

Economic & Labour Market Review

January 2007 | Volume 1 | Number 1

Contents

Foreword	3
In brief	4
Statistics for Africa; Public sector employment statistics; Finding inflation information on the web; Environmental accounts; Research on intangible investment; Inter-departmental task force on migration statistics	
Updates and forthcoming releases	6
Economic review	7
Key indicators	16
Independent forecasts	18

FEATURES

Official statistical publications and economic statistics	19
<i>Mavis Anagboso, Allan Flowers, Geoff Tily and Gavin Wallis</i>	
The personal inflation calculator	27
<i>Matthew Powell and Jim O'Donoghue</i>	
Inflation – experience and perceptions	33
<i>Jim O'Donoghue</i>	
Keeping the RPI and CPI basket of goods and services up to date	40
<i>Jim O'Donoghue</i>	
Earnings: summary of sources and developments	42
<i>Robert Hayes, Catrin Ormerod and Felix Ritchie</i>	
Time series analysis of the Labour Force Survey longitudinal data sets	48
<i>Catherine Barham and Nasima Begum</i>	
Methods explained: House price indices of the UK	54
<i>Sumit Dey-Chowdhury</i>	

DATA AND SUPPORT

Key time series	
National accounts aggregates; Gross domestic product: by category of expenditure;	
Labour market summary; Prices	59
Notes to tables; Concepts and definitions	63
Directory of online tables	64
Contact points	67
ONS economic and labour market publications	68
Recent and future articles	69

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

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

About the Office for National Statistics

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

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

Subscriptions

Annual subscription £200

Single issue £35

To subscribe, contact Palgrave Macmillan at

www.palgrave.com/ons or

☎ 01256 302611

This issue is now available at www.palgrave-journals.com/elmr and at www.statistics.gov.uk/elmr

Editorial office

For enquiries about this publication, contact the Editor, *Economic & Labour Market Review*, Room D4/18, Office for National Statistics, 1 Drummond Gate, London SW1V 2QQ.

☎ 020 7533 5914

✉ elmr@ons.gsi.gov.uk

Statistical enquiries

For general enquiries, contact the National Statistics Customer Contact Centre.

☎ 0845 601 3034

☎ (minicom: 01633 812399)

✉ info@statistics.gsi.gov.uk

Post: Room 1015,
Government Buildings
Cardiff Road
Newport
South Wales
NP10 8XG

You can also find National Statistics on the Internet at: www.statistics.gov.uk

A fuller list of enquiry points can be found on page 67.

© Crown copyright 2007

Published with the permission of the Controller of Her Majesty's Stationery Office (HMSO).

You may re-use this publication (excluding logos) free of charge in any format for research, private study or internal circulation within an organisation.

You must re-use it accurately and not use it in a misleading context. The material must be acknowledged as Crown copyright and you must give the title of the source publication. Where we have identified any third party copyright material you will need to obtain permission from the copyright holders concerned.

For any other use of this material please apply for a Click-Use Licence for core material at www.opsi.gov.uk/click-use/system/online/pLogin.asp or by writing to:

Office of Public Sector Information, Information Policy Team, St Clements House, 2–16 Colegate, Norwich NR3 1BQ.

☎ 01603 621000

✉ hmsolicensing@cabinet-office.x.gsi.gov.uk

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.

Foreword



I am delighted to introduce this first issue of *Economic & Labour Market Review* (ELMR). It replaces the long-running publications *Economic Trends* and *Labour Market Trends*. The design and content of the new publication reflect extensive consultation and dialogue with a very wide range of users. In particular, it has become more 'article focused', with only a few tables of statistical data; it is supported by an extensive web-based product featuring all the tables in a highly accessible electronic format which were previously available only in paper form. An article featured in this issue, 'Official statistical publications and economic statistics', explains the historical origins of this new product, and sets out examples and illustrations of the wide range of economic data that are produced by the Office for National Statistics (ONS).

As National Statistician I place a great deal of importance on making official statistics transparent and accessible to users. As part of this process, ONS is introducing an online service where users can calculate their own inflation rates based on something closer to their personal expenditure patterns than the averages used in the published statistics. The launch of this new service is supported by a series of articles in this first edition of ELMR, relating to consumer inflation measures which address the issue of why an individual's personal experience or perceptions of inflation may differ from the official figures. I have been concerned about the decline in public confidence in the statistics ONS publishes on consumer inflation. The personal inflation calculator and associated articles constitute a package that will hopefully address some of the criticisms that are made.

ELMR also includes the first 'Economic review', which will be a regular monthly feature, and the first in a series of 'Methods explained' notes, which for this edition focuses on house prices indices of the UK.

Finally, I would like to offer my thanks to all those who have been involved in the development of this new journal, and in particular to Pat Broad, Allan Flowers, David Harper, Phil Hodgson, Nitin Mehta, Claire Ricketts, Frances Sly, Geoff Tily and Gavin Wallis.

I hope you will enjoy reading this new flagship publication. The editor, David Harper, would welcome any feedback that you may have on the journal.

Karen Dunnell

National Statistician
January 2007

In brief

STATISTICAL DEVELOPMENTS

Improvements to ONS outputs

Statistics for Africa

From March 2005 the Office for National Statistics (ONS) has been managing a three-year DFID-funded project aimed at supporting improvements to consumer price indices (CPIs) and other macroeconomic statistics in Africa.

The overall goal of the project is to facilitate a positive outcome to the International Comparison Programme (ICP) in Africa and to effectively exploit ICP Africa as a catalyst for sustainable statistical capacity building in the longer term.

The ICP is a global initiative to produce internationally comparable price levels allowing for the relative purchasing power of different currencies. This informs users about the size and structure of economies and allows them to calculate internationally comparable indicators. One of the main uses of the ICP results will be to monitor progress towards the key UN Millennium Development Goal of reducing by half the proportion of people living on less than one dollar a day.

Through the provision of technical assistance directly to African countries, the project has made good progress towards its goal of Africa's successful inclusion in the ICP. ONS has provided support to 16 African countries, focusing on the two main requirements for the ICP: the collection of good-quality price data for the successful compilation of purchasing power parities (PPPs), and exploiting all available National Accounts and Household Budget Survey information for use as weights for the compilation of PPPs.

Provisional ICP Africa results will be published by the African Development Bank this year followed by results at the global level from the World Bank.

The project's second objective is to exploit the investment in ICP Africa as a catalyst for sustainable statistical capacity building in the longer term, and contribute to the goal of an improved and sustainable evidence base for country-level decision making.

This work will begin in earnest this year, focusing on: facilitating improvement in national CPIs through the integration of ICP methods; supporting the harmonisation of CPIs across African

sub-regions; producing a supplementary handbook to the ILO manual on consumer price indices, focusing on price collection in the developing world; and exploring the use of technology to improve African CPIs.

Contact

Ben Whitestone
020 7533 5926
benjamin.whitestone@ons.gsi.gov.uk

Public sector employment statistics

Improvement of public sector employment (PSE) statistics is a priority for government for a number of policy-related purposes, as highlighted by several government reports. In 2004, ONS launched a continuing development programme aimed at producing a single set of accurate figures for the public sector workforce and improving the frequency, timeliness, comparability and coverage of the statistics. Previously, most PSE statistics were available only on an annual basis and they lacked coherence.

In 2005, ONS, in collaboration with other departments, implemented major improvements to PSE estimates. Standard definitions were agreed, in line with National Accounts concepts, and a single definitive set of quarterly PSE estimates introduced. A new Quarterly Public Sector Employees Survey of public sector organisations was established. ONS now publishes the official PSE estimates each quarter, as National Statistics, three months after the period to which they refer, at the same time as the release of other labour market statistics. Breakdowns by government sector and broad industry groups, back to 1991, and estimates of private sector employment are available. Seasonally adjusted series (back to 1999) were introduced in November 2006.

For other analyses of public sector employment, including regional breakdowns and analysis by characteristics such as occupation, age, ethnicity, disability and working hours, which are not available from the data collected from public sector organisations, it is necessary to make use of the Labour Force Survey. While this survey is the best source for many labour market statistics, there are limitations to the analysis of employment by sector and

industry and approximate adjustments need to be made to the data. This is because individuals responding to the survey often find it difficult to give accurate details of their employers and their activity.

Plans for further improvements to the statistics include the full integration of the PSE estimates in the wider ONS employment and jobs statistical system and the provision of improved regional estimates, based on data provided by public sector organisations.

More information

www.statistics.gov.uk/statbase/product.asp?vlnk=13615

Contact

Andrew Machin
020 7533 6178
andrew.machin@ons.gsi.gov.uk

Finding inflation information on the web

The National Statistics website pages relating to consumer price indices have been revamped to make it easier for users to find the information they require. This is part of a package of measures designed to aid understanding of the consumer inflation figures, which sees the publication of four articles relating to consumer price inflation, three of them in this edition of ELMR, and the launch of an online personal inflation calculator.

Information about the consumer prices index (CPI) or the retail prices index (RPI) is now generally no more than two or three clicks away, no matter where the user is on the prices website pages. This has been achieved by making sure that all information is accessible from one of six key pages, and including some or all of these key pages as related links on each prices website page. The key pages are:

- the inflation story
- the First Release
- guide to finding RPI data
- guide to finding CPI data
- guide to methodology, and
- the guide to calculating inflation rates

Each of the 'guide to' pages describes what information can be found via each of the related links hanging off that page.

Contact

Jim O'Donoghue
 ☎ 020 7533 5849
 ✉ jim.o'donoghue@ons.gsi.gov.uk

RECENT RELEASES

Government statistical publications

Environmental accounts

ONS published the autumn edition of *Environmental Accounts* on 23 November 2006. This showed that, following an increase in the use of natural resources in 2004, reduced demand, mainly for minerals, resulted in a fall in 2005. In 2005, the quantity of natural resources used by the UK economy, known as domestic material consumption, fell by 20 million tonnes (2.8 per cent) to 686 million tonnes.

Demand for biomass (agricultural harvest, forestry, fishing, etc.) and fossil fuels also fell, but by smaller amounts, between 2004 and 2005. However, over the last ten years, resource use remains broadly unchanged, despite rising levels of economic activity.

Imports of natural resources rose for the third consecutive year to a record 280 million tonnes in 2005 although, at 2.6 per cent, the rate of increase has slowed compared with the preceding two years. This rise is mainly due to rising fossil fuel imports which, at 137 million tonnes, were 7.9 per cent higher than a year earlier. Exports of natural resources and domestic extraction fell between 2004 and 2005, largely as a result of lower levels of fossil fuel extraction.

Overall, these factors led to the deficit on the physical trade balance (the difference between exports and imports) rising to 103 million tonnes. However, material productivity has increased between 1990 and 2005 indicating that material use is falling in relation to the level of economic activity in the UK.

UK *environmental accounts* provide information on the demands that UK economic activity places on the environment, on the importance of natural resources to the economy and the monetary measures taken to address environmental concerns. They are used to inform sustainable development policy, to model impacts of fiscal or monetary measures and to evaluate the environmental impacts of different sectors of the economy.

Also published in the autumn 2006 edition of *Environmental Accounts* was information on environmental

taxes, forestry, oil and gas reserves, and radioactive waste.

The next edition of *Environmental Accounts* will be published in June 2007.

More information

✉ www.statistics.gov.uk/statbase/product.asp?vlnk=3698

Contact

Ian Gazley
 ☎ 020 7533 5904
 ✉ ian.gazley@ons.gsi.gov.uk

Research on intangible investment

As the UK economy shifts towards knowledge-based activities and higher value-added goods and services, business investment is increasingly shifting towards spending on research and development, branding, training and organisational change. At present, these are classified as current expenditure in National Accounts but, given their purpose of raising future output, might be considered as investment.

ONS is working with researchers from Queen Mary College¹, to test the implications for economic measurement. Official estimates of UK business investment are based on the internationally-agreed System of National Accounts (SNA) definitions that are strongly focused on investment in tangible assets. Software investment is included, and estimates published by ONS in February 2006 showed that improvements to the measurement of own-account software could raise measured total UK software investment. These estimates are currently experimental. Looking further ahead, the ongoing SNA review appears likely to conclude that research and development should be classified as investment.

New academic work estimates business investment in intangibles, including research and development, branding, training and organisational change, in the UK and US. For the UK, total investment in intangibles is estimated to be £116 billion in 2004, equivalent to 10 per cent of GDP. This compares with officially measured business investment in 2004 of £112 billion. While uncertain, these estimates suggest that a broader definition of intangible capital could roughly double UK business investment. Estimates for the US² yielded similar results, with business sector investment in intangibles equivalent to around 11 per cent

of GDP between 1998 and 2000.

The next step in this research will examine the growth of intangible investment over recent years, its impact on growth estimates, and implications for assessments of productivity in the market sector of the UK economy.

¹ Giorgio Marrano M and Haskel J (2006), How much does the UK invest in intangible assets?, Queen Mary College, Department of Economics, working paper 578

² Corrado C, Hulten C and Sichel D (2006), Intangible capital and economic growth, NBER working paper 11948.

Contact

Tony Clayton
 ☎ 020 7533 5913
 ✉ tony.clayton@ons.gsi.gov.uk

REVIEWS AND BENCHMARKING

Routine changes to regular statistics

Inter-departmental task force on migration statistics

In May 2006, ONS set up an inter-departmental task force on migration statistics with other government departments. The objective of the task force was to recommend timely improvements that could be made to estimates of migration and migrant populations in the United Kingdom, both nationally and at local level, in advance of those that might flow from long-term strategic systems such as e-borders. The final report of the task force was published on 15 December 2006.

Understanding migration is vital to estimating the size and distribution of the population and how it is changing. For the last few years, migration has been the main factor affecting population numbers in this country. There is now a broad recognition that available estimates of migrant numbers are inadequate to meet all the purposes for which they are now required.

Work undertaken by ONS in recent years has identified some improvements that can be made quickly. These will be reflected in population figures to be published this year. The recommendations of the task force, if fully implemented, would lead to further improvements between 2008 and 2012.

The actions recommended are designed to get better information about the complex area of migration and to deliver more timely, comprehensive statistics covering both long- and short-term migration. Improvements to the following are proposed:

- port surveys
- population surveys and the Census
- timely access to administrative information
- better links between information from administrative sources
- better statistical techniques

By delivering these improvements, the aim would be to have:

- a more coherent picture of UK migration
- more reliable estimates of population and migration at regional and local levels
- information on short-term migrants (as migration estimates do not currently include figures on short-term migrants)
- statistics that more accurately relate intentions at entry to actual behaviour and to experience and events once in the country
- more comprehensive, timely and accurate figures on key migrant groups living in the country
- more timely and robust indicators of trends in migrant numbers

More information

✉ www.statistics.gov.uk/about/data/methodology/specific/population/future/imps/updates/default.asp

Contact

Peter Goldblatt
 ☎ 020 7533 5265
 ✉ peter.goldblatt@ons.gsi.gov.uk

UPDATES

Updates to statistics on
www.statistics.gov.uk

6 December 2006

Index of production

Manufacturing: 0.3% three-monthly rise in October

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

11 December 2006

Producer prices

Factory gate inflation rises to 1.8% in November

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

UK trade

Deficit narrowed to £3.9 billion in October
www.statistics.gov.uk/cci/nugget.asp?id=199

12 December 2006

Inflation

CPI at record 2.7%, RPI at 3.9% in November

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

13 December 2006

Average earnings

Pay growth up in year to October 2006

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

Employment

Rate falls to 74.5% in three months to October

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

Public sector employment

Rate levels off

www.statistics.gov.uk/cci/nugget.asp?id=407

14 December 2006

Retail sales

Modest growth continues in November

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

15 December 2006

Regional GVA

Highest in London and South East in 2005

www.statistics.gov.uk/cci/nugget.asp?id=420

20 December 2006

Business investment

3.1% rise in third quarter of 2006

www.statistics.gov.uk/cci/nugget.asp?id=258

Public sector

£7.7 billion current budget deficit in November

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

21 December 2006

Balance of payments – Q3 2006

UK deficit widens in third quarter

www.statistics.gov.uk/cci/nugget.asp?id=194

GDP growth

Economy rose by 0.7% in Q3 2006

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

22 December 2006

Productivity

Productivity growth increases in Q3

www.statistics.gov.uk/cci/nugget.asp?id=133

Index of services

Experimental: 0.9% three-monthly rise into October

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

FORTHCOMING RELEASES

Future statistical release on
www.statistics.gov.uk

2 January 2007

Distributive and service trades – October 2006

3 January

PM34.10: motor vehicle production business monitor – November 2006

4 January

Profitability of UK companies: Q3 2006

10 January

UK trade – November 2006

11 January

Index of production – November 2006

12 January

Annual Survey of Hours and Earnings (ASHE) – 2005 results (part 3)

15 January

MM24: monthly review of external trade statistics November 2006

Producer prices – December 2006

16 January

Consumer price indices – December 2006

17 January

Financial statistics – January 2007

Labour market statistics – January 2007

19 January

Public sector finances – December 2006

Research and development in UK businesses, 2005 (Business Monitor MA14)

Retail sales – January 2007

SDM28: Retail sales – December 2006

22 January

Capital expenditure items purchased by businesses – 2005

23 January

MM22: Producer prices – December 2006

24 January

Average weekly earnings – November 2006

Engineering turnover and orders – November 2006

Gross domestic product (GDP) – preliminary estimate Q4 2006

Index of services – November 2006 (experimental)

Public sector finances: supplementary (quarterly) data

Average weekly earnings – November 2006

25 January

Monthly digest of statistics – January 2007

Motor vehicle production – December 2006

Financial statistics – January 2007

26 January

Digest of engineering turnover and orders – November 2006

31 January

Distributive and service trades – November 2006

PM34.10: motor vehicle production business monitor – December 2006

Economic review

January 2007

Anis Chowdhury

Office for National Statistics

OTHER MAJOR ECONOMIES

Global growth slows

Data for the other major OECD countries are now available and show a mixed but an overall weakening picture of the global economy. US GDP data for the third quarter showed a further slowdown. Growth was 0.5 per cent compared to 0.6 per cent in the previous quarter. The slower rate of growth was led by a marked fall in residential investment and to a lesser extent a high trade deficit. On the other hand, private consumption, business investment and government spending were resilient. Japan's growth continues to show weakness. Growth was 0.2 per cent, slightly down from 0.3 per cent in the previous quarter. Lower growth was mainly driven by lower household consumption expenditure and to a lesser extent, lower growth in manufacturing investment. This was offset by relatively strong exports.

Growth in the three biggest mainland EU economies – Germany, France and Italy – also showed a weakening picture. Euro-area growth overall was 0.5 per cent, down from 0.9 per cent in the previous quarter. German GDP growth was 0.6 per cent in 2006 quarter three, still a modest rate of growth but a marked deceleration from growth of 1.1 per cent in the previous quarter. The lower growth was mainly due to a lower rate of investment. This was offset by a rebound in private consumption and higher exports. French GDP growth showed an even more marked deceleration to the point of achieving flat growth in the third quarter. This compares with growth of 1.2 per cent in the second quarter. The slowdown reflected primarily, a sharp fall in business investment. The slowdown was also to a lesser extent driven by a contraction in exports and lower private consumption growth, although the latter continues to grow at a healthy rate. Italy GDP grew by a muted 0.3 per cent, down from 0.6 per cent in the previous quarter. There was an acceleration in household consumption expenditure; offset by a sharp fall in total investment and net exports.

SUMMARY

GDP continues to grow robustly in 2006 quarter three, driven by services and manufacturing output. On the demand side, business and government investment made a positive contribution to growth; however, consumer expenditure made a more modest contribution to growth. The labour market appeared weaker in quarter three but matters may be reversing in quarter four. The UK current account deficit widened in quarter three; and public net debt continued to rise. Public sector net debt continued to rise in 2006 quarter three. Consumer and producer price inflation rose in November 2006.

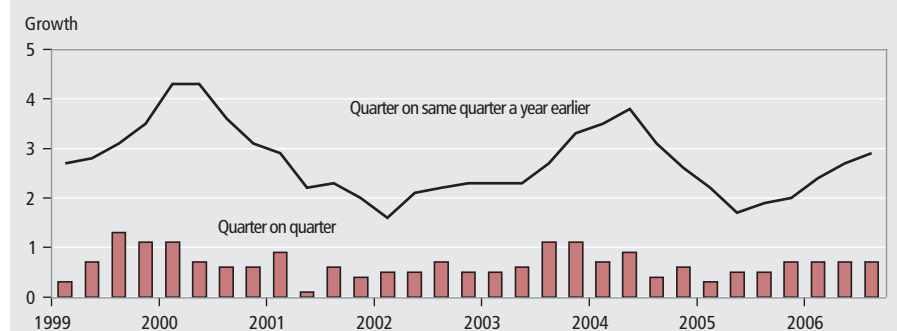
GROSS DOMESTIC PRODUCT

Third quarter growth of 0.7 per cent

GDP growth for the third quarter of 2006 is estimated to have grown by a robust 0.7 per cent, unchanged from the preliminary estimate and a similar rate to the previous quarter. This is the fourth consecutive quarterly growth rate of 0.7 per cent. The annual rate of growth rose by 2.9 per cent, up from 2.7 per cent in the previous quarter (Figure 1).

