

### Input-Output analyses for the United Kingdom

2006 edition

[www.statistics.gov.uk/products/p7640.asp](http://www.statistics.gov.uk/products/p7640.asp)

### Research and development in UK businesses (MA14)

2006 edition

[www.statistics.gov.uk/statbase/product.asp?vlnk=165](http://www.statistics.gov.uk/statbase/product.asp?vlnk=165)

### Share Ownership

2006 edition

[www.statistics.gov.uk/products/p930.asp](http://www.statistics.gov.uk/products/p930.asp)

### United Kingdom Balance of Payments (Pink Book)

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

[www.statistics.gov.uk/products/p1140.asp](http://www.statistics.gov.uk/products/p1140.asp)

### United Kingdom National Accounts (Blue Book)

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

[www.statistics.gov.uk/products/p1143.asp](http://www.statistics.gov.uk/products/p1143.asp)

## First releases

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

## QUARTERLY

### Consumer Trends

2008 quarter 1

[www.statistics.gov.uk/products/p242.asp](http://www.statistics.gov.uk/products/p242.asp)

### United Kingdom Economic Accounts

2008 quarter 1. Palgrave Macmillan, ISBN 978-0-230-21759-1. Price £35.

[www.statistics.gov.uk/products/p1904.asp](http://www.statistics.gov.uk/products/p1904.asp)

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

2008 quarter 1

[www.statistics.gov.uk/products/p731.asp](http://www.statistics.gov.uk/products/p731.asp)

## First releases

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

## MONTHLY

### Financial Statistics

June 2008. Palgrave Macmillan, ISBN 978-0-230-21740-9. Price £47.50.

[www.statistics.gov.uk/products/p376.asp](http://www.statistics.gov.uk/products/p376.asp)

### Focus on Consumer Price Indices

May 2008

[www.statistics.gov.uk/products/p867.asp](http://www.statistics.gov.uk/products/p867.asp)

### Monthly review of external trade statistics (MM24)

May 2008

[www.statistics.gov.uk/products/p613.asp](http://www.statistics.gov.uk/products/p613.asp)

### Producer Price Indices (MM22)

May 2008

[www.statistics.gov.uk/products/p2208.asp](http://www.statistics.gov.uk/products/p2208.asp)

## First releases

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

## OTHER

### The ONS Productivity Handbook: a statistical overview and guide

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

[www.statistics.gov.uk/about/data/guides/productivity/default.asp](http://www.statistics.gov.uk/about/data/guides/productivity/default.asp)

### Labour Market Review

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

[www.statistics.gov.uk/products/p4315.asp](http://www.statistics.gov.uk/products/p4315.asp)

### National Accounts Concepts, Sources and Methods

[www.statistics.gov.uk/products/p1144.asp](http://www.statistics.gov.uk/products/p1144.asp)

### Sector classification guide (MA23)

[www.statistics.gov.uk/products/p7163.asp](http://www.statistics.gov.uk/products/p7163.asp)

## Recent articles

### JANUARY 2008

Developments in measuring the UK service industries, 1990 to 2006  
*Keith Brook*

Planned methodological changes to the Index of Production  
*Andrew Walton, Robin Youll and Chris Hunt*

The Occupational Pension Schemes Survey 2006  
*Sarah Levy and David Miller*

Multi-factor productivity: estimates for 1997 to 2006  
*Peter Goodridge*

Labour Force Survey: interim reweighting 2007  
*Nicholas Palmer and Matthew Hughes*

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

### FEBRUARY 2008

Improvements to the measurement of government output in the National Accounts  
*Mark Pont*

Patterns of pay: results of the Annual Survey of Hours and Earnings, 1997 to 2007  
*Hywel Daniels*

The International Comparison Programme: 2005 results and supporting the programme  
*Ben Whitestone*

Linking the Annual Survey of Hours and Earnings to the Census: a feasibility study  
*Jamie Jenkins*

The revision of the 1993 System of National Accounts – what does it change?  
*Charles Aspden*

Regional economic indicators, February 2008, with a focus on regional productivity  
*Sumit Dey-Chowdhury, David Penny, Birgit Wosnitza and Martin Walker*

### MARCH 2008

Comparison of statistics on jobs: September 2007  
*Andrew Machin*

Monitoring the quality of the National Accounts  
*Ross Meader and Geoff Tily*

International comparisons of productivity: an update to understanding revisions  
*Sumit Dey-Chowdhury*

Revisions to workforce jobs: December 2007  
*Nick Barford*

Regional gross value added  
*Eddie Holmes*

Methods explained: household saving ratio  
*Graeme Chamberlin and Sumit Dey-Chowdhury*

### APRIL 2008

The gender pay gap in the UK  
*Debra Leaker*

CPI and RPI: the 2008 basket of goods and services  
*Damon Wingfield and Philip Gooding*

International comparisons of labour disputes in 2006  
*Dominic Hale*

New historical data for assets and liabilities in the UK  
*Teresa Sbano*

First findings from the UK Innovation Survey 2007  
*Stephanie Robson and Greg Haigh*

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

### MAY 2008

Comparisons between unemployment and the claimant count: 1971 to 2007  
*Richard Clegg*

Private Finance Initiative and public debt  
*Martin Kellaway*

Monitoring the coherence of ONS and Purchasing Managers' Index data  
*Graeme Chamberlin*

Secure access to confidential microdata: four years of the Virtual Microdata Laboratory  
*Felix Ritchie*

Decomposing the Retail Sales Index implied price deflator and the CPI  
*Richard McCrae, Craig H McLaren, John Wood and Robin Youll*

Regional economic indicators, May 2008, with a focus on differences in sub-regional economic performances  
*Birgit Wosnitza and Martin Walker*

### JUNE 2008

Labour disputes in 2007  
*Dominic Hale*

Modernisation of the UK's National Accounts: progress and plans for Blue Book and Pink Book 2008  
*Simon Humphries*

Labour Force Survey: reweighting and seasonal adjustment review 2008  
*Nicholas Palmer and Matthew Hughes*

Impact of methodological changes to the Index of Production  
*Andrew Walton, Robin Youll and Chris Hunt*

Review of Labour Statistics for the United Nations Statistical Commission  
*Catherine Barham*

Methods explained: the GDP implied deflator  
*Anis Chowdhury*

## Future articles

List is provisional and subject to change.

### AUGUST 2008

Regional gross disposable household income

Inventories: a cross-country comparison of behaviour and methodology

SIC 2007: implementation in ONS

Measuring the quality of the producer price index – an update

Modelling the gender pay gap in the UK: 1998 to 2006