The growth rate in the UK economy in 2006 quarter three continues to be led by strong growth in service sector output. Total industrial production growth in contrast remains subdued, recording virtually flat growth and continuing the trend from the previous quarter. Within production, manufacturing output was fairly robust, but was offset by weak mining & quarrying and energy output. Construction output showed relatively strong growth. On the expenditure side, growth was led by business and to a lesser extent government investment.

Figure 1
Gross Domestic Product



FINANCIAL MARKETS

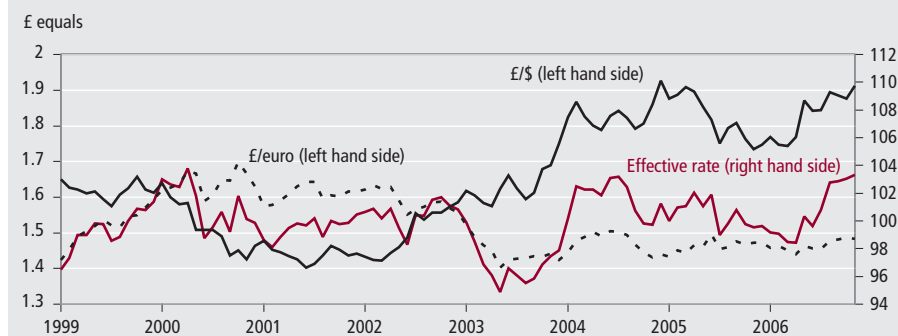
Share prices rise and pound appreciates in the third and fourth quarters

Equity performance has been fairly volatile in 2006. The FTSE All-Share index rose by around 9 per cent in 2006 quarter three, following a decrease of around 8 per cent in the previous quarter. This perhaps could be due to a more optimistic outlook of the global economy on the part of investors. Also it could be a reflection of reports of stronger corporate profitability, which has been helped to some extent by the easing of energy prices, particularly towards the latter part of 2006 quarter three. Signs of 2006 quarter four show a continuation of that trend with share prices rising by around 7 per cent in November 2006.

As for currency markets, 2006 quarter three saw sterling's average value appreciate against the dollar by around 2.0 per cent, following appreciation of around 4.0 per cent in the previous quarter. Against the euro, sterling's value appreciated by around 1.0 per cent in 2006 quarter three following virtually flat growth in the previous quarter. Overall, the quarterly effective exchange rate appreciated by about 3.0 per cent following depreciation of about 1.0 per cent in 2006 quarter two (**Figure 2**). The pound appreciated by 2.0 per cent against the dollar in November, nearly approaching the \$2 parity. Against the euro, the pound was broadly flat. In November, the effective exchange rate appreciated by around 1.0 per cent further.

The recent movements in the exchange rate might be linked to a number of factors. Firstly, exchange rate movements can be related to the perceptions of the relative strengths of the US, the Euro and UK economy. The appreciation of the pound against the dollar and euro in 2006 quarter three and the dollar in the early part of quarter four may be partly linked to perceptions of stronger UK economic growth, leading to inflationary pressures and therefore the prospects of higher interest rates in the UK. In recent months, there have been particular concerns regarding the impact of the US housing slowdown and weaker US GDP growth. This may have lessened the likelihood of further interest rate rises in the US. US interest rates currently stand at 5.25 per cent. There may be lower

Figure 2
Exchange rates



inflationary pressures in the EU area and this may have lessened the likelihood of future interest rate rises, although interest rates were raised in the euro-area by a further 0.25 percentage points in December, following the 0.25 percentage points rise in October 2006 to leave rates currently standing at 3.50 per cent. In the UK, interest rates were raised by 0.25 percentage points to 5.0 per cent in November 2006.

Secondly, another factor for the US depreciation relative to the pound may be due to the current account deficit which is generally seen as a weakness for the US economy. The dollar may have fallen recently in response to a readjustment process, with the consequence of making exports cheaper and imports dearer – thus in theory leading to switch in expenditure to home produced goods and ultimately leading to a narrowing in the deficit.

OUTPUT

Services sector drives economic growth

GDP growth in 2006 quarter three was estimated at 0.7 per cent, the same as growth in the previous quarter. On an annual basis it was 2.9 per cent, up from 2.7 per cent in 2006 quarter two.

Construction activity is estimated to have picked up slightly in the third quarter of 2006. Construction grew by 0.7 per cent in quarter three, up from 0.5 per cent in the previous quarter. Comparing the quarter on the quarter a year ago, construction output rose by 1.8 per cent following virtually flat growth in the previous quarter (**Figure 3**).

As for external surveys of construction, the CIPS survey signalled strengthening activity in 2006 quarter three, with the headline index at 53.8, up from 52.4 in the previous quarter. In November, the index was 54.8, led by strong housing activity, offset by a fall in commercial activity. The RICS survey also reports growth in construction activity, although the workload balance fell slightly in 2006 quarter three to 21 from 24 in the previous quarter.

Total output from the production industries rose by just 0.2 per cent in 2006 quarter three, a marginal improvement from 0.1 per cent growth in the previous quarter. The main downward effect came from a contraction of 3.8 per cent of mining and quarrying output (including oil & gas production), following a fall of 3.7 per cent in the previous quarter. These decreases were due to a combination of structural factors (that is, lower productive capacity leading to lower oil and gas output) and

Figure 3
Construction output

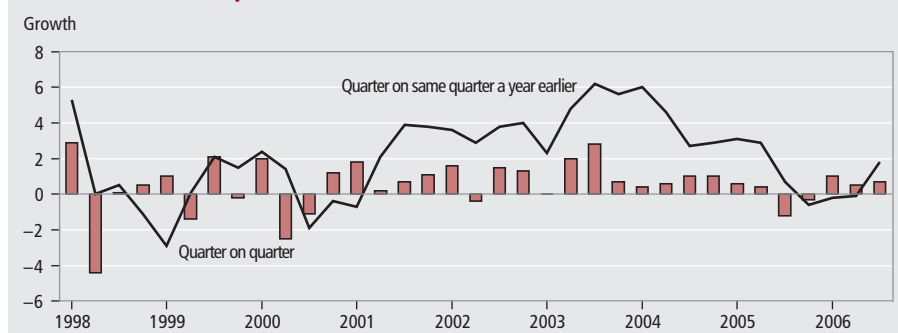


Figure 4
Manufacturing output



temporary maintenance shutdowns. Weak industrial production was also to a lesser extent driven by subdued output from the electricity, gas and water supply industries. Growth fell by 0.2 per cent, albeit an improvement from the 2.7 per cent decrease in the previous quarter. The muted energy output growth was primarily due to warmer weather in quarter three. It is worth noting that production growth in the mining and quarrying industries and electricity, gas and water supply industries has been volatile in recent quarters. The weakness in mining and quarrying and energy output was offset by continued buoyancy in manufacturing output. Manufacturing output in the third quarter of 2006 is estimated to have grown by 0.7 per cent, down on the 0.9 per cent growth in the previous quarter. On an annual basis it grew by 1.8 per cent, up from 1.1 per cent in the previous quarter; the strongest growth since 2004 quarter two (Figure 4).

According to the latest figures, industrial production in the three months to October fell by 0.2 per cent. Over the same period, manufacturing output increased by 0.3 per cent, while mining and quarrying output decreased by 3.0 per cent and output of the electricity, gas and water supply industries decreased by 1.5 per cent, compared with the previous three months.

External surveys of manufacturing for 2006 quarter three show a generally mixed picture (Figure 5). It is not 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 was 53.8 in 2006 quarter three, slightly down from 54.1 in the

previous quarter, but still indicative of robust growth. The latest monthly CIPS report indicates continued robustness in the manufacturing sector with the headline index at 52.6 in November, although there was a fall in output and new orders. The CBI, in its quarter three Industrial Trends survey, report a weakening picture in quarter three, with overseas demand levelling out and the decline in domestic orders accelerating. According to the latest monthly Industrial Trends survey, the CBI report a slight improvement in December. The BCC survey in contrast reports a mostly positive picture. The net balance for home sales rose to plus 18 from plus 13 in quarter two. The net balance for home orders rose by 1 point to plus 21.

Overall, the service sector, by far the largest part of the UK economy and the main driver of UK growth recently, continued to grow strongly in 2006 quarter three. Growth was 0.8 per cent, down from 1.0 per cent growth in the previous quarter. The annual growth rate was 3.7 per cent, the strongest since 2006 quarter two (Figure 6). The main contribution to the growth rate came from business services and finance output which grew by a robust 1.4 per cent, down from 1.6 per cent in the previous quarter. This was followed by growth in government and other services output of 0.4 per cent, a similar rate to the previous quarter. Transport, storage and communication saw fairly subdued growth of 0.3 per cent, down from 0.7 per cent in quarter two. The distribution, hotels and catering sector experienced a notable deceleration in output with growth of just 0.2 per cent from 0.9 per cent in the previous quarter, following weaker retail sales.

The external surveys on services showed a mixed picture in 2006 quarter three. The CIPS survey echoes the official picture with the headline index signalling strong growth in 2006 quarter three, although it showed a marginal weakening compared to quarter two. The average headline index was 57.2 down from 59.2 in the previous quarter.

Figure 5
External manufacturing indicators

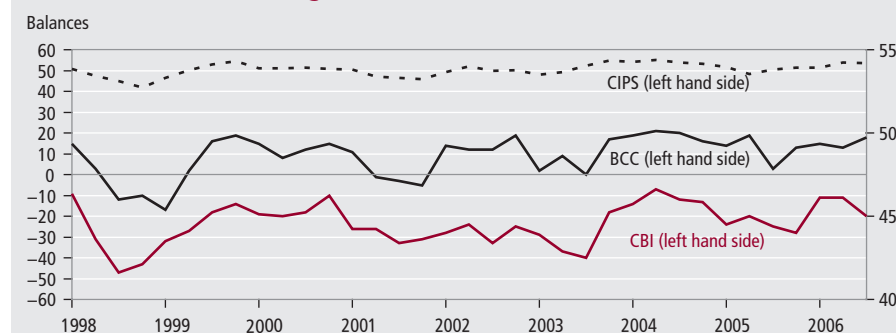


Figure 6
Services output

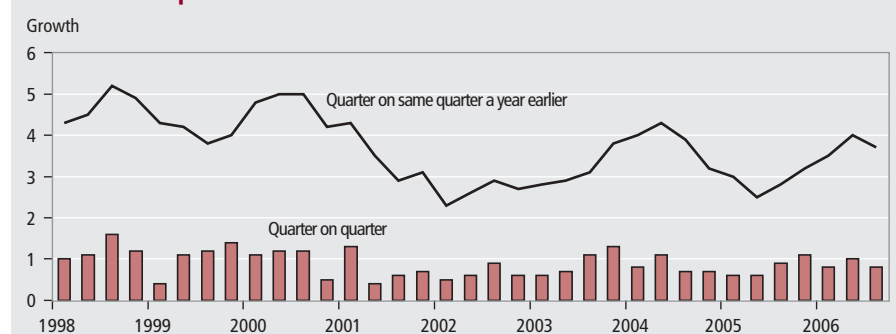
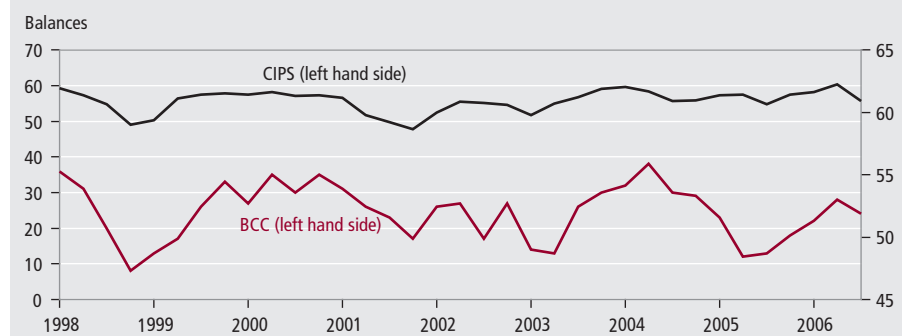


Figure 7
External services indicators



It should be noted that the CIPS survey has a narrow coverage of the distribution and government sectors. According to the latest CIPS survey, the headline index strengthened to 59.8 in November, led by gains in new business.

The CBI and BCC report a mixed picture of service sector output (**Figure 7**). The CBI, in its latest service sector survey in November, reported strong growth in business volumes. The CBI report that consumer services business volumes grew at their fastest rate since February 2005 with the balance at plus 30, reversing the minus 35 in the previous survey. Business and professional services volumes also grew strongly with the balance at plus 33 from plus 15 in the previous survey. The BCC in its 2006 quarter three survey reported a mixed but overall slightly weakening picture. The net balance for home sales fell 4 points to 24 points. The net balance for home orders rose by 1 point to plus 21.

The UK sectoral account shows the UK corporate sector once again as being a big net lender in 2006 quarter three. Despite the surplus, the overall debt level remains high due to the heavy borrowing between 1997 and 2001. The household sector remains a net borrower as income growth proved insufficient to finance total outlays. Household debt levels continue to be relatively high, although quarterly interest payments on the loans have steadily increased in recent quarters, due to rises in interest rates, but remain low relative to the late eighties. The level of central government borrowing eased in quarter three from quarter two, but continues to remain high, due to decreasing tax revenues alongside higher rises in cash expenditure. The current account of the UK balance of payments continues to be in deficit.

EXPENDITURE

Consumer spending weakening

Household consumption expenditure was weaker in 2006 quarter three following a strong bounce-back in quarter two. Growth was a fairly modest 0.4 per cent compared to 0.9 per cent in the previous quarter. Growth compared with the same quarter a year ago was 2.1 per cent, up from 2.0 per cent in the previous quarter, but still below the above 3 per cent growth rates in 2003 and 2004 (**Figure 8**).

Growth has generally been a little subdued since the last quarter of 2004,

partly due to weak retail sales and this appears to be the case in 2006 quarter three. The bounce back in quarter two may have been partly related to World Cup effects, with the sale of World Cup related merchandise, that is, sales of plasma TV screens and replica football shirts. It should be noted that household consumption accounts for a much broader range of spending than just retail sales. For instance, household purchases of services, motor vehicles and housing (imputed rents) are not included in retail sales. Since the beginning of 2005, retail sales have grown faster than household consumption as a whole but in the latest quarter this appears to have narrowed.

In terms of expenditure breakdown, the slowdown in household consumption was due to weaker growth in durable goods expenditure offset by higher expenditure on services.

Retail sales on a quarterly basis grew by 0.8 per cent in 2006 quarter three, down from 1.9 per cent in 2006 quarter two. Figures are published on a monthly basis and the latest available figures for November showed a weakening in retail sales from quarter three, and a fairly modest rate of growth (**Figure 9**). According to the latest figures, the volume of retail sales in the three months to November 2006 was 0.5 per cent

Figure 8
Household demand

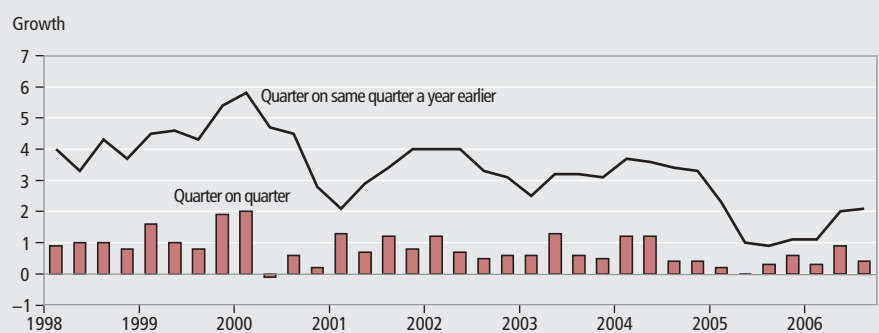


Figure 9
Retail sales



higher than the previous three months. This followed growth of 0.6 per cent in the three months to October. On an annual basis, retail sales grew by 3.3 per cent in the three months to November, down from 3.7 per cent compared to the three months to October compared to a year ago.

At a disaggregated level, growth during the three months to the end of November retail sales growth was driven by the 'Predominantly non-food' sector which grew by 0.8 per cent. Within this sector, growth was led by the 'Non-store retailing and repair' sector, which includes mail order and internet sales, which grew by 1.6 per cent.

Despite the marginally lower growth in retail sales in the three months to November, retail sales continue to hold up fairly well. This could be due price movements. The retail sales deflator grew by 0.3 per cent in November – the third monthly rise in a row, but an easing from growth of 0.7 per cent in September. This may have given continued encouragement to consumers to spend, although the latest rise in the shop price deflator could have contributed to the marginal slowdown in sales in November.

The CBI in its monthly Distributive Trades survey report strong growth in retail sales volumes in December – with the balance at plus 25 – the highest for two years. The British Retail Consortium (BRC) report that like-for-like retail sales grew by just 0.5 per cent in November, down from 2.6 per cent in October (**Figure 10**).

There could be a number of reasons causing the weaker household consumption expenditure and to lesser extent retail sales. The first factor may be attributed to the quarter point increase in interest in August 2006 to 4.75 per cent which may have started to impact on consumer expenditure, mainly through unsecured lending. 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. It is possible that the rise in interest rates has discouraged borrowing in view of the higher re-financing costs. Indeed credit card and M4 (that is, bank) lending has been relatively weak in 2006 quarter three. Real disposable income has been virtually fairly flat in 2006 quarter with growth of just 0.2 per cent, with growth in taxes on income exceeding the growth in wages and salaries and social benefits.

A secondary impact may have come about through secured lending. In recent years, a source of consumption expenditure has come via equity release. A rise in interest rates may have impacted on consumer expenditure in terms of reduced spending on household durable goods, by making re-financing of the equity release costlier.

Actual and potential increases in utility bills may have dampened expenditure. Indicators for consumer expenditure such as MORI and GfK generally report a negative picture for the third quarter of 2006 and the early part of quarter four. The labour market has shown a mixed picture, with relatively subdued wage growth.

The savings ratio in 2006 quarter three was 5.1 per cent, down marginally from 5.4 per cent in quarter two. There was growth in wages and salaries of 1.0 per cent and growth of social benefits of 1.8 per cent; this was offset by growth in household expenditure of 1.2 per cent and growth in taxes on income of 3.9 per cent. The marginal slowdown may reflect an element of caution on the part of households to draw on their savings to spend.

The sectoral accounts show how the strength of consumer demand relative to available resources has led in recent years to the household sector becoming a net borrower. Household net borrowing was £7.5 billion in 2006 quarter three compared

to £6.4 billion in the previous quarter.

Conversely, on the upside, house prices continue to grow strongly at a round 9.0 per cent on an annual basis; and this may outweigh any concerns about increase in mortgage and equity release borrowing costs.

The financial account shows that the general movement from net lending to borrowing since 1992 has primarily been facilitated by increases in both secured and unsecured lending. In 2006 quarter three, lending was driven by loans on secured dwellings – of about £30 billion; this was offset by a weaker growth in unsecured lending – of around £537 million. The growth of secured lending may reflect households just choosing to incorporate some of their unsecured debts into their secured borrowing to lower the cost of re-financing. This subsequently may have released expenditure, leading partly to moderate growth in consumption expenditure in 2006 quarter three. 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.

BUSINESS DEMAND

Business investment accelerates

Total investment grew relatively strongly in 2006 quarter three. Growth was 1.8 per cent compared to 0.5 per cent in the previous quarter. On an annual basis it grew by 4.9 per cent, and was primarily driven by business investment (**Figure 11**).

Business investment for the third quarter of 2006 showed a fairly robust growth of 3.1 per cent, following a 31.1 per cent decrease in the previous quarter. On an annual basis it grew by 8.2 per cent, up from 5.3 per cent in the previous quarter, the strongest growth since 2005 quarter two. In terms of assets, the annual growth was broadly driven, led by a strong growth in 'other machinery and equipment' expenditure of 8.9 per cent followed by 'dwellings' investment of 7.5 per cent. The data suggests an improving climate for business investment. Profitability is one factor determining investment. The expectations of future higher profits may provide an explanation for the increased investment in quarter three. It also may be provided by a positive outlook of the global economy aided by improved export prospects.

Figure 10
External retailing indicators

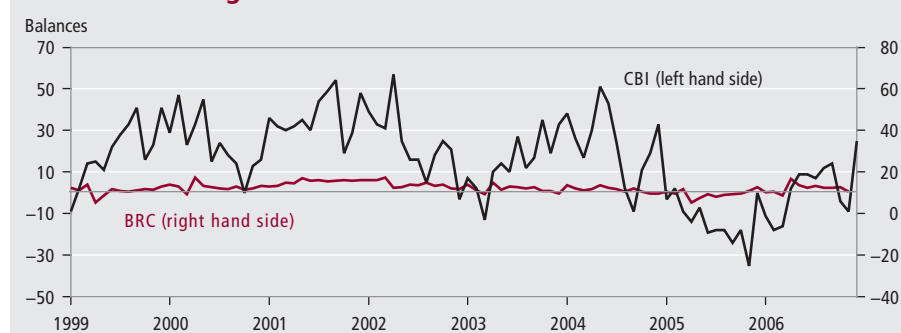
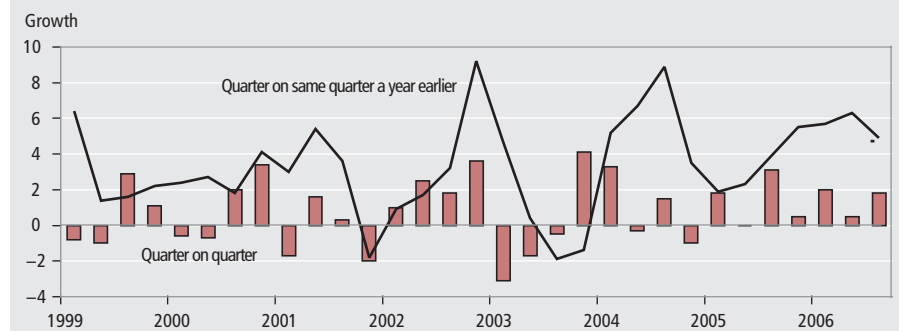


Figure 11
Total fixed investment



According to the sector accounts, the private non-financial corporate sector was a net lender in 2006 quarter three, lending £6.6 billion, the same as in the previous quarter. This is mainly due to a combination of higher profits and interest payments received. Corporate sector debt levels remain high despite the sector surplus of recent years. The financial balance sheet shows the corporate sector had net liabilities of £1.8 billion.

Evidence on investment intentions from the latest BCC and CBI surveys showed a somewhat mixed picture. According to the quarterly BCC survey, the balance of manufacturing and services firms' investment in plant and machinery rose by six points to plus 22. The CBI in its 2006 quarter three Industrial Survey report a weakening in investment with the balance at minus 15.

GOVERNMENT DEMAND

Budget deficit improves; net borrowing widens

Government final consumption expenditure accelerated further in 2006 quarter three to 0.8 per cent, from 0.6 per cent in the previous quarter. Growth quarter on quarter a year ago was 2.1 per cent, unchanged from the previous quarter (**Figure 12**).

The latest figures on the public sector finances showed the government continue to operate a financial deficit, with government expenditure continuing to exceed revenues. Over the financial year April to November 2006/07, the current budget was in deficit by £16.1 billion, a lower deficit compared to £20.0 billion for financial year April to November 2005/06. In contrast, net borrowing (which includes capital investment) increased to £31.9 billion in the financial year April to November 2006/07 from £31.1 billion

in the previous financial year 2005/06. Higher growth in corporation tax receipts, particularly from oil companies and higher income tax and VAT receipts has led to a lower current budget deficit in the current financial year. However, investment spending continues to grow strongly, resulting in higher net borrowing.

The financial account shows that most of the deficit has been financed by the issue of government securities. The latest quarter saw the stock outstanding amounting to £444.2 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 by the end of

November 2006 was 37.1 per cent of GDP, up from 36.6 per cent of GDP in October and up from 36.4 per cent of GDP over the financial year 2005/06.

TRADE & THE BALANCE OF PAYMENTS

Current account deficit widens

The publication of the latest quarterly balance of payments shows that the current account deficit widened in 2006 quarter three to £9.4 billion from a deficit of £8.2 billion in the previous quarter (**Figure 13**). As a proportion of GDP, the deficit rose to 2.9 per cent of GDP from 2.6 per cent in 2006 quarter two.

The widening deficit in 2006 quarter three was due to a lower surplus in income partially offset by a higher surplus on trade in services and a fall in the deficit on trade in goods. The surplus on income fell to £6.5 billion, while the surplus in trade in services increased to £7.2 billion. The trade in goods narrowed to £20.5 billion. The deficit in current transfers was little changed at £2.7 billion.

The lower surplus in income was due mainly to lower direct investment earnings of UK Banks and Private non-financial corporations abroad, and higher earnings on 'other' investment abroad. This was offset by higher foreign earnings on both

Figure 12
Government spending

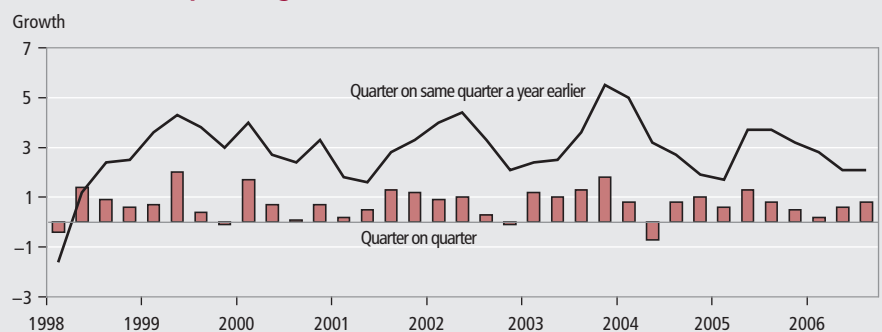
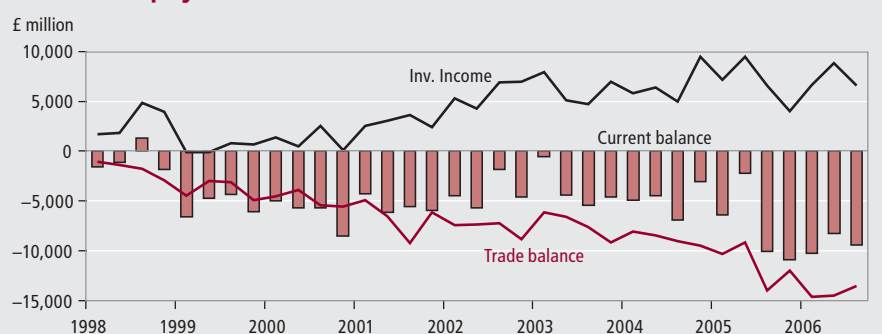


Figure 13
Balance of payments



direct investment and 'other' investment in the UK, which may be partly related to exchange rate movements aligned to changes in interest rates and partly due to higher profits accrued to foreign owned companies in the UK.

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

Data for 2006 quarter three shows the UK continuing to have a large trade deficit in goods with levels of imports rising faster than exports. This is providing a negative contribution towards GDP growth in the third quarter.

The appreciation of the pound recently may have been a factor for the relatively high trade deficit in 2006 quarter three, as a higher pound makes imports cheaper and exports more expensive. Lower GDP growth in the euro-zone and the US in the third quarter may also be factors in sustaining a relatively high UK trade in goods deficit, as they are major markets for UK exports.

In the third quarter, the deficit on trade in goods marginally improved to £20.5 billion from £20.9 billion in quarter two. Exports fell by £10.9 billion while imports fell by £11.4 billion. However, these figures are severely distorted by volatility in VAT Missing Trader Intra-Community (MTIC) Fraud. These falls and changes between areas are related to significant falls in trading associated with MTIC fraud; but again these figures need to be treated with caution. In terms of level, estimated MTIC VAT fraud fell to £2.4 billion in 2006 quarter three, down from £13.6 billion in quarter two.

According to the latest trade figures in October, the UK's deficit on trade in goods and services is estimated at £3.9 billion, down from £4.4 billion in September. In the three months ended October, the deficit on trade in goods and services narrowed to £12.9 billion from a £14.9 billion deficit in the previous three months. In the same period, total exports of goods in volume terms to EU countries fell by 15.0 per cent and imports by 18.0 per cent. Total volume exports to non-EU countries fell by 3.8 per cent whilst imports rose by 1.0 per cent. Estimated MTIC fraud fell to £0.3 billion in October from £0.5 billion in September.

Overall, the persistence of the current account deficit has led to the deterioration in the UK's international investment position (IIP) with the rest of the world. The net asset/liability was negative to the tune of £237.5 billion at the end of the third quarter compared with net external liabilities of £219 billion at the end of the previous quarter. UK assets abroad increased by £68.1 billion from the end of the second quarter to a level of £5,208.8 billion at the end of the third quarter. The rise in the level of both UK assets and UK liabilities in the third quarter reflects both net investment and price movements, which outweigh the effects of exchange rate movements.

External surveys on exports show a relatively strong picture. The BCC reported that the export sales net balance rose by 18 points to plus 38 in 2006 quarter three. The CBI's quarterly Industrial Trends Survey reports that the balance for export sales fell to minus 3 from plus 11 eleven in the previous quarter. In its latest monthly survey, the CBI report that export balances deteriorated to minus 5 in December from plus 3 in November. Generally, the export balance has been negative for much of the year.

LABOUR MARKET

Employment level rose; unemployment level fell

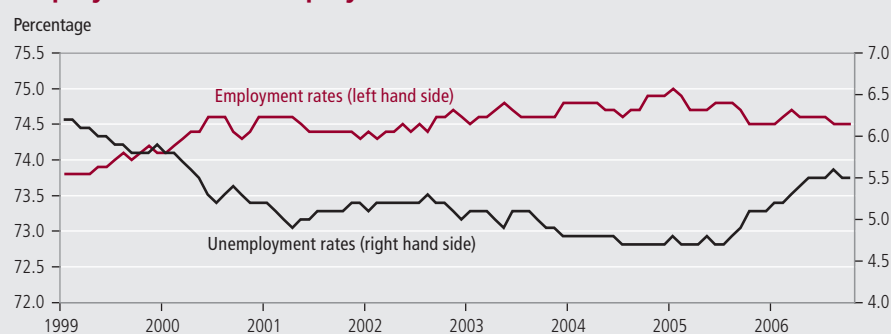
In recent years the strength of the UK economy has been clearly reflected in the labour market statistics. However, in the last year or so there has been a degree of weakening in the labour market picture. As the labour market operates on a time lag, this could be perhaps put down to relatively weaker output and demand conditions prevailing in 2005. The latest figures from the Labour Force Survey (LFS) pertain to the three-month period up to October 2006 and show a

mixed but a mostly positive picture. The number of people in employment rose. The number of unemployed people and the claimant count fell. Average earnings including and excluding bonuses was up. On the downside, the employment rate fell whilst the unemployment rate remained unchanged; vacancies fell.

The current picture of an increase in the number of people in employment and the fall in unemployment levels suggests strengthening demand conditions as reflected in buoyant GDP in 2006, is beginning to feed through to the relative pick up in the labour market. This may also imply a greater absorption capacity of the economy for workers. Looking at a detailed level, the increase in employment levels appears to be mainly generated by an increase in part-time and self-employment jobs offset by a fall in full-time employee jobs. This somewhat reverses the picture of the previous quarter where there was a concurrent increase in the employment and unemployment levels; explained partly by the fall in the inactivity rate.

The current working age employment rate is 74.5 per cent, in the three months to October 2006, down 0.1 percentage point from the three months to July 2006 and down 0.2 percentage points from a year earlier. The number of people in employment increased by 41,000 over the quarter and by 216,000 over the year, to leave the employment level standing at 29.00 million in the three months to October. The unemployment rate was 5.5 per cent, unchanged from the three months to July 2006 but up 0.6 percentage points from a year earlier (**Figure 14**). The number of unemployed fell by 7,000 from the three months to July but was up 197,000 from a year earlier to leave the unemployment level standing at 1.70 million.

Figure 14
Employment and unemployment



According to the LFS, in the period August to October 2006, the number of people in employment increased by 41,000. In the same reference period, the number of people in employee jobs fell by 37,000 after rising by just 2,000 in the previous quarter. This was offset by a strong rise in the number of people in self-employment of 72,000, continuing the trend from the previous quarter. From another perspective, the number of people in full-time employee jobs fell by 93,000, whilst those in part-time jobs increased by 134,000, again, continuing the trend from the previous quarter.

Claimant count falls

The claimant count measures the number of people receiving the job-seekers allowance. The latest figures for November show the claimant count level at 950,800, down 5,700 on the month but up 49,500 on a year earlier. The claimant count rate in November 2006 was 3.0 per cent, unchanged from the previous month but up 0.2 percentage points from a year earlier.

Vacancies fall

There were 595,800 job vacancies on average in the three months to November 2006, down 12,200 from the previous three months but up 1,700 from the same period a year earlier.

Inactivity rate up

The working age inactivity rate was 21.0 per cent in the three months to October 2006, up 0.1 percentage point from the three months to July 2006 but down 0.3 percentage points from a year earlier. The number of economically inactive people of working age was up 38,000 over the quarter to leave the level standing at 7.84 million in the three months to October 2006. Over the year the number fell by 74,000. The largest increase in the inactivity rate occurred amongst those categorised as 'looking after family/home' which increased by 24,000 followed by the 'retired' category at 15,000 and the 'student' category at 7,000. This was offset by a fall in the inactivity rate of those categorised as 'the long-term sick'. On an annual basis, inactivity fell by 74,000, with the largest fall being amongst the 'long-term sick' at 66,000, followed by the 'other' category at 48,000 and students at 33,000.

Average earnings rise

Average earnings growth, including and excluding bonuses, rose in the latest reference period. Average earnings growth, excluding bonuses, was 3.8 per cent in October, up 0.3 percentage points. Average earnings growth, including bonuses, grew by a rate of 4.1 per cent, up 0.2 percentage points from the previous month.

In terms of the public and private sector split, the gap in earnings growth excluding bonuses shows signs of widening in the recent month. The widening was due to an increase in private sector wages which grew by 3.9 per cent in October, up from 3.6 per cent in the previous month. Public sector wages on the other hand fell to 3.1 per cent, down from 3.2 per cent in October.

Overall, the numbers point to a slightly strengthening labour market, although it is still loose compared to previous years, with employment increasing due mainly to higher activity rates, which is consistent with robust GDP growth. The higher wage growth may partly reflect wage settlements being concluded on the basis of a higher Retail Price Index.

PRICES

Producer output prices rise; producer input prices fall in November

The divergence between input and output price inflation narrowed in 2006 quarter three and this appears to continue in quarter four, despite a pick up in output prices. Input prices grew by 2.8 per cent in the year to November, down from 4.6 per cent in the year to October and the weakest rate since March 2004. The core input price index, excluding food, beverages, tobacco and petroleum rose by 4.1 per cent in the year to November, down from 6.2 per cent in the year to October.

The main driver of growth remains energy but the slower rate of growth in November mainly reflected a fall in crude oil prices, which fell by 1.9 per cent on the month and in the year to November fell by 5.8 per cent, mainly reflecting reduced Middle-East tensions and higher oil inventories. This was helped by the appreciation of the pound relative to the dollar and euro, which has the effect of making exports dearer but imports cheaper. This was mainly offset by a rise in gas prices of 14.7 per cent in November, but on the year fell by 17.7 per cent. The fall in input prices seems to have a mixed impact on producer output prices.

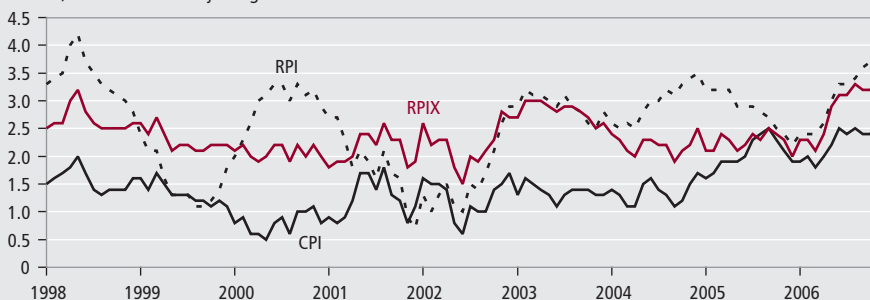
The output price index rose by 1.8 per cent in the year to November, up from 1.6 per cent in the year to October, somewhat reversing the downward trend from the middle of the year. This may suggest an attempt by firms to re-build their profit margins. The underlying picture however indicates reduced inflationary pressures compared to the previous month. On the core measure which excludes food, beverages, tobacco and petroleum, producer prices rose by 2.4 per cent, down from growth of 2.6 per cent in the year to October. This may suggest that firms are finding it difficult or are reluctant to pass on lower input prices to customers.

CPI rises in November

Growth in the consumer price index (CPI) – the Government's target measure of inflation – was 2.7 per cent in November; the highest for ten years and continuing to exceed the Government's 2.0 per cent inflation target. The Retail Price Index (RPI) a broader measure of inflation, rose by 3.9 per cent in the year to November, its highest rate since June 1998, and up from 3.7 per cent in October. The Retail Price Index, excluding mortgage interest payments (RPIX) was

Figure 15
Inflation

Growth, month on month a year ago



3.4 per cent in November, up from 3.2 per cent in October (**Figure 15**).

The largest upward effect on the CPI annual rate came from transport costs with prices of fuels and lubricants falling by less than a year ago. There was an additional large upward effect from air travel, where fares for long haul, and to lesser extent, European routes fell by less than a year ago. A further small upward effect came from new cars, where prices increased this year but fell a year ago. There was a large upward contribution from recreation and culture, including photographic equipment, where prices of digital cameras fell by less than a year ago. A further large upward contribution came from housing, water, electricity, gas and other fuels including increases in gas bills and in actual rents for housing. There were small upward contributions from food due to vegetable prices overall rising by more than a year ago. This was offset by small downward effects from financial services, particularly in the cost of exchanging foreign currency, where it fell this year compared to little change a year ago.

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	2004	2005	2006 Q1	2006 Q2	2006 Q3	2006 Sep	2006 Oct	2006 Nov
GDP growth – chained volume measures (CVM)									
Gross domestic product at market prices	ABMI	3.3	1.9	0.7	0.7	0.7	..	..	..
Output growth – chained volume measures (CVM)									
Gross value added (GVA) at basic prices	ABML	5.9	4.2	0.3	1.6	1.9	..	..	..
Industrial production	CKYW	0.8	-1.9	0.6	0.1	0.2	0.1	-0.8	..
Manufacturing	CKYY	2.0	-1.1	0.8	0.9	0.7	0.0	-0.5	..
Construction	GDQB	4.0	1.5	1.0	0.5	0.7	..	..	..
Services	GDQS	3.9	2.9	0.8	1.0	0.7	..	..	..
Oil and gas extraction	CKZO	-8.4	-9.9	0.0	-4.5	-3.3	2.1	-2.6	..
Electricity, gas and water supply	CKYZ	1.1	-0.3	-0.1	-2.7	-0.2	-0.3	-3.1	..
Business services and finance	GDQN	5.1	4.3	1.1	1.5	1.5	..	..	..
Household demand									
Retail sales volume growth	EAPS	6.0	2.0	-0.5	1.9	0.8	-0.5	0.9	0.3
Household final consumption expenditure growth (CVM)	ABJR	3.5	1.3	0.3	0.9	0.4	..	..	..
GB new registrations of cars (thousands) ¹	BCGT	2,599	2,443	662	570	662	415	153	..
Labour market^{2,3}									
Employment: 16 and over (thousands)	MGRZ	28,409	28,676	28,887	28,930	28,986	29,005	..	..
Employment rate: working age (%)	MGSU	74.8	74.7	74.6	74.6	74.5	74.5	..	..
Workforce jobs (thousands)	DYDC	30,572	30,810	30,993	31,058	..	..	..	..
Total actual weekly hours of work: all workers (millions)	YBUS	909.0	918.6	924.3	926.3	925.4	926.2	..	..
Unemployment: 16 and over (thousands)	MGSC	1,426	1,425	1,599	1,683	1,711	1,695	..	..
Unemployment rate: 16 and over (%)	MG SX	4.8	4.7	5.2	5.5	5.6	5.5	..	..
Claimant count (thousands)	BCJD	854	862	923	950	955	960	957	951
Economically active: 16 and over (thousands)	MG SF	29,835	30,101	30,486	30,613	30,696	30,700	..	..
Economic activity rate: working age (%)	MG SO	78.6	78.5	78.9	79.0	79.0	79.0	..	..
Economically inactive: working age (thousands)	YBSN	7,848	7,934	7,860	7,822	7,835	7,835	..	..
Economic inactivity rate: working age (%)	YBTL	21.4	21.5	21.1	21.0	21.0	21.0	..	..
Vacancies (thousands)	AP2Y	632.6	619.6	596.2	598.4	602.8	602.8	599.5	595.8
Redundancies (thousands)	BEAO	144	126	143	137	141	140	..	..
Productivity and earnings annual growth									
GB average earnings (including bonuses) ³	LNNC	..	..	4.1	4.3	3.9	3.9	4.1	..
GB average earnings (excluding bonuses) ³	JQDY	..	..	3.9	3.9	3.5	3.5	3.8	..
Whole economy productivity (output per worker)	A4YN	..	..	1.7	1.9	2.3	..	..	..
Manufacturing productivity (output per job)	LOUV	..	..	..	..	..	3.7	4.2	..
Unit wage costs: whole economy	LOJE	..	..	2.0	1.9	1.9	..	..	..
Unit wage costs: manufacturing	LOJF	..	..	..	..	..	1.4	1.1	..
Business demand									
Business investment growth (CVM)	NPEL	2.3	17.2	2.1	2.0	3.1	..	..	..
Government demand									
Government final consumption expenditure growth	NMRY	3.2	3.1	0.2	0.6	0.8	..	..	..
Prices (12-monthly percentage change – except oil prices)									
Consumer prices index ¹	D7G7	1.3	2.1	1.9	2.3	2.4	2.4	2.4	2.7
Retail prices index ¹	CZBH	3.0	2.8	2.4	3.0	3.5	3.6	3.7	3.9
Retail prices index (excluding mortgage interest payments)	CDKQ	2.2	2.3	2.2	2.8	3.2	3.2	3.2	3.4
Producer output prices (excluding FBTP) ⁴	EUAA	1.9	2.1	1.8	2.6	2.3	2.1	2.5	2.5
Producer input prices	EUAB	4.0	11.7	14.5	13.3	8.0	5.4	4.7	2.8
Oil price: sterling (£ per barrel)	ETXR	20.677	30.358	35.762	38.569	37.748	33.867	31.854	..
Oil price: dollars (\$ per barrel)	ETXQ	37.862	55.046	62.666	70.454	70.675	63.803	59.785	..

Seasonally adjusted unless otherwise stated									
	Source CDID	2004	2005	2006 Q1	2006 Q2	2006 Q3	2006 Sep	2006 Oct	2006 Nov
Financial markets									
Sterling ERI (January 2005=100)	BK67	101.6	100.5	98.9	99.4	102.2	102.9	103.0	..
Average exchange rate /US\$	AUSS	1.832	1.820	1.753	1.827	1.875	1.885	1.876	..
Average exchange rate /Euro	THAP	1.474	1.463	1.457	1.454	1.471	1.481	1.487	..
3-month inter-bank rate	HSAJ	4.81	4.57	4.54	4.71	5.02	5.02	5.14	..
Selected retail banks: base rate	ZCMG						4.75	4.75	5.00
3-month interest rate on US Treasury bills	LUST	2.18	3.92	4.52	4.88	4.77	4.77	4.97	..
Trade and the balance of payments									
UK balance on trade in goods (£m)	BOKI	-60,893	-68,783	-21,475	-20,929	-20,499	-6,726	-6,326	..
Exports of services (£m)	IKBB	107,817	114,255	31,357	30,768	31,019	10,071	10,045	..
Non-EU balance on trade in goods (£m)	LGDT	-30,166	-31,953	-10,336	-10,450	-12,330	-3,837	-3,948	..
Non-EU exports of goods (excl oil & erratics) ⁵	SHDJ	104.6	119.9	127.8	121.1	111.8	115.3	110.7	..
Non-EU imports of goods (excl oil & erratics) ⁵	SHED	111.5	116.8	123.7	124.4	122.8	124.3	124.5	..
Non-EU import and price index (excl oil) ⁵	LKWQ	97.7	101.2	104.8	104.1	103.2	102.9	103.6	..
Non-EU export and price index (excl oil) ⁵	LKVX	98.9	100.6	102.8	102.6	101.6	101.3	101.5	..
Monetary conditions/government finances									
M0 (year on year percentage growth)	VQMX	6.0	5.1	6.5	..	..	..	..	..
M4 (year on year percentage growth)	VQJW	8.6	11.4	12.4	13.6	14.4	14.5	..	..
Public sector net borrowing (£m)	-ANNX	37,726	39,134	-1,914	16,319	6,031	5,878	-294	9,858
Net lending to consumers (£m)	RLMH	25,428	19,608	3,397	3,118	2,673	959	1,106	..

External indicators – non-ONS statistics

		2006 May	2006 Jun	2006 Jul	2006 Aug	2006 Sep	2006 Oct	2006 Nov	2006 Dec
Activity and expectations									
CBI output expectations balance	ETCU	10	14	14	11	14	9	5	11
CBI optimism balance	ETBV	..	..	-6	..	..	-10	..	..
CBI price expectations balance	ETDQ	0	10	10	13	11	11	23	7

Notes

1 Not seasonally adjusted.

2 Annual data are for April except for workforce jobs (June) and claimant count (average of the twelve months).

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.

Independent forecasts

December 2006

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 2006 and 2007 and are extracted from HM Treasury's *Forecasts for the UK Economy*.

2006

	Average	Lowest	Highest
GDP growth (per cent)	2.6	2.4	2.7
Inflation rate (Q4, per cent)			
CPI	2.6	2.2	2.8
RPI	3.7	2.7	4.1
Claimant unemployment (Q4, million)	0.97	0.93	1.10
Current account (£ billion)	-31.4	-36.3	-25.0
Public sector net borrowing (2006-07, £ billion)	38.6	36.0	42.3

2007

	Average	Lowest	Highest
GDP growth (per cent)	2.4	0.8	2.9
Inflation rate (Q4, per cent)			
CPI	2.1	1.3	3.1
RPI	3.0	1.8	3.9
Claimant unemployment (Q4, million)	1.00	0.85	1.4
Current account (£ billion)	-33.4	-48.1	-10.5
Public sector net borrowing (2007-08, £ billion)	37.2	29.0	44.4

Notes

Forecasts for the UK economy gives more detailed forecasts, covering 27 variables, and is published monthly by HM Treasury. It is available on their website at www.hm-treasury.gov.uk/economic_data_and_tools/data_index.cfm

Selected world forecasts

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

2006

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	3.3	2.8	2.6	3.2
Consumer price (percentage change from previous year)	2.9	-1.0	1.8	2.2
Unemployment rate (per cent of the labour force)	4.6	4.2	7.9	6.0
Current account (as a percentage of GDP)	-6.6	3.8	-0.3	-2.0
Fiscal balance (as a percentage of GDP)	-2.4	-4.6	-1.5	-2.1

2007

	US	Japan	Euro area	Total OECD
Real GDP growth (per cent)	2.4	2.0	2.2	2.5
Consumer price (percentage change from previous year)	2.6	0.2	2.0	2.2
Unemployment rate (per cent of the labour force)	4.8	3.9	7.4	5.8
Current account (as a percentage of GDP)	-6.5	4.5	-0.1	-1.9
Fiscal balance (as a percentage of GDP)	-2.8	-4.2	-1.1	-2.1

Notes

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

FEATURE

Mavis Anaghoso, Allan Flowers,
Geoff Tily and Gavin Wallis
Office for National Statistics

Official statistical publications and economic statistics

SUMMARY

Since its first publication in 1953, *Economic Trends* and its companion labour market publications have recorded changes to the UK economy and labour market. In this new publication, *Economic & Labour Market Review*, the Office for National Statistics brings these two fields of economic statistics into a single publication. As patterns of economic activity and work change, the interdependence of these two strands is increasingly apparent to those who use and produce statistics alike.

This article serves as both an introduction to the new journal and as a retrospective review of compendia publications of official statistics and analysis. It offers a historical overview of the developing presentation of economic and labour market statistics. It also presents a range of official UK economic statistics that characterise the period since the Second World War, and also extend further back for aspects of the labour market.

This article serves as both an introduction to this new ONS publication *Economic & Labour Market Review* (ELMR) and as a historical review of official statistical publications and data. There is an overview of how ELMR has been developed in the context of the general history of compendia publications of official statistics and the changing needs of statistics users.

The article also provides a range of long-run economic and labour market data. These data can be used to build up a picture of the development of the UK economy since as early as 1950 on the economic side, and further back on the labour market side. The analysis presented here looks at long-run trends in the UK economy and draws on data that highlight interesting features of the economy that have changed or developed over the last 50 years in particular.

Among the significant changes charted are the following:

- over the post-war period, GDP in volume terms has grown on average by 2.5 per cent a year
- before the 1970s, investment grew particularly strongly, the 1980s was the decade with strongest growth in household consumption, and the period 2000 to 2005 the strongest growth in government consumption
- workers' share of GDP gradually increased over the 1950s, 1960s and 1970s; since then it has fallen back each decade and into the 21st century
- between 1971 and the present, the male employment rate has fallen by

13 percentage points, while the female employment rate has risen by 14 percentage points

- in 2005, the number of days lost to strikes were the lowest on record
- the 1990s and 2000s have seen the lowest inflation of the post-war period, though the 1950s and 1960s also saw low inflation

Official statistics and publications in the UK

UK statistical and registration services are currently provided by the Office for National Statistics (ONS). Charged with producing a wide range of key economic and social statistics, ONS evolved from the 1996 merger of the Central Statistical Office (CSO) and the Office of Population Censuses and Surveys (OPCS). The CSO itself was established on 27 January 1941 by Sir Winston Churchill, endorsing the importance of national accounts information that had been developing in the academic arena over the previous thirty years, and particularly over the 1930s.

However, economic statistics more generally had been published by government for a hundred years or more, with the annual *Statistical Abstract of the United Kingdom* first being produced in 1854. The history of statistical publications on the labour market goes back as far as 1893 with the publication of the *Labour Gazette* by the Board of Trade. In the post-war years, policymakers increasingly began to regard good economic statistics as necessary for government economic policy.

To disseminate the information beyond government, the CSO began to develop a publications portfolio. The *Monthly Digest of Statistics* was first published in January 1946 (and is still going aged 61); *Economic Trends* was first published in 1953. In 1948, the CSO also took over the publication of the previously named *Statistical Abstract of the United Kingdom*, renaming it as the *Annual Abstract*. The Labour Gazette saw a number of changes, and it finally became *Labour Market Trends* in 1991. Many other publications followed and these are detailed in Ward and Doggett (1991), who provide a detailed history of the first 50 years of the CSO. In particular, the first *National Income and Expenditure Blue Book* was published in 1952, beginning a series that continues today, now alongside its quarterly companion *United Kingdom Economic Accounts*.

Since 1946, the CSO, and more recently ONS, has not only continually developed its publications portfolio, but has also developed and improved the statistics being produced. This development has been driven by changing user demands as well as by the changing nature of the UK economy. For example, when the CSO was formed in 1941, the Standard Industrial Classification (SIC) did not exist, and classification headings included some of the following:

- accumulatory battery maker
- clog maker
- flower gatherer
- driver, steam wagon, traction engine
- pea picker

The first ever SIC was completed in 1947 and published in 1948 and, although this remains the basis for classifying business establishments and other statistical units by the type of economic activity in which they are engaged, it has been developed numerous times over the last 60 years to keep it relevant to the changing structure of the UK economy. The next revision of the UK SIC is scheduled for this year (2007). Ward and Doggett (1991) and Jenkinson and Brand (2000) detail various other improvements to economic statistics that have occurred over the 66-year history of official statistics.

Economic & Labour Market Review
Economic & Labour Market Review (ELMR) is a new monthly journal bringing together features from two of ONS's best-known existing journals, *Economic Trends* (ET) and *Labour Market Trends* (LMT). ELMR has been developed through a joint project across several areas within

ONS, the original concept coming from a publications portfolio review in 2004. An extensive, specially commissioned, research study was subsequently conducted with users and key stakeholders of ET and LMT to ensure that the development of the new journal was user focused. The range and style of content of ELMR is based on views, opinions and suggestions received during this research.

The biggest change between the new journal and its predecessors is that most economic and labour market data will now be made available online via the ELMR 'Directory of Online Tables' rather than as printed tables at the back of ET and LMT. This change has been driven by user demand. Increasing use of computers and the internet over the last decade has meant that demand for electronic data has increased, with a corresponding decline in the demand for paper-based statistical tables. A further advantage of making this data available electronically is that the space limitations of paper-based statistical tables do not exist, allowing for the presentation of longer time series of data.

Looking forward, ELMR should provide a resource of up-to-date and relevant research, methodological descriptions, commentary, analysis and data for users of both economic and labour market statistics, and will provide access to the wealth of official UK economic and labour market data available on the National Statistics website. It will draw on the full range of economic and labour market analysis undertaken by ONS and include a mix of feature articles, a regular economic review, key indicators, independent forecasts, and news on statistical developments.

Economic Trends

The first official issue of *Economic Trends* (ET) was published by the CSO in November 1953. However, as noted in Herbert (2003), the CSO first issued a publication bearing that name in November 1950. The copy in the archives is marked 'Secret' and appears to have had only a limited circulation around Whitehall. Another issue was circulated in September 1951 and after this it was produced monthly. It is unclear how widely it was circulated and whether it was used outside Whitehall. In 1953, the decision was made to offer it up for more general use by publishing it through HMSO, with the first official issue appearing in November of that year.

The first issue of ET was priced at just two shillings (10p). The December 2006 issue,

number 637, was priced at £42.50. Initially, ET was seen as a companion publication to other CSO publications. Towards the back of the first issue of ET, the *Monthly Digest of Statistics* was described as its companion publication, with the monthly digest containing longer and more detailed statistical tables and ET containing charts and tables of key economic statistics. Since 1953, ET has grown as a publication. It began with fewer than 30 pages consisting solely of tables and charts. More recently it has been up to 180 pages long, containing a mix of regular articles, feature articles, tables, charts and methodology notes.

Feature articles appearing in ET have covered a wide range of topics since they began appearing back in 1957, with the first ever article entitled 'A Supplement on the Quarterly Estimate of National Expenditure'. Article titles have included the following:

- estimates of the paint and varnish industry (June 1957)
- government economic research (August 1965)
- structure of company financing (September 1975)
- regional accounts 1986 (January 1988)
- employment in the public and private sectors (February 1996)
- health expenditure by charities (December 2004)

ET has increasingly been used to set out the ever more demanding methodological requirements of statistical measurement in a changing economy. A full list of articles published in ET between 1957 and March 2003, along with further details of developments to ET during its first 50 years, can be found in Herbert (2003); a further list of articles published between 2002 and 2006 was featured in the last ever issue in December 2006.

Despite changes to ET as a publication over the years, it has always been a forum for showing the current state of the economy as illustrated by official statistics and for explaining changes, including methodological changes, in these statistics. ELMR will continue this tradition into the future.

Labour Market Trends

Although *Labour Market Trends* (LMT) has only been a title in its own right since 1995, its history can be traced back well over a hundred years. The December 2006 edition of LMT was, at volume 114, number 12, the last in a long unbroken line.

The beginning of that series, volume 1, number 1, was published in May 1893

under the title 'The *Labour Gazette*, the journal of the labour department of the Board of Trade'. This very first edition, which cost the princely sum of one old penny (less than ½p), opened with a description of the objectives of the *Labour Gazette*. It described itself as a 'journal for the use of workmen, and all others interested in obtaining prompt and accurate information on matters specifically affecting labour', and was designed to complement the *Board of Trade Journal*, which dealt with issues of trade and commerce.

The *Labour Gazette* continued until it was superseded by the *Ministry of Labour Gazette* in 1920. That in turn was replaced by the *Employment and Productivity Gazette* in 1968 and the *Employment Gazette* in 1970, before a further reincarnation as *Labour Market Trends* in 1995.

The contents of that first edition in 1893 dealt with many similar themes to those in current journals, but naturally reflected the conditions at that time. However, some topics have faded from prominence while others have developed a far higher profile, generating a range of outputs devoted to their subjects.

Some of the items appear as recognisable now as they were then. These include:

- state of employment in April
- changes in wages and hours
- trade disputes in the month
- immigration and emigration

The table on wages and hours reflects changes in 'rates' of pay and hours rather than the averages we more commonly use today. Interestingly, it lists both *increases and decreases* in pay rates. For example:

- joiners in Greenock enjoyed a farthing an hour increase (£0.001)
- seamen and firemen in Belfast received an extra five shillings (25p) per month
- captains, officers and engineers in Liverpool suffered a 15 per cent pay cut
- tramway men in Nottingham had their daily hours cut from 15.5 to 11.5

A selection of the more unusual topics covered in that first edition included:

- pauperism
- wages in the Jewish tailoring workshops
- inquiries into unhealthy and dangerous employments

Alongside this continuous series of publications which has culminated in this

edition of ELMR, there have been a number of other journals looking at labour market data. Perhaps the most significant of these was *British Labour Statistics, Historical Abstract*, 1886–1968. This was produced by the then Ministry of Labour and published in 1970. Subsequent to that were the *British Labour Statistics Year Books* which were published from 1970 to 1976. All contained an extensive range of labour market data and featured long time series.

Sixty-six years of economic and labour market statistics

As discussed, the UK has been producing official national accounts statistics since 1941. The sections below present some of the main historical series to highlight developments in the UK economy over the past 60 or so years.

Gross Domestic Product

Gross Domestic Product (GDP) is a measure of the total economic activity in a region in a given period of time. It is gross in that depreciation of fixed assets is not offset from production. There are three theoretical ways of deriving GDP.

- The output/production approach aggregates the activity of industries, taking the value (at basic prices) of output less the value of the inputs used up in the production process. Using this approach, the economy is often classified into four industrial groupings: agriculture, production, construction and service (including government) industries
- The expenditure/demand approach measures the total spending on goods and services for final use. The main categories of spending are households'

final consumption expenditure (HHFCE), which also includes the consumption of non-profit institutions serving households (C, below), general government final consumption expenditure (GGFCE – G, below), investment or gross fixed capital formation (GFCF), which also includes changes in inventories (I, below), and exports (X) less imports (M). Economists tend to write the expenditure identity as follows:

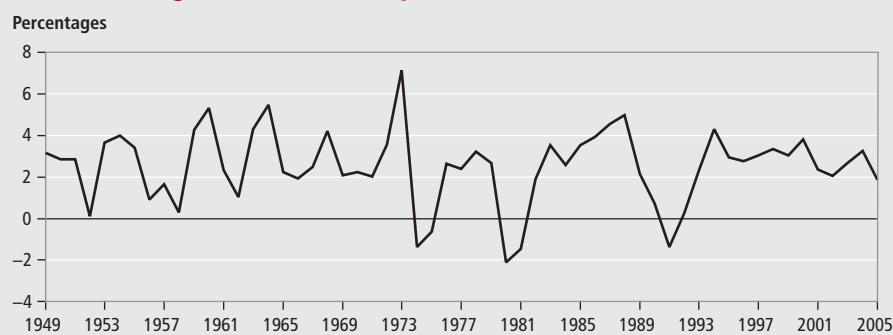
$$\text{GDP(E)} = C + I + G + X - M$$

- The income approach measures the total income generated by the production processes. GDP(I) equals compensation of employees (CoE), gross operating surplus (GOS), mixed income, taxes on production and imports, less subsidies

ONS produces quarterly and annual estimates of UK GDP, in both current prices and chained-volume terms (see Robjohns, 2006). Annual estimates are available from 1948 while quarterly estimates are available from 1955 quarter one. **Figure 1** shows annual GDP growth in volume terms.

The graph shows that, since 1948, there have been three discernable periods of recession: 1974–75, 1980–81 and 1991. The first recession since the war (1974–75) followed very vigorous growth in the opening years of the 1970s, and coincided with a large jump in oil prices, a sharp rise in inflation, and acceleration in wage growth. The 1.4 per cent fall of GDP in 1974 broke the run of uninterrupted growth since the official data began. The early 1980s' recession saw the largest post-war fall in GDP of 2.1 per cent in 1980. In the most recent recession of the early 1990s, GDP fell by 1.4 per cent in 1991.

Figure 1
Annual GDP growth at market prices (chained volume measure)



Source: Office for National Statistics

Table 1 shows GDP growth rates over the period 1950 to 2005; GDP has risen by an annual average of 2.5 per cent a year.¹ It is striking that, while growth has been volatile, average annual growth for each decade does not diverge greatly from the average.

Table 1
GDP(O) average annual growth rates by period

Period	Average annual GDP growth
1950–59	2.6
1960–69	2.8
1970–79	1.9
1980–89	2.6
1990–99	2.4
2000–05	2.4
1950–2005	2.5

Source: Office for National Statistics

With average annual growth of 2.8 per cent, the 1960s saw the strongest growth of the post-war decades. The 1970s saw the weakest average annual growth at 1.9 per cent; and growth in the latest 15 years has been slightly weaker than pre-1970.

Restructuring away from manufacturing to services

Table 2 shows the industry breakdown of gross value added in 2003. The service sector now accounts for around 74 per cent of value added compared with manufacturing accounting for just under 15 per cent.

The importance of services follows the well-known shift away from manufacturing in most developed countries. **Figure 2** shows indices of output of manufacturing and service industries since 1948. In the first decades following the war, the manufacturing sector expanded faster than the services sector; the shift is clearly identified as beginning, quite abruptly, in the 1970s.

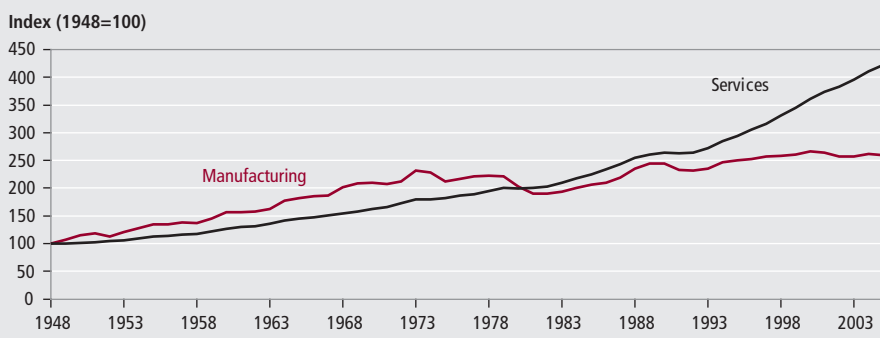
Table 2
Industry breakdown of gross value added, 2003

Industry	Output as percentage of total GVA
Agriculture, forestry and fishing	1.0
Mining and quarrying, including oil and gas extraction	2.2
Manufacturing	14.7
Electricity	1.7
Construction	6.1
Services	74.4

Source: Office for National Statistics

Figure 2

Comparison of manufacturing and services output, volume index



Source: Office for National Statistics

Demand and expenditure

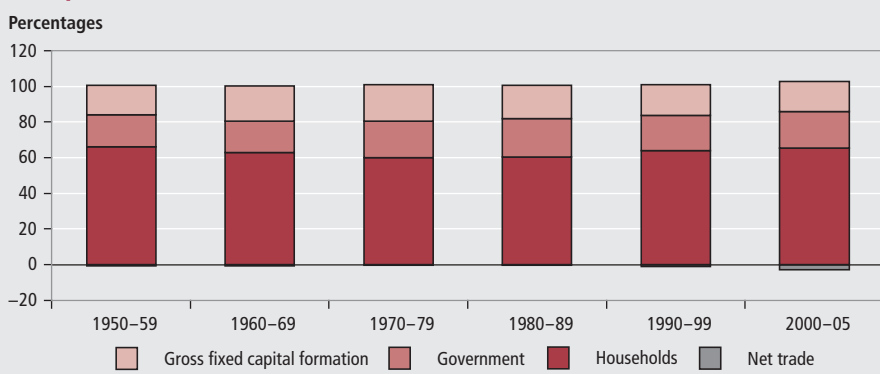
The composition of UK demand has not changed greatly since the 1950s, as shown in **Figure 3**. Generally, over 60 per cent of total expenditure in the economy is made by the household sector. This is followed by gross fixed capital formation and then government expenditure. Although trade plays a significant role in the UK economy, net trade (exports minus imports) is usually very small.

Although a large share of total expenditure is accounted for by the household sector, the fastest growth has been seen in other components, as **Table 3** shows.

In the first two decades after the Second World War, the fastest growth was in investment (GFCF); in the 1950s, investment expenditure grew by an average annual rate of 5.3 per cent – the fastest in any decade since the war.

Figure 3

Composition of UK demand



Source: Office for National Statistics

Table 3
Average annual growth rates of GDP expenditure components, volume

Period	HHFCE	GFCF	GGFCE	Exports	Imports
1950–59	2.4	5.3	1.4	2.7	4.2
1960–69	2.3	5.2	2.2	5.0	4.2
1970–79	2.3	0.5	2.4	4.5	3.7
1980–89	3.4	4.3	0.9	3.5	5.6
1990–99	2.6	2.8	1.3	6.0	6.2
2000–05	2.9	3.0	3.1	3.5	4.9
1950–2005	2.6	3.7	1.8	4.5	4.8

Source: Office for National Statistics

In the 1970s, investment almost came to a standstill and saw its slowest post-war growth. Since then, growth has picked up, but has remained below the rates in the 1950s and 1960s (some argue that this is because expenditure on intangibles, such as research and development and training, should be counted as investment rather than as intermediate consumption as it is at present). The growth in GGFCE accelerated in each of the decades after the war, until it was pulled back in the 1980s and 1990s. So far, the first decade of the 21st century has seen the highest rates of GGFCE growth in the post-war period. Household demand grew at a similar pace in each of the 1950s, 1960s and 1970s. In the most recent 25 years, growth has been a little stronger, particularly during the 1980s. Export growth was strongest in the 1990s, followed by the 1960s. Imports grew fastest in the 1990s followed by the 1980s; the 1960s and the 1970s are the only two decades that have seen exports grow faster than imports.

Gross domestic product by category of income

Figure 4 shows the share of GDP by category of income, a comparison that has had historical importance as indicating the share of economic activity that goes to 'workers'.

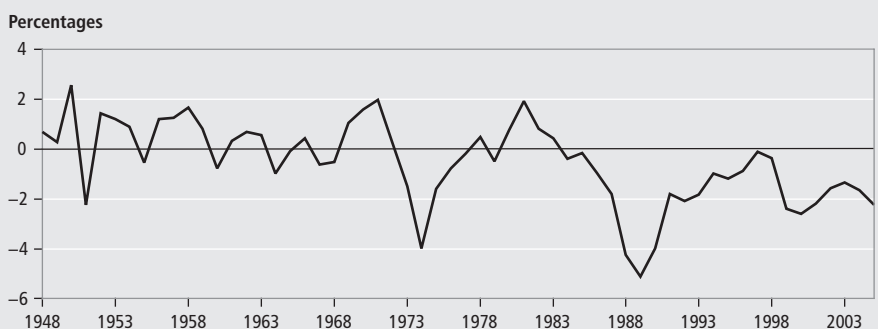
Over the post-war period, the share of CoE rose to a peak of 60.4 per cent in the 1970s, and has since fallen back gradually to 54.8 per cent in the period 2000–05. The share of GOS has remained relatively stable throughout the whole period.

Balance of payments

Before the 1970s, the balance of payments position was a pre-occupation of economic policy. These accounts measure the transactions between domestic residents and the rest of the world over a specific period.

Figure 5

Current account balance as a percentage of GDP



Source: Office for National Statistics

Table 4

Components of current account balance as a percentage of GDP

Period	Trade in goods and services	Income	Transfers	Current balance
1950–59	-0.23	0.79	0.03	0.60
1960–69	-0.54	0.85	-0.17	0.15
1970–79	-0.30	0.45	-0.47	-0.32
1980–89	-0.36	-0.13	-0.67	-1.16
1990–99	-1.05	0.20	-0.81	-1.66
2000–05	-2.83	1.80	-0.90	-1.93

Source: Office for National Statistics

The current account records transactions arising from trade in goods and services, from income accruing to residents of one country from another, and from transfers by residents of one country to residents of another. In the UK, the term 'balance of payments deficit/surplus' usually refers to the balance of the current account; for comparisons over time, figures are usually presented as a share of GDP (Figure 5).

Table 4 shows that while the 1950s and 1960s saw the current account balance in surplus, the 1970s heralded current account deficits. Since 1984, the UK economy has seen 22 consecutive current account deficits. As a share of GDP, the

deficit peaked in 1989 and then gradually improved to 1998. In the most recent five years there has been a very substantial deterioration in the deficit on trade in goods and services, but this has been partly offset by a very large increase in the surplus on income.

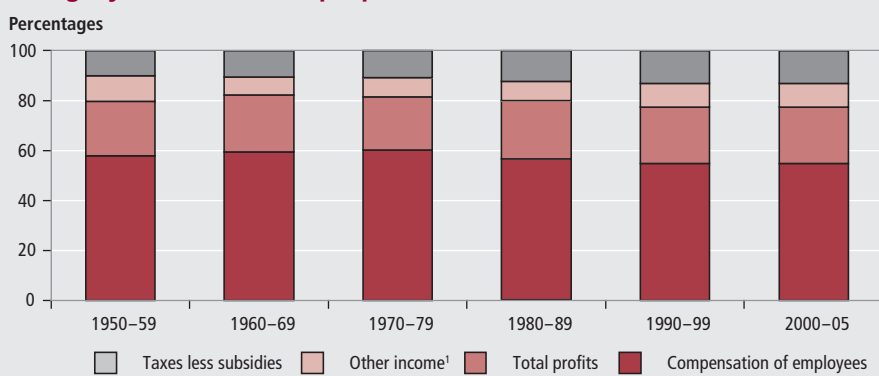
The sector accounts

Following the System of National Accounts 1993, the institutional sectors of an economy can be categorised as non-financial corporations (private and public), financial corporations, general government (central and local) and households and non-profit institutions serving households. The sector accounts show income, expenditure, borrowing/lending, financial transactions, and stocks of liabilities and assets (balance sheets) according to this categorisation. UK figures based on European System of Accounts 1995 (ESA95) definitions generally extend back to 1987 (figures for some sectors extend back further, and figures on pre-ESA95 definitions extend back further still).

Figure 6 shows the net lending/borrowing of households and private non-financial corporations as a percentage of GDP. Since the turn of the century there has been a shift in the traditional role of households lending to companies, as portrayed by economic theory. Instead, the household sector has become a net borrower, while private non-financial

Figure 4

Category of income as a proportion of GDP

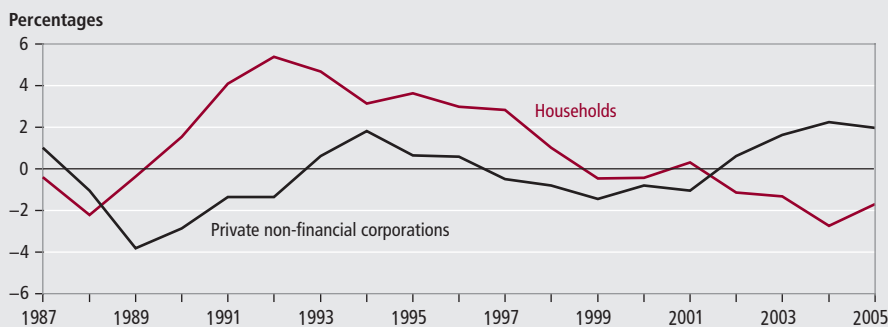


Source: Office for National Statistics

Note:

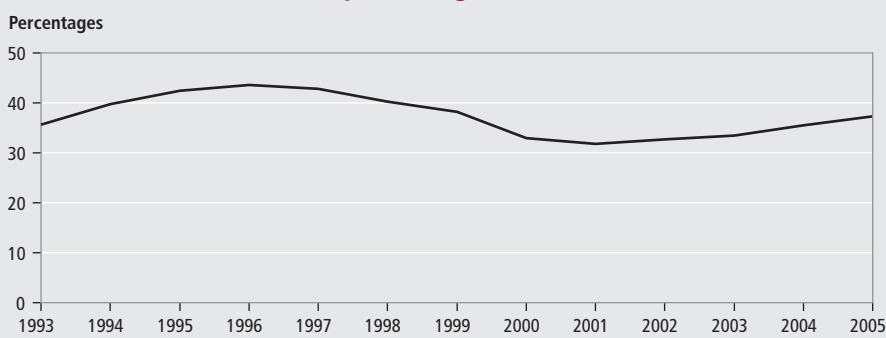
1 Includes mixed income and the operating surplus of the non-corporate sector, less the adjustment for financial intermediation services indirectly measured (FISIM).

Figure 6
Net lending/borrowing as a percentage of GDP



Source: Office for National Statistics

Figure 7
Public sector net debt as a percentage of GDP



Source: Office for National Statistics

corporations have become net lenders. However, balance sheet statistics show both sectors' debt levels high relative to historical experience. Apart from brief spells in the late 1980s and late 1990s, the government sector has tended to be a net borrower.

Aggregate government debt as a share of GDP is regarded as an indicator of the overall financial position of the government, with the 'sustainable investment rule' that specifies: "Other things being equal, net debt will be maintained below 40 per cent of GDP over the economic cycle" (HM Treasury, 2006). **Figure 7** shows that public sector net debt as a percentage of GDP

fell over the second half of the 1990s, but picked up again from 2002. In 2005, public sector net debt as a share of GDP was 37.3 per cent.

Labour market statistics Employment

Today, the level of employment in the UK, whether measured by the number of jobs or by the number of people in employment, is the highest it has ever been. The total number of jobs in the economy currently stands at over 31 million, while the number of people in employment is around 29 million.

However, manufacturing jobs show a vastly different story. The number of jobs in manufacturing industries stands at around three million. This is the lowest level of any published series since 1841, when the total was just under 2.5 million. At that time, data were based on the ten-yearly censuses, and estimates for 1851 showed manufacturing employee jobs had increased substantially to stand at 3.6 million. The general upward trend continued until 1957 when the series peaked at almost ten million. It has been trending downwards ever since.

The proportion of people in employment, the employment rate, has only been measured since 1971. The current rate of just under 75 per cent is relatively high by historical standards, but below the peak of 75.9 per cent measured in 1974. The lowest rate recorded was in 1983 when it dipped to 67.8 per cent.

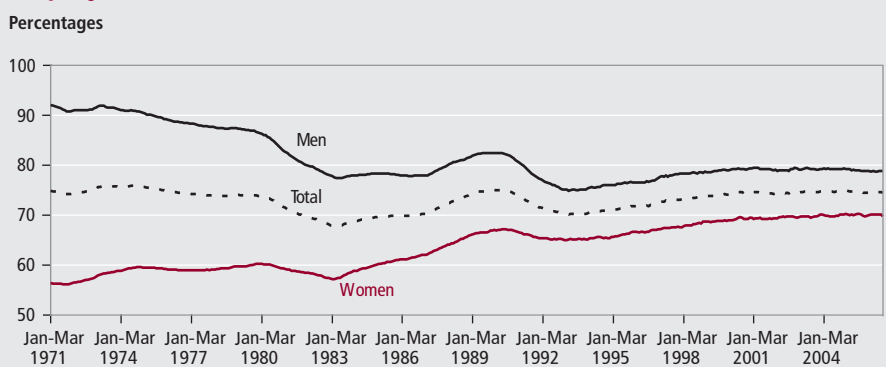
However, these figures mask very different patterns for men and women. In 1971, at the start of the series, the male employment rate was 92.1 per cent compared with the latest figure of around 79 per cent (**Figure 8**). The male employment rate reached its lowest point of 74.9 per cent during 1993. The picture for women is markedly different. In 1971, the employment rate for women stood at 56.2 per cent, compared with today's rate at or around 70 per cent, very close to last year's record high of 70.3 per cent.

Unemployment and the claimant count

Unemployment is measured by the Labour Force Survey using definitions agreed by the International Labour Organisation. A consistent series is available back to 1971. At that time unemployment stood at just over one million compared with today's 1.7 million. It has varied considerably between then and now, reaching its peak of 3.28 million in 1984 compared with a low point of 888,000 in 1973.

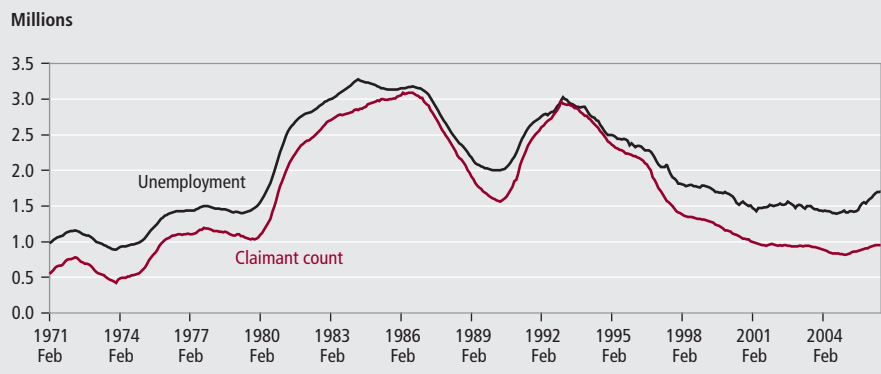
The claimant count, which is a count of the number of people claiming Jobseeker's Allowance benefits, is a useful indicator of unemployment rather than a statistical measure. However, the measure does have a much longer history. An article in the January 1996 edition of LMT showed a time series starting in 1881, although it did acknowledge there were discontinuities within the series (Denman and McDonald, 1996). The highest rate shown in that table was 23.0 per cent in 1932, considerably higher than the more recent peaks of just over 10 per cent recorded in 1986.

Figure 8
Employment rate



Source: Office for National Statistics

Figure 9
Unemployment and claimant count levels



Source: Office for National Statistics

The low points tend to occur during and immediately following times of major conflict, with rates of 0.5 per cent in the early 1940s and 0.4 per cent during the First World War. There has not been a rate of less than 1.0 per cent since the Second World War, and throughout the whole of the 1950s and 1960s, the rate of 3.0 per cent was only breached three times.

In the period since 1971, for which directly comparable data are available, the claimant count has ranged from 422,600 in December 1973 to 3,090,000 in July 1986.

A comparison between the unemployment data and the claimant count shows that they move in a similar way (Figure 9). Generally, the unemployment figures are higher, as not everyone who is unemployed is qualified to receive benefits and some of the unemployed choose not to do so.

Earnings

In October 2006, ONS released data from the April 2006 Annual Survey of Hours and Earnings (ASHE), which showed the average weekly earnings of men were £545.50 and they worked on average 38.1 hours per week. The corresponding figures for women were £334.60 and 29.6 hours.

Direct comparisons with earlier periods are limited because of the changes made to the surveys. However, some indicative comparisons can be drawn. ASHE replaced the New Earnings Survey which had its origins back in 1970. At that time the average gross weekly earnings of men were £30.00 for an average week of 43.7 hours. Women received £16.30 for 37.6 hours.

Before then, surveys were predominately focused on manual workers. One long-running enquiry into the earnings and hours of manual workers showed that men's earnings increased from £3.45 for a 47.7 hour week in October 1938 to £23.00 for a 46.4 hour week in October 1968. The

equivalent figures for women were £1.63 for a 43.5 hour week in 1938 and £11.30 for a 38.3 hour week in 1968.

Earlier still, the changes appeared to be less rapid. In 1886, the average weekly wage for men was £1.23 and for women it was a mere 63 pence a week.

Labour disputes

Details on the number of days lost through industrial disputes have been collected and published on a consistent basis back to 1891. The last full calendar year for which data are available is 2005. In that year there were the lowest number of days lost to

industrial disputes on record, just 157,000. The highest number recorded in a calendar year was in 1924, when over 162 million working days were lost.

More recently, there were peaks in 1979 which showed a post-war record high of 29.5 million, and in 1984 when over 27 million days were lost.

Consumer prices

The retail prices index (RPI) is probably the most widely recognised economic statistic produced by ONS. It is a monthly index that measures the change in the prices of goods and services bought for the purpose of consumption by an average household in the UK. Its many uses include indexation of household benefits, pensions and certain government bonds. The index is not revisable and data are available from 1947.

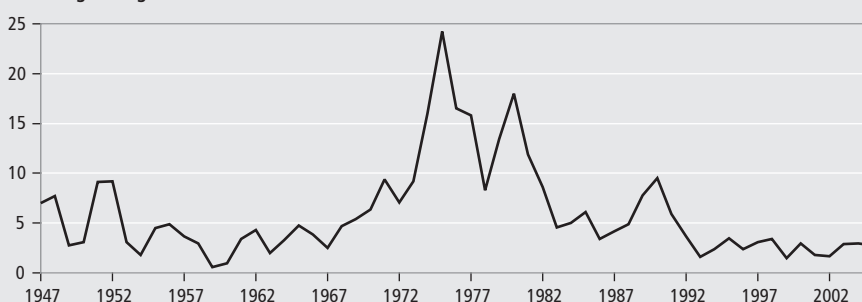
Figure 10 shows the RPI back to 1947.

Figure 11 illustrates the average annual growth rate of the RPI by decade and shows that the present decade has the lowest average inflation rate since the war.

The 1950s and 1960s were periods of relatively low inflation, with prices rising by less than 5 per cent in most years. The main exceptions were 1951 and 1952 when inflation was just over 9 per cent, reflecting rises in world prices of many raw materials partly associated with the Korean war.

Figure 10
All items retail prices index

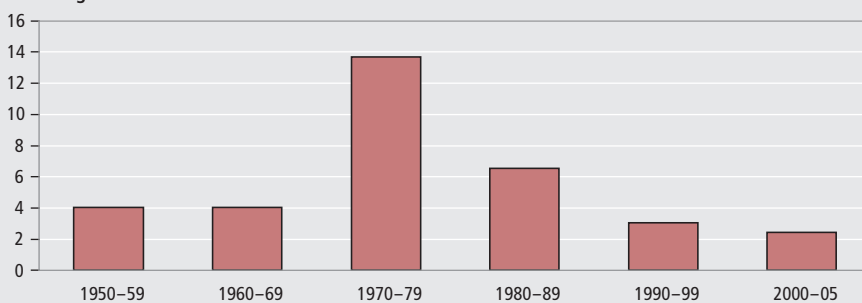
Percentage change over 12 months



Source: Office for National Statistics

Figure 11
Average annual growth of retail prices index

Percentages



Source: Office for National Statistics

As is well known, the 1970s was a period of high inflation. In August 1975, RPI inflation reached 27 per cent – the highest rate that any G7 country has experienced in the past 50 years. Prices rose by an average of 13.7 per cent a year over the decade and annual inflation exceeded 10 per cent in each year from 1974 to 1981, with the exception of 1978. The situation in the UK reflected the experience of the industrial world which was struck by a series of supply shocks during the 1970s, including a quadrupling in the world price of crude oil in 1973.

The 1980s saw the second highest rises in consumer prices in the post-war period. During the decade as a whole, the overall average annual increase in the RPI was 6.6 per cent, with the housing group experiencing the fastest growth in prices, reflecting in particular increased costs in mortgage interest payments and local taxation (for example, council tax).

The period from 1990 to 2005 has seen prices rise by an annual average of 2.8 per cent, with inflation of less than 4 per cent in each year except 1990 and 1991.

Conclusions

With a continually changing economy and labour market, as highlighted by the analysis of long runs of historical data in this article, statistical publications and data need to be continually developed in order to meet the demands of users. The publication of the first edition of *Economic & Labour Market Review* presents one such development, which is driven by the increasing use of the internet and increased demand for data in electronic format rather than as printed tables in a publication.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

- Denman J and McDonald P (1996) 'Unemployment Statistics from 1881 to the Present Day', *Labour Market Trends* 104(1), pp5–18.
- Herbert R (2003) 'Economic Trends – the first fifty years', *Economic Trends* 600, pp35–8 and at www.statistics.gov.uk/cci/article.asp?ID=54
- HM Treasury (2006) *Budget 2006*, The Stationery Office: London.
- Jenkinson G and Brand M (2000) 'A decade of improvements to economic statistics', *Economic Trends* 558, pp45–50 and at www.statistics.gov.uk/cci/article.asp?ID=54

O'Donoghue J, McDonnell C and Placek M (2006) 'Consumer price inflation, 1947–2004', *Economic Trends* 626, pp38–54 and at www.statistics.gov.uk/cci/article.asp?ID=1296

Robjohns J (2006) 'Methodological Note: Annual chain-linking' *Economic Trends* 630, pp25–8 and at www.statistics.gov.uk/cci/article.asp?ID=1554

Ward R and Doggett T (1991) *Keeping Score: The First Fifty Years of the Central Statistical Office*. HMSO: London.

TECHNICAL NOTE

1. Most growth figures in this article are based on compound calculations. For decade growth rates of economic quantity X, between time t and t+10, the compound growth rate follows from re-arranging the standard compounding relation:

$$X_{t+10} = X_t (1 + (r/100))^{10}$$

So that

$$r = 100((X_{t+10} / X_t)^{1/10} - 1)$$

It should be noted that these rates can be distorted if end points (X_{t+10} or X_t) are atypical.

FEATURE

Matthew Powell and Jim O'Donoghue
Office for National Statistics

The personal inflation calculator

SUMMARY

This article describes the introduction by the Office for National Statistics of a personal inflation calculator on the National Statistics website. A separate article (O'Donoghue, 2007) established that inflation rates for individuals are likely to vary, because their personal patterns of consumption are unlikely to exactly mirror the 650 items that are priced to calculate the retail prices index (RPI). The personal inflation calculator allows people to gain a better understanding of how price changes affect them and of how inflation estimates are produced by calculating an inflation rate appropriate to their own spending on the main categories of goods and services.

The personal inflation calculator is based on the RPI, the long-standing and familiar domestic measure of inflation, whose uses include indexation of pension payments, state benefits and private contracts. The RPI covers the full range of goods and services bought by the vast majority of households. This includes the essentials, such as food, housing and heating, as well as discretionary purchases, such as audio-visual equipment and holidays. It covers daily purchases, such as newspapers, as well as very infrequent purchases such as cars and washing machines. The RPI measures the changing price, on a month-by-month basis, of a 'representative basket' of about 650 goods and services or 'items' – the exact number varies from year to year. The index is calculated as a weighted average of the price indices for each of these items. The weights are calculated to represent the average expenditure pattern of all UK households, except some pensioner and high-income households. See O'Donoghue, 2007 for more information on expenditure weights.

No two individuals are the same and very few will totally conform to an average profile. Indeed there would be no reason for using averages if we were all uniformly the same. This is just as true of our expenditure patterns as it is about other behavioural characteristics. It means that most people's spending patterns will differ from the average used to compile the RPI weights, in some cases significantly so. In consequence, it is almost certain that personal inflation rates will differ from those calculated using

average spending patterns. This effect can be examined by combining the price changes of components of the RPI in a way which gets closer to an individual's expenditure pattern than the national averages used in the published RPI. The Office for National Statistics (ONS) has made available on the National Statistics website at www.statistics.gov.uk/cci/nugget.asp?id=22 a personal inflation calculator which allows users to do this. It is based on the RPI although the principles apply equally to the consumer prices index (CPI).

How the personal inflation calculator works

It is never possible to replicate exactly an individual's personal inflation rate as this would require detailed knowledge of where they shop, the precise purchases they make and the prices they pay. It is, however, possible to reassemble the price indices used to calculate the RPI to reflect something closer to their personal expenditure patterns. This is the approach adopted for the personal inflation calculator. The expenditure groups in the calculator have been chosen to balance users' ability to make meaningful estimates with the level of detail needed to identify differences in price movements. In most cases, users are asked to estimate monthly expenditure but, for categories where purchases tend to be relatively infrequent, total expenditure in the last year or last three years is requested. These estimates are then scaled so that they can be compared with average monthly expenditure.

The following special calculations are used for housing and motor vehicle expenditure.

Housing

The RPI includes a range of housing costs. Some, such as the cost of rent, water charges and home insurance, are relatively simple to estimate, but others, in particular mortgage interest payments and depreciation costs, are much more complicated.

The chief difficulty in calculating mortgage interest payments is that the monthly payments made by the two thirds of households that have a mortgage mix these payments together with capital repayments and the administrative costs of the lender. The approach adopted in the RPI is to estimate the average amount of outstanding debt and the average interest rate on that debt and combine them to calculate an estimated payment. Users of the calculator are therefore asked to enter the value of their outstanding mortgage, and the interest rate used in the RPI is applied to this to estimate the importance of mortgage interest payments in their expenditure pattern

The RPI is designed to include the cost of major repairs a homeowner needs to make to maintain their property. As it is difficult to obtain good price series for these directly, they are estimated by using depreciation costs as a proxy indicator. However, the calculation of depreciation costs is complex and owners cannot be expected to replicate it. Instead they are asked to

enter the estimated value of their house and the area of the country where they live. This is combined with information on average property prices by region and house price trends to estimate the importance of depreciation in their expenditure pattern.

Motor vehicle purchases

These are large infrequent expenditures. This is not a problem for calculating the national RPI, as annual average household expenditure estimates will always contain enough vehicle purchases to indicate their importance to the population as a whole. However, it is much more difficult to decide on the importance of changes in vehicle prices to a household or individual. An individual may wish to buy a vehicle in the future but not be interested in buying one this year. Conversely, they may expect to buy one this year but then keep it for several years. The problem has no perfect solution, certainly not with the amount of information that can be loaded into a personal inflation calculator. The solution adopted for this calculator is as follows:

- if a user reports expenditure on petrol and oil, they are taken as vehicle users and therefore potential vehicle purchasers with an interest in vehicle prices. If they do not report petrol and oil expenditure, their vehicle expenditure is set to zero
- the vehicle expenditure of potential vehicle purchasers is calculated by taking the weight for vehicle purchases used

in the RPI and increasing it to allow for the fact that not all households are vehicle users. The resulting proportion is applied to the user's total for all other expenditure to get an estimate of vehicle expenditure, that is, it is assumed that vehicle expenditure for these users is proportional to total expenditure

A fuller description of these calculations is given at the end of this article. It should be noted, however, that there is no way that they can exactly replicate the costs of individual households and that they therefore represent a further level of approximation in the calculator.

It should also be noted that the calculator holds the expenditure pattern submitted by the user fixed over the time period examined. This differs from the RPI where expenditure weights are updated annually to take account of changes in expenditure patterns between years. It is therefore impossible to enter an expenditure pattern that exactly reproduces the RPI.

Finally, it should be remembered that the calculator only combines the price changes used in calculating the RPI in a different way. It is not possible for users to enter their own estimates of the price change they have personally experienced for the expenditure groups. For example, increases in council tax vary between local authorities but the council taxes index used in the RPI is a national average calculated from the averages for England, Scotland, Wales, and Northern Ireland.

Box 1

How to calculate your personal inflation rate

There are four simple stages to calculating a personal inflation rate.

- Price indices for each of the 23 categories of spending in the calculator have been produced using exactly the same price and weights data used for the RPI
- The user enters a personal pattern of expenditure on these categories in the data input screen (**Figure 1**) which replaces the relative expenditure pattern between these categories that is used for the RPI
- The calculator produces a new index for the overall price level based on the user's expenditure pattern
- The change in the new price index is used to estimate a personal inflation rate which is displayed alongside an estimate produced using a national average expenditure pattern on the personal inflation chart screen (**Figure 2**) and personal inflation table screen (**Figure 3**). Note: the estimate calculated using the national average expenditure pattern may differ from the published RPI due to rounding effects

A further screen (**Figure 4**) allows users to compare their estimated annual expenditure for the different categories.

To enter your expenditure pattern

1. Enter your **total** regular **monthly** expenditure (excluding housing costs, loans and taxes) in section 1.
2. Enter your monthly expenditure for each category in section 2
3. Check the residual 'other monthly expenditure' category in section 3 and replace it with your own estimate if necessary (Note: further details of what constitutes other monthly expenditure – or any other category – will appear when your mouse hovers over the appropriate title).
4. Check the running total of monthly expenditure in section 4 and amend your previous inputs as necessary
5. Enter your outstanding mortgage and the current value of your house(s), and set the region of your principal residence in section 5
6. Enter your **monthly** rent and **annual** council tax, water charges, and house insurance, also in section 5
7. Enter your spending in the **past year** on other annual expenditure categories in section 6
8. Enter your spending in the last three years for 'Furnishing and electrical goods' in section 7
9. Check the annual expenditure total in section 8 and the proportions screen and revise your estimates until you are happy with them

Figure 1
Data input screen

national **STATISTICS**

expenditure

Personal Inflation Calculator

1 Estimated MONTHLY Expenditure on Regularly Purchased Items

2000

2 How much of this is on:

Food

500

Meals Out

300

Alcohol

300

Tobacco

50

Phone Charges

60

Clothing and Footwear

200

Rail and Bus Fares

30

Child Care Services

60

Chemists Goods/Medical Costs

200

Fuel for Transport

200

Heating and Lighting

100

3 Calculated Other Monthly Expenditure (adjust as appropriate)

0

4 Calculated Monthly Total:

2000

5 Accommodation Expenses

a. If you own your property:

Value of Outstanding Mortgage

18251

(Est. Annual Interest)

1191

Value of Your Property

180000

Where You Live:

East Midlands

(Est. Annual Depreciation)

1176

b. If you pay rent:

MONTHLY rent

0

c. Utilities and Insurance:

ANNUAL Council Tax

1000

ANNUAL Water Charges and House Insurance

500

6 ANNUAL Spending on

Housing Repairs, Maintenance and DIY

100

Vehicle Repair/Maintenance

100

Vehicle Tax/Insurance

500

UK and Foreign Holidays and other airfares

2000

(Est. Car Expenditure)

2639

7 Spending in LAST THREE YEARS on

Furnishings and Electrical Goods

3000

8 Calculated Annual Total:

34206

hint: mouseover an item description for further information

12 Month Inflation Rates (%): Jan 2004-Oct 2005

YOUR WEIGHTS

NATIONAL WEIGHTS

Rate (%)

0

START Jan 2004

END Oct 2005

12 Month Inflation Rates (%): Jan 2004-Oct 2005

NATIONAL WEIGHTS

YOUR WEIGHTS

Jan 2004

Feb 2004

Mar 2004

Apr 2004

May 2004

Jun 2004

Jul 2004

Aug 2004

Sep 2004

Oct 2004

Nov 2004

Dec 2004

Jan 2005

Feb 2005

Mar 2005

Apr 2005

May 2005

Jun 2005

Jul 2005

Aug 2005

Sep 2005

Oct 2005

12 Month Inflation Rates (%): Jan 2004-Oct 2005

NATIONAL WEIGHTS

YOUR WEIGHTS

Jan 2004

Feb 2004

Mar 2004

Apr 2004

May 2004

Jun 2004

Jul 2004

Aug 2004

Sep 2004

Oct 2004

Nov 2004

Dec 2004

Jan 2005

Feb 2005

Mar 2005

Apr 2005

May 2005

Jun 2005

Jul 2005

Aug 2005

Sep 2005

Oct 2005

Figure 2
Personal inflation chart

national **STATISTICS**

graph

Personal Inflation Calculator

12 Month Inflation Rates (%): Jan 2004-Oct 2005

YOUR WEIGHTS

NATIONAL WEIGHTS

Rate (%)

0

START Jan 2004

END Oct 2005

1 Estimated MONTHLY Expenditure on Regularly Purchased Items

2000

2 How much of this is on:

Food

500

Meals Out

300

Alcohol

300

Tobacco

50

Phone Charges

60

Clothing and Footwear

200

Rail and Bus Fares

30

Child Care Services

60

Chemists Goods/Medical Costs

200

Fuel for Transport

200

Heating and Lighting

100

3 Calculated Other Monthly Expenditure (adjust as appropriate)

0

4 Calculated Monthly Total:

2000

5 Accommodation Expenses

a. If you own your property:

Value of Outstanding Mortgage

18251

(Est. Annual Interest)

1191

Value of Your Property

180000

Where You Live:

East Midlands

(Est. Annual Depreciation)

1176

b. If you pay rent:

MONTHLY rent

0

c. Utilities and Insurance:

ANNUAL Council Tax

1000

ANNUAL Water Charges and House Insurance

500

6 ANNUAL Spending on

Housing Repairs, Maintenance and DIY

100

Vehicle Repair/Maintenance

100

Vehicle Tax/Insurance

500

UK and Foreign Holidays and other airfares

2000

(Est. Car Expenditure)

2639

7 Spending in LAST THREE YEARS on

Furnishings and Electrical Goods

3000

8 Calculated Annual Total:

34206

hint: mouseover an item description for further information

12 Month Inflation Rates (%): Jan 2004-Oct 2005

NATIONAL WEIGHTS

YOUR WEIGHTS

Jan 2004

Feb 2004

Mar 2004

Apr 2004

May 2004

Jun 2004

Jul 2004

Aug 2004

Sep 2004

Oct 2004

Nov 2004

Dec 2004

Jan 2005

Feb 2005

Mar 2005

Apr 2005

May 2005

Jun 2005

Jul 2005

Aug 2005

Sep 2005

Oct 2005

12 Month Inflation Rates (%): Jan 2004-Oct 2005

NATIONAL WEIGHTS

YOUR WEIGHTS

Jan 2004

Feb 2004

Mar 2004

Apr 2004

May 2004

Jun 2004

Jul 2004

Aug 2004

Sep 2004

Oct 2004

Nov 2004

Dec 2004

Jan 2005

Feb 2005

Mar 2005

Apr 2005

May 2005

Jun 2005

Jul 2005

Aug 2005

Sep 2005

Oct 2005

Office for National Statistics

29

Figure 3
Personal inflation table

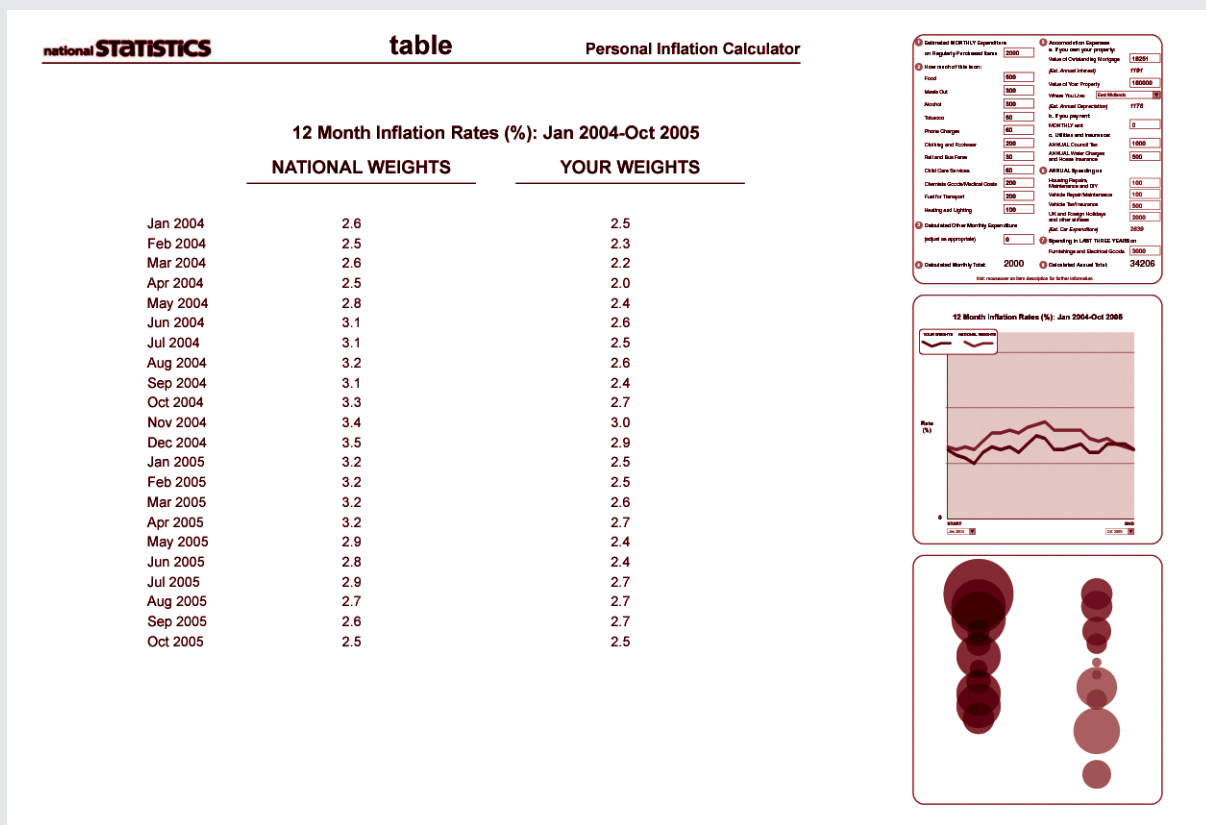
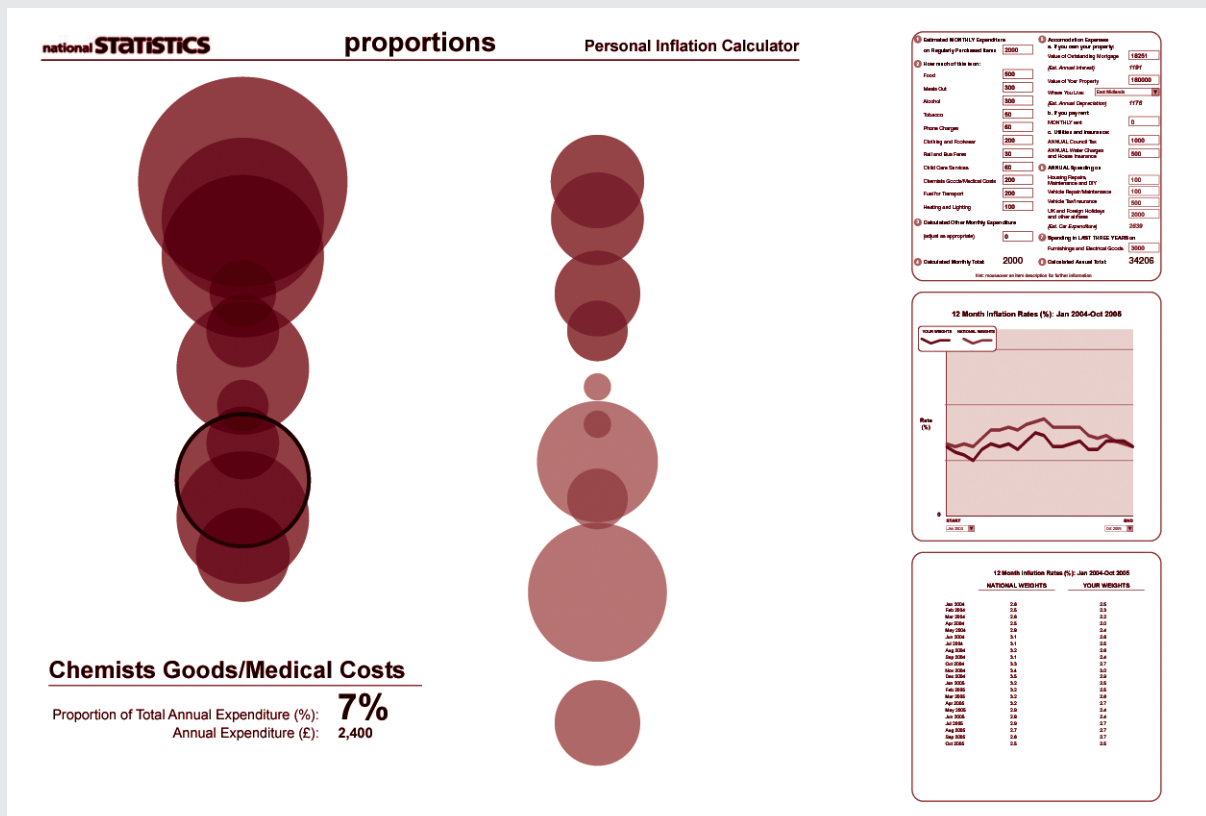


Figure 4
Personal expenditure pattern



Interpreting the results

The calculator can be used to illustrate the sensitivity of the published average inflation rate, as measured by the RPI, to alternative expenditure patterns, and users are encouraged to experiment with their expenditure estimates to see how these affect their inflation rates.

Figure 5, for instance, compares the national RPI inflation with that experienced by households or individuals whose expenditure pattern differs in the following ways:

- they are homeowners with no mortgage
- they are homeowners with a mortgage
- they are in rented accommodation
- they do not smoke or drink
- they travel only by public transport
- they travel only by car

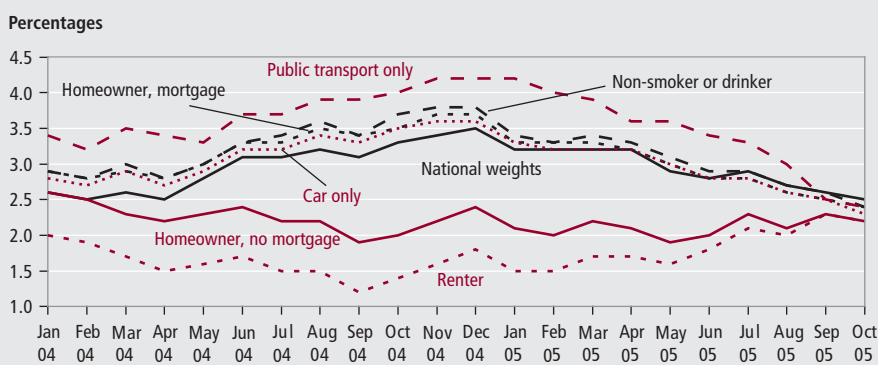
Clearly, public transport using, teetotal, mortgage payers experienced a far higher rate of inflation in this period than car owning, smoking and drinking, renters. The effects were most pronounced towards the end of 2004 when the housing indices were growing fastest. They can easily be explained by looking at the expenditure category price indices in Table 1.

The results in Figure 5 relate to the specific period shown and are provided for illustrative purposes only. The calculator on the website allows users to make such analyses for themselves using the latest data. They must, however, exercise a degree of caution in interpreting the results. In particular, users should bear in mind that the calculator only adjusts for differences between an individual's or individual households' expenditure patterns and the national pattern at a fairly broad level. As already mentioned, it is not practical to produce an index which precisely reflects an individual's or individual household's inflation experience. To reflect an individual's inflation rate would require account to be taken of the following effects, each of which may raise or lower the price change experienced by a particular individual compared with the national average:

- the pattern of expenditure within each high level expenditure group
- choices of brand and variety of product
- choices about where to shop
- shopping behaviour – shifting from brand to brand seeking out special offers or sticking with discounts

Finally, it should be noted that the results are only as good as the expenditure estimates entered by the user.

Figure 5
12-month inflation rates calculated using alternative spending patterns



CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

National mortgage interest payments are estimated in the RPI by O'Donoghue (January 2007) 'Inflation – experience and perceptions' *Economic & Labour Market Review* 1(1).

TECHNICAL NOTE

Estimating special calculations for estimating mortgage interest payments, housing depreciation and motor vehicle expenditure for the personal inflation calculator

Mortgage interest payments

The weight for mortgage interest payments in the RPI is calculated by taking information on average house prices, lending proportions, and repayment rates, to estimate the amount of outstanding debt per mortgage-paying household. This is then adjusted to allow for households that are not paying off a mortgage, to get an average amount of mortgage debt per household in each month and an average interest rate for each month used to calculate average weekly mortgage interest payments. These are then added to produce an annual estimate.

The estimate for the personal inflation calculator is produced by taking this annual estimate for mortgage interest payments, multiplying it by the amount of outstanding mortgage debt entered by the user, and dividing the result by the national average mortgage debt per household.

Housing depreciation

The weight for housing depreciation in the RPI is calculated by taking national totals for the amount for depreciation of owner-occupied housing structures estimated in the National Accounts, adjusting it to produce an index relevant to the population of households covered by the index, and dividing the result by the number of those households, to produce an annual estimate of the average value of housing depreciation.

The estimate for the personal inflation calculator is produced by taking this annual estimate for housing depreciation, multiplying it by the estimate of the value of their house as entered by the user, and dividing the result by the average value of houses in their region, as published by the Department for Communities and Local Government.

Motor vehicle expenditure

As explained above, motor vehicle expenditure for individuals who do not buy petrol or oil for transport is set to zero, while vehicle expenditure for those who do is calculated as a proportion of their total expenditure. In 2006, for example, 5.6 per cent of household expenditure was on buying motor vehicles and most recent estimates are that 75 per cent of households own at least one car. The weight for motor vehicle purchase costs in 2006 in the personal inflation calculator will therefore be $5.6/0.75 = 7.5$ per cent and the estimate for vehicle expenditure will be $(0.075/(1-0.075))$ times the total of all other expenditure.

Table 1
Inflation rates for each expenditure category, 2004

Percentages

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mortgage interest	7.8	7.8	14.9	15.2	15.6	20.8	25.7	30.2	34.2	34.2	34.4	28.4
Rent	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.2	2.6	2.8	2.8
Food	2.6	2.2	1.9	1.3	0.8	0.5	-0.1	-0.2	-0.7	-0.5	-0.4	-0.1
Meals out (excluding alcohol)	2.9	2.8	2.9	2.7	2.7	2.7	2.5	2.5	2.4	2.7	2.8	2.7
Alcohol	2.0	1.9	2.2	2.2	1.9	1.7	2.0	1.9	1.9	1.8	1.8	1.8
Tobacco	3.2	3.1	3.2	3.7	3.6	4.0	3.6	3.6	3.7	3.8	3.8	3.9
Phone charges and post	0.2	1.0	1.5	1.9	1.8	2.1	0.0	-0.1	-1.7	-1.3	-1.1	-1.3
Clothing and footwear	-0.4	-2.3	-2.8	-2.8	-2.8	-2.6	-2.8	-3.5	-3.7	-3.1	-3.0	-3.3
Petrol and oil	1.5	0.4	-2.1	-0.5	8.2	9.1	7.6	7.3	6.8	9.8	11.1	8.6
Electricity and gas	2.8	2.6	3.6	6.4	7.2	6.9	6.9	7.3	7.7	9.3	11.1	12.7
Rail and bus fares	4.6	4.7	3.7	3.5	3.3	4.1	3.7	3.3	3.8	3.4	3.9	4.1
Child care services	4.4	4.4	4.3	4.0	4.7	4.5	4.5	4.6	4.7	4.8	4.5	4.9
Chemists goods and other medical costs	-1.0	-1.1	-1.3	-1.1	-0.5	-0.7	-0.6	-1.5	-1.2	-1.0	-0.8	-0.4
Council tax	11.9	11.9	11.9	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Other monthly expenditure	2.0	1.6	1.9	2.0	2.2	2.2	2.2	2.0	1.6	1.7	1.6	1.8
Water charges and house insurance	5.8	5.8	5.9	6.5	6.6	6.7	6.3	6.2	6.2	6.2	6.5	5.4
Housing repairs, maintenance and DIY materials	3.1	2.8	2.8	2.8	3.0	2.9	2.9	2.9	2.8	2.8	2.9	2.8
Vehicle repairs and maintenance	5.4	5.7	6.0	6.2	6.0	6.0	6.2	6.3	6.4	6.0	6.0	6.3
Vehicle tax and insurance	4.1	4.1	3.8	0.9	-1.6	-1.9	-1.2	-0.5	-0.7	-1.2	0.1	-0.1
UK and foreign holidays	-1.6	-1.2	-2.0	-2.4	-1.1	-0.1	1.5	2.4	1.7	2.1	2.8	4.8
Big ticket furniture and electrical items	-1.5	-0.5	-2.7	-0.8	-1.3	-0.2	-1.9	-1.1	-1.2	-1.2	-1.4	1.1
Housing depreciation	10.1	10.9	12.3	13.0	14.1	14.5	14.9	14.6	14.1	15.1	14.1	14.7
Car purchase	-0.5	0.0	-0.3	-1.2	-2.6	-3.5	-3.5	-3.9	-4.6	-5.6	-6.0	-6.2
RPI	2.6	2.5	2.6	2.5	2.8	3.0	3.0	3.2	3.1	3.3	3.4	3.5
Unweighted variance *100	12.1	13.0	21.8	19.5	22.7	30.2	39.3	49.2	60.8	63.6	64.3	49.0

Table 1 – continued

Inflation rates for each expenditure category, 2005

Percentages

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Mortgage interest	28.4	28.4	23.3	23.3	22.8	17.6	13.0	12.7	6.0	5.8
Rent	3.0	3.1	3.1	3.6	3.6	3.5	3.8	3.8	3.8	3.2
Food	0.3	0.8	1.4	0.8	1.3	2.0	1.4	1.7	1.5	1.0
Meals out (excluding alcohol)	2.7	2.7	2.7	3.1	3.1	2.9	3.0	3.0	3.2	3.2
Alcohol	1.8	2.0	1.2	1.6	1.9	2.0	2.4	2.2	2.1	2.1
Tobacco	4.7	5.2	5.1	4.9	4.9	4.3	3.4	3.3	3.2	4.0
Phone charges and post	-1.4	-2.0	-2.4	-2.6	-2.8	-2.3	-2.1	-2.1	-1.2	-1.3
Clothing and footwear	-3.5	-3.0	-2.3	-2.4	-2.6	-2.1	-2.2	-1.8	-2.3	-2.4
Petrol and oil	4.3	5.6	6.7	10.3	4.8	5.1	9.8	12.4	17.5	13.3
Electricity and gas	14.0	13.9	13.9	13.0	12.1	12.8	13.0	12.8	13.5	14.6
Rail and bus fares	5.0	4.7	4.3	3.9	3.4	3.7	4.4	4.7	4.4	5.3
Child care services	6.1	6.1	5.6	6.1	5.5	5.7	5.4	5.9	5.6	5.5
Chemists goods and other medical costs	0.5	-0.7	0.2	-0.1	0.5	1.2	1.6	1.7	0.7	1.0
Council tax	6.1	6.1	6.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Other monthly expenditure	1.9	1.8	1.6	1.8	2.0	2.0	2.0	1.7	2.3	2.3
Water charges and house insurance	4.7	4.7	4.6	7.9	7.7	7.7	7.7	7.6	7.6	7.4
Housing repairs, maintenance and DIY materials	2.7	2.8	3.0	2.9	3.2	3.1	3.6	3.1	3.0	2.8
Vehicle repairs and maintenance	6.3	6.2	5.9	6.0	5.9	6.2	5.7	6.2	5.9	6.2
Vehicle tax and insurance	-0.9	-2.9	-3.4	-1.6	-0.1	-0.5	0.5	-2.1	-1.9	-1.1
UK and foreign holidays	3.2	3.2	4.4	3.5	4.0	3.1	1.9	1.6	1.3	1.2
Big ticket furniture and electrical items	-1.7	-2.6	-0.3	-2.8	-2.7	-2.8	-0.3	-1.8	-2.3	-2.5
Housing depreciation	14.1	13.6	12.4	11.7	9.9	8.8	7.3	6.3	4.9	3.9
Car purchase	-6.9	-6.7	-6.1	-6.1	-6.0	-5.6	-5.4	-5.5	-4.5	-3.4
RPI	3.2	3.2	3.2	3.2	2.9	2.9	2.9	2.8	2.7	2.5
Unweighted variance *100	50.6	51.8	38.9	40.0	34.3	25.6	20.1	23.0	24.3	19.9

FEATURE

Jim O'Donoghue
Office for National Statistics

Inflation – experience and perceptions

SUMMARY

Individuals sometimes comment that their personal inflation rates are different from the official rates published by the Office for National Statistics. This article explores why this might be. It starts by explaining what the retail prices index (RPI) is and how it is constructed. It then examines how individuals' personal experiences of inflation might vary according to their spending patterns. Finally, the article looks at how perceptions of inflation rates might vary by how frequently goods and services are bought.

ONS does not directly measure the public's perceptions of inflation, but it is clear from correspondence received and reports in the media that many people think that inflation is higher than that shown by the official figures and that this has gone some way in undermining confidence in them. Indeed, a survey commissioned in March 2005 by the Office for National Statistics (ONS) found that the inflation figures were among the less trusted official statistics, ranking fourth out of six key statistics (Goddard).

Part of the explanation for the lack of confidence in the official inflation figures – whether based on the RPI or consumer prices index (CPI) – is that they represent the expenditure and inflation experiences of an average household and that, not surprisingly, most people's expenditure patterns, and their resulting experience of price changes, will differ from that average. In addition, a person's perceptions of their personal inflation rates can be affected by how often they buy specific goods and services.

One possible source of confusion is between lower inflation and lower prices. Inflation is the rate of increase in prices. A fall in the inflation rate from 3 per cent to 2 per cent, for example, is described as a fall in, or lower, inflation. It does not mean, as some people might believe, that prices have fallen in an absolute sense, but that prices generally are not increasing as much. The prices of some individual goods and services have fallen, some clothes prices

being a recent example, but generally prices in the UK tend to rise and inflation, the increase in the general level of prices, has been positive.

This article investigates some of the reasons why inflation rates will vary in practice between households and goes on to show that the most frequently bought goods and services, which might most heavily influence perceptions of inflation, have in recent years generally risen at a faster rate than prices overall.

Interest in perceptions of inflation is not confined to the UK. It has also been considered in the European context by, among others, the European Central Bank (2006) and D'Elia (2005) in Italy.

The analysis in the current article focuses on the RPI, the long-standing and familiar domestic measure of inflation, whose uses include indexation of pension payments, state benefits and private contracts. It covers the full range of consumers' expenditure, including council tax and owner-occupiers' housing costs, but excludes some pensioner households and high-income households. The conclusions reached apply equally to the CPI. This is a macro-economic measure of inflation that is used for the Government's inflation target and has been developed according to international guidelines. The CPI is calculated from the same basic data as the RPI but its methodology and coverage differ in a number of important respects. It excludes most owner-occupier housing costs (see Roe and Fenwick (2003) for more details).

Background to the retail prices index

The RPI covers the full range of goods and services bought by the vast majority of households. This includes the essentials, such as food, housing and heating, as well as discretionary purchases, such as audio-visual equipment and holidays. It covers daily purchases, such as newspapers, as well as very infrequent purchases such as cars and washing machines. The RPI measures the changing price, on a month-by-month basis, of a 'representative basket' of about 650 goods and services – the exact number varies from year to year. **Box 1** explains how prices are collected and the care that is taken to gather together a representative sample of prices.

Because we spend more on some items than others, we would expect a 10 per cent increase in the price of petrol, say, to have a much bigger impact on the RPI than, say, a 10 per cent rise in the price of tea. For this reason, the components of the index are 'weighted' to ensure that it reflects the importance of the various items as measured by the total expenditure on them when averaged across all relevant households, and the amount spent in different regions of the country and in different types of shops. **Box 2** explains in more detail how the expenditure weights for the RPI shopping basket are obtained and used to calculate inflation rates.

It is important that the index calculations are based each month on 'like for like' comparisons of prices for each of the items in the basket. However, some brands or varieties of particular products priced at the start of the year may not be available in later months. This is common in markets where the rate of technological progress is high, as is the case with many electronic goods, or where consumer tastes change rapidly, for example in clothing.

When particular products do disappear from the market, care is taken to ensure that replacements are of broadly comparable quality, so that price comparisons are not distorted. If this is not possible, prices are adjusted to take

Box 1

Price collection

Around the middle of each month, price collectors record about 110,000 prices for over 550 items consisting of specified types of goods and services. They go to a variety of shops in around 150 places throughout the UK. Prices are collected from around 25,000 shops in total. The number of price quotes collected per item in each location ranges between one (for example, bread) and six (for example, property rents); the precise number depends on the relative expenditure on each item and the variability of the prices collected. Most local shops are visited in person to collect prices at first hand, although some work is done by telephone. The price collectors go to the same shops each month, noting the prices of the same products, so that over time they compare like with like.

For many goods and services, particularly those where the same price is charged throughout the country, it is more efficient to collect prices centrally. Information on charges such as those for TV licences, water supply, newspapers, council tax and rail fares

– about 110 indicators in all – are obtained from central sources. Also, some large chain stores that have national pricing policies for their branches help by sending information directly to ONS. In total, around 10,000 prices are collected centrally each month.

It is important that the index is representative and kept up-to-date. The basket of goods and services is therefore reviewed every year, helping to ensure that the RPI calculations properly reflect UK shopping and purchasing patterns.

A wide range of information is used in determining the contents of the RPI basket, including ONS's own surveys of household spending, external market research and feedback from the price collectors. Some changes to the basket are necessary each year due to changing markets, fashions and new products. Internet book purchases and DVD players, for example, have been added in recent years. The basket is held fixed for a year at a time. See Knipe (2006) for more details.

Box 2

The RPI shopping basket: expenditure weights

The prices of individual items are grouped together in what are known as 'sections', such as bread or furniture. There are 85 published sections and, within these sections, around 650 detailed items. These components are combined together to produce the overall index for the RPI by weighting them to ensure that they reflect the importance, in terms of expenditure, of the various items in the average shopping basket. Within items, weights may also be calculated to take account of the amounts we spend in different regions of the country and in different types of shops.

The weights for the RPI are derived from a number of sources but mainly from ONS's Expenditure and Food Survey. Each year, a sample of over 6,000 households from all over the country keeps records of their spending over the course of a fortnight. They also record details of major purchases over a longer period.

In calculating the RPI weights, the expenditure of people in households with the top 4 per cent of incomes and low-income pensioners is excluded on the grounds that the spending of these groups is significantly different from the great majority. These restrictions are designed to make the RPI more representative of the 'typical household'. The spending patterns of the excluded pensioner households, who in 2004–05 made up around 5 per cent of all households, are fairly homogeneous (unlike the wealthy households) and separate indices are calculated and published quarterly for them.

The weights for the RPI are also changed each year to keep pace with general changes in our spending habits. Over the years, people have tended to spend more of their money on electrical goods, travel and leisure while the proportion they spend on basics such as food has fallen.

account of the change in quality, using one of a range of techniques from fairly simple methods to procedures that relate the prices of goods to their features.

Explicit adjustments are made, for example, in the case of personal computers, where most replacement models are of higher quality than their predecessors. A rise in price might be accompanied by improvements, say, in memory or processing speed. In this case, the quality-adjusted or 'like for like' comparison of prices will show lower inflation than an index which did not take account of improved quality. In this way, quality adjustment helps to focus the index on underlying price changes for a fixed basket of goods and services.

Why people may experience inflation which differs from the average

An individual's personal inflation rate is more than likely to differ from the average, because we all spend different amounts of money on different goods and services whose prices may move in different ways. Indeed, it would be unusual to find somebody who precisely reflected the average, despite the strenuous efforts taken to ensure that the RPI is representative of average expenditure. The main reasons for this are:

- the RPI covers some expenditure which will only be relevant to a minority of households, although included in the basket of goods priced to ensure that it is representative of household expenditure overall. An obvious example is expenditure on tobacco, even though only about a quarter of adults are smokers. Such expenditure is obviously irrelevant for a non-smoker's inflation rate
- at a more detailed level, consumption and expenditure patterns for a particular good or service will vary between consumers. For instance, the expenditure weight associated with a smoker's consumption of tobacco may differ from the average, depending on whether they are occasional or heavy smokers
- price changes experienced by consumers will vary according to where they shop. In compiling the RPI, retail outlets are selected to be representative of household expenditure across the UK as a whole. This means, for instance, that prices collected from the major supermarkets are represented in line with their market

share. However, the retail outlets in which a particular individual shops will be specific to that individual and may differ from the average

- price changes experienced by consumers will vary according to the precise products or brands that they buy. The range of products whose prices are tracked for a particular item, such as a white sliced loaf of bread, broadly reflects the pattern of expenditure on that item and will include some own-brand products as well as branded products. If an individual buys only branded products, say, this may contribute to their personal inflation rate differing from the average. A particularly important example of this is council tax: the percentage change used in the RPI is an average across all councils, but the actual price change experienced by an individual will depend on where they live
- finally, the 650 or so items in total that make up the basket of goods and services which are priced for the computation of the RPI is a sample of all those available, as it is clearly impracticable to monitor the price of every product sold in every shop. It is assumed that the prices of similar items move in line with one another in response to market forces. For instance, changes in the price of bacon are represented by back bacon and gammon; it is assumed that other cuts of bacon will, on average, move in line with these two items. In practice, it is possible that the price movements for the particular items bought by a particular individual rather than by the population as a whole are not adequately represented in the index

Why perceptions of inflation may differ from actual inflation experienced: inflation rates by frequency of purchase

Regardless of whether an individual's personal inflation rate differs from the average, the evidence suggests that perceptions of inflation can be heavily influenced by changes in the prices of those goods and services that are bought most frequently.

In particular, people may not notice or give sufficient weight to changes in the cost of infrequently bought items, such as household appliances (for example, cookers), and audio-visual equipment (for example, digital cameras, televisions).

These items are being bought every week in the shops and although not necessarily bought by any one individual at a given point in time, it is important to measure their price change continuously so that they are represented in the overall inflation rate. But a change in price is irrelevant to the individual until they make a repeat purchase of a particular product. Thus there are two factors at work which will influence perceptions:

- from the point of view of the individual, infrequently bought items do not form part of a typical monthly, or perhaps even annual, shopping basket
- even if they are included, an individual may find it difficult to judge how prices have changed because of the passage of time since they were last bought and how technology has advanced, so that it is only possible to find a product of better quality. An example of this is personal computers

In reality, the evidence indicates that these infrequently bought items have typically shown lower than average price increases, or in some cases price falls, in the recent past.

In order to illustrate the possible effects of frequency of purchase on perceptions of inflation, ONS has undertaken a special exercise where each category of expenditure was classified by the frequency of purchase of the associated goods or services. It was not possible to do this from survey data, such as the Expenditure and Food Survey, because they are not designed to provide this information. Instead, the classification was based on the judgement of an expert team of price analysts.

A four-way classification of frequency of purchase was used, as follows:

- at least monthly
- at least quarterly but less frequently than monthly
- at least annually but less frequently than quarterly
- less frequently than annually

The composition of these four categories is summarised in **Table 1**, with the full detail being given in the Annex.

Corresponding price indices were then compiled according to the cumulative frequency of purchase as follows:

- at least monthly
- at least quarterly
- at least annually
- all purchases (the all items RPI)

Table 1
RPI goods and services classified by frequency of purchase

At least monthly	Food Catering Alcoholic drinks Tobacco Most housing costs Fuel and light Household consumables Pet care	Chemists' goods Most household services Motoring running costs Bus and rail fares Books and newspapers TV licences and rentals Entertainment and recreation
At least quarterly but less frequently than monthly	Clothing Discs and tapes Toys, photo and sports goods	Gardening Personal services
At least annually but less frequently than quarterly	DIY goods Footwear Vehicle maintenance Holidays	Fees and subscriptions Personal articles Air fares and other travel costs
Less frequently than annually	Consumer durables Motor vehicle purchase costs	Housing repairs

Two caveats apply when analysing the results:

- there is inevitably a degree of judgement in deciding where some categories of expenditure should be classified, particularly for those containing a mixture of products with different frequencies of purchase. For example, personal articles include monthly purchases, such as daily disposable contact lenses, but also many more articles bought much less frequently, such as jewellery and spectacle frames. The latter category accounts for the majority of the weight, so this section is categorised as 'at least annually', and
- underlying the analysis is the assumption that perceptions of inflation are based on the frequency by which goods and services are paid for rather than when they are billed. Thus, regular bills that change annually, such as council tax and water rates, are treated as monthly purchases, reflecting the fact that it is common for these bills to be paid in instalments and that they are expenses that accrue continuously. Similarly, gas and electricity bills are also treated as monthly, reflecting the fact that they are generally paid monthly. Clearly, this approach to the categorisation may not always be appropriate, as it will critically depend on an individual's perceptions, which will be influenced among other things by frequency and method of payment

The results over the last ten years are illustrated in **Figure 1**, with the most recent data, back to January 2003, shown in **Table 2**.

The table and figure indicate that the most frequently bought goods and services according to the classification described above have generally had a higher inflation rate than the published RPI in recent years. In many periods, including that from January 2003, the difference between the two exceeds 1 percentage point. In November 2004, the difference reached 2.2 percentage points, around two thirds higher than the all items rate.

A noticeable exception, when there was little difference between the two, is the period July 2001 to February 2002, when mortgage interest payments and petrol and oil prices were falling. These components are both classified as 'at least monthly purchases' and have a relatively higher weight in that index than in the 'all purchases' index. They therefore pull down the 'at least monthly purchases' inflation rate by more than the 'all purchases' rate, eliminating the gap between the two series.

Table 2 also shows a sharp increase between April and July 2006 in the inflation rates. This is driven in large part by a sharp increase in electricity and gas prices, whose

annual inflation rates increased from 17 to 26 per cent and 25 to 36 per cent respectively. Energy costs make up a greater proportion of the 'at least monthly purchases' index than they do in the 'all purchases' index, thus contributing to a widening of the gap between these two indices over this period.

The figure also shows that the 'at least quarterly' and 'at least annually' series generally lie between the 'at least monthly' and 'all purchases' series. The reasons for this can be seen by looking at Table 1 and the Annex. In 2006, two thirds of the RPI basket was classified as being 'at least monthly' purchases, of which a substantial element is services, whose costs have recently tended to rise at a faster rate than the all items RPI, reflecting in part movements in wage costs. The 'at least annually but less frequently than quarterly' purchases category also includes a substantial element of services. In contrast, the majority of expenditure covered by the 'at least quarterly but less frequently than monthly' and 'less frequently than annually' categories are goods. In particular, these two categories cover clothing and consumer durables respectively, prices for both of which have been falling since 1998.

It is also worth noting that the items included in the monthly purchases index tend to be those that might be regarded as necessities. These are items that households have to buy, such as food, heating and housing, regardless of how prices are moving. In times when these costs are rising faster than the average, the proportion of expenditure by households on necessities will tend to increase, while relatively less will be spent on optional infrequent purchases, such as durable goods, where prices are falling. In these circumstances, in the short term, an individual's inflation rate may tend to move closer to the monthly purchases index than the all items index, reflecting changes in expenditure. This phenomenon, which is commonly referred to as the substitution effect, by convention

Figure 1
RPI percentage change over 12 months by frequency of purchase

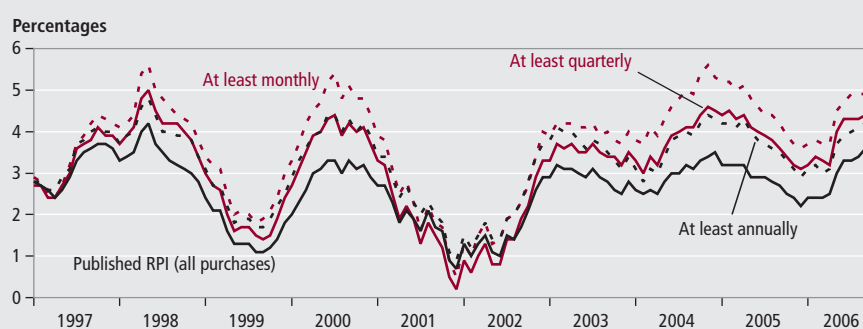


Table 2
RPI inflation rates analysed by frequency of purchase

		Percentage change over 12 months				
		At least monthly	At least quarterly	At least annually	All purchases	Difference between monthly and all purchases
2003	Jan	3.9	3.3	3.6	2.9	1.0
	Feb	4.2	3.7	4.0	3.2	1.0
	Mar	4.2	3.6	3.9	3.1	1.1
	Apr	4.2	3.7	3.9	3.1	1.1
	May	4.1	3.5	3.7	3.0	1.1
	Jun	4.1	3.5	3.7	2.9	1.2
	Jul	4.2	3.7	3.8	3.1	1.1
	Aug	3.9	3.5	3.6	2.9	1.0
	Sep	4.0	3.4	3.5	2.8	1.2
	Oct	3.8	3.4	3.3	2.6	1.2
	Nov	3.7	3.2	3.1	2.5	1.2
	Dec	4.0	3.5	3.3	2.8	1.2
2004	Jan	3.8	3.3	3.1	2.6	1.2
	Feb	3.7	3.0	2.8	2.5	1.2
	Mar	4.1	3.4	3.1	2.6	1.5
	Apr	3.9	3.2	3.0	2.5	1.4
	May	4.3	3.6	3.4	2.8	1.5
	Jun	4.6	3.9	3.7	3.0	1.6
	Jul	4.8	4.0	3.8	3.0	1.8
	Aug	5.0	4.1	4.0	3.2	1.8
	Sep	4.9	4.1	3.8	3.1	1.8
	Oct	5.4	4.4	4.2	3.3	2.1
	Nov	5.6	4.6	4.4	3.4	2.2
	Dec	5.3	4.5	4.4	3.5	1.8
2005	Jan	5.2	4.4	4.2	3.2	2.0
	Feb	5.2	4.5	4.3	3.2	2.0
	Mar	5.0	4.3	4.1	3.2	1.8
	Apr	5.1	4.4	4.2	3.2	1.9
	May	4.8	4.1	4.0	2.9	1.9
	Jun	4.6	4.0	3.9	2.9	1.7
	Jul	4.4	3.9	3.6	2.9	1.5
	Aug	4.4	3.8	3.6	2.8	1.6
	Sep	4.2	3.6	3.4	2.7	1.5
	Oct	3.9	3.4	3.2	2.5	1.4
	Nov	3.7	3.2	3.0	2.4	1.3
	Dec	3.6	3.1	2.8	2.2	1.4
2006	Jan	3.7	3.2	3.0	2.4	1.3
	Feb	3.8	3.4	3.1	2.4	1.4
	Mar	3.7	3.3	3.0	2.4	1.3
	Apr	3.7	3.2	3.1	2.5	1.2
	May	4.5	4.0	3.7	3.0	1.5
	Jun	4.7	4.3	3.9	3.3	1.4
	Jul	4.9	4.3	4.0	3.3	1.6
	Aug	4.9	4.3	4.1	3.4	1.5
	Sep	4.9	4.4	4.2	3.6	1.3

REFERENCES

- Goddard 'Public Confidence in Official Statistics' at www.statistics.gov.uk/about/data/public_confidence/downloads/OmnibusMarch05.pdf
- Roe and Fenwick (December 2003) 'The New Inflation Target: The Statistical Perspective' at www.statistics.gov.uk/StatBase/Product.asp?vlnk=10913
- European Central Bank (February 2006) 'Rational inattention, inflation developments and perceptions after the Euro changeover' Working paper series No. 588.
- D'Elia (November 2005) 'Actual and perceived inflation' *Economia Società e Istituzioni* n 3.
- Knipe (March 2006) 'Consumer Prices Index and Retail Prices Index: The 2006 Basket of Goods and Services' at www.statistics.gov.uk/cpi/article.asp?ID=1455

is not taken into account in price indices, such as the RPI, which is designed to measure the impact on inflation solely of price changes.

To conclude, regular monthly purchases, which account for the majority of household expenditure, have consistently run at a higher inflation rate than all purchases covered by the RPI. This may

help to explain why some individuals think that they have experienced higher inflation than they really have, and why their perceptions of the official inflation figures are inaccurate.

CONTACT

✉ elmr@ons.gsi.gov.uk

Annex

RPI sections classified by frequency of purchase

	Frequency of purchase				Good(G)/ service(S)/ housing(H)	Weight 2006 (parts per thousand)	Sept 2006 percentage change over 12 months
	At least monthly	At least quarterly but less than monthly	At least annually but less than quarterly	Less than annually			
Food							
Bread	X				G	4	4.9
Cereals	X				G	3	0.0
Biscuits and cakes	X				G	6	2.4
Beef	X				G	4	9.2
Home-killed lamb	X				G	1	5.5
Imported lamb	X				G	1	-0.9
Pork	X				G	1	3.4
Bacon	X				G	2	6.5
Poultry	X				G	4	-2.0
Other meat	X				G	7	3.4
Fresh fish	X				G	2	10.9
Processed fish	X				G	2	6.8
Butter	X				G	1	1.2
Oil and fats	X				G	1	10.0
Cheese	X				G	3	1.1
Eggs	X				G	1	4.4
Milk	X				G	5	1.5
Milk products	X				G	4	1.9
Tea	X				G	1	11.8
Soft drinks	X				G	10	4.2
Sugar and preserves	X				G	1	2.4
Sweets and chocs	X				G	10	4.1
Unprocessed potatoes	X				G	1	10.3
Potato products	X				G	3	4.0
Other fresh vegetables	X				G	6	11.0
Processed vegetables	X				G	2	9.1
Fresh fruit	X				G	6	4.9
Processed fruit	X				G	1	1.8
Other foods	X				G	11	1.7
Coffee, etc.	X				G	1	7.5
Catering							
Restaurant meals	X				S	27	2.2
Canteen meals	X				S	4	2.8
Take-aways and snacks	X				S	19	3.1
Alcoholic drinks							
Beer on-sales	X				G	31	3.4
Beer off-sales	X				G	5	1.1
Wine and spirits on-sales	X				G	17	3.2
Wine and spirits off-sales	X				G	14	1.0
Tobacco							
Cigarettes	X				G	26	4.8
Tobacco and cigars	X				G	3	4.5
Housing							
Rent	X				S	45	2.9
Mortgage interest payments	X				H	50	13.1
Council tax	X				H	39	4.7
Water charges	X				S	12	5.5
Repairs				X	S	12	4.7
DIY materials			X		G	13	2.5
Dwelling insurance and ground rent	X				S	7	2.5
House depreciation	X				H	44	6.6

Annex (continued)

RPI sections classified by frequency of purchase

	Frequency of purchase				Good(G)/ service(S)/ housing(H)	Weight 2006 (parts per thousand)	Sept 2006 percentage change over 12 months
	At least monthly	At least quarterly but less than monthly	At least annually but less than quarterly	Less than annually			
Fuel and light							
Coal and solid fuels	X				G	1	7.9
Electricity	X				S	15	27.3
Gas	X				S	14	41.5
Oil and other fuels	X				G	3	-8.4
Household goods							
Furniture				X	G	26	2.6
Furnishings				X	G	11	0.6
Electrical appliances				X	G	8	-3.6
Other household equipment				X	G	5	-0.2
Household consumables	X				G	14	2.0
Pet care	X				G	7	3.6
Household services							
Domestic services	X				S	12	5.6
Fees and subscriptions			X		S	29	9.7
Postage	X				S	1	13.1
Telephones, etc.	X				S	24	0.2
Clothing and footwear					G		
Men's outerwear		X			G	10	-0.4
Women's outerwear		X			G	17	-0.8
Children's outerwear		X			G	6	1.0
Other clothing		X			G	7	0.0
Footwear			X		G	9	-0.5
Personal goods and services							
Personal articles			X		G	12	3.6
Chemists' goods	X				G	16	1.4
Personal services		X			S	13	4.7
Motoring expenditure							
Purchase of motor vehicles				X	G	56	-1.9
Maintenance of motor vehicles			X		S	20	5.9
Petrol and oil	X				G	40	-7.6
Vehicle tax and insurance	X				S	24	1.3
Fares and other travel							
Rail transport fares	X				S	5	3.1
Bus and coach fares	X				S	4	-0.3
Other travel costs			X		S	10	-1.7
Leisure goods							
Audio visual equipment				X	G	9	-10.6
Discs and tapes		X			G	4	-2.5
Toys, photo and sports goods		X			G	12	-4.4
Books and newspapers	X				G	10	6.4
Gardening		X			G	6	0.1
Leisure services							
TV Licence and rentals	X				S	12	2.5
Entertainment and recreation	X				S	17	6.1
Foreign holidays			X		S	30	1.0
UK holidays			X		S	8	4.5
Weight (parts per thousand)	667	75	131	127	S	1,000	

FEATURE

Jim O'Donoghue
Office for National Statistics

Keeping the RPI and CPI basket of goods and services up to date

SUMMARY

As part of a process of continual improvement, and to help ensure that the Consumer Prices Index (CPI) and Retail Prices Index (RPI) are representative of consumer spending patterns, the items that are priced in compiling the indices are reviewed each year. This article describes the review process and explains how and why the various items in the CPI and RPI baskets are chosen.

The shopping basket

The most useful way to think about both the CPI and RPI indices is to imagine a 'shopping basket' covering the full range of goods and services on which people typically spend their money. As the prices of the various items in the basket change over time, so does the total cost of the basket. Movements in the CPI and RPI indices represent the changing cost of this representative shopping basket.

It would be both impractical and unnecessary for this shopping basket to contain every item bought by every household in compiling the CPI and RPI. The prices of similar items can reasonably be assumed to move in line with one another in response to market forces. It is therefore sufficient to compile the index using prices of a large and varied sample of products in selected locations. The goods and services for which prices are recorded are called 'representative items'. These items are held constant for one year at a time, and are reviewed annually to ensure that they remain representative of consumers' expenditure patterns, and take account of the development of new goods and services. For example, purchases of vinyl records were common during the 1960s and 1970s. However, with the advent of compact discs, records now form a niche market and have not been included as an item since the early 1990s.

The review process also helps to ensure that the indices reflect longer-term trends in consumer spending patterns. For example, the proportion of household expenditure

devoted to leisure services has risen steadily. This is reflected both in an increasing weight for this component in the CPI and RPI, and the addition of new items to the basket in recent years to improve measurement of price changes in this area; examples include entrance fees to a wide range of sporting venues and subscriptions to recreational and sporting facilities, including leisure centres and health clubs/gyms.

Representative items

There are some individual goods and services where typical household expenditure is sufficiently large that they merit inclusion in the basket in their own right; examples include car purchase and repair, petrol, and utility charges such as those for telephone, electricity and gas supply.

However, more commonly, it is necessary to select a sample of specific goods and services that can give a reliable measure of price movements for a broader range of similar items. For example, price changes for a power drill might be considered representative of price changes for other power tools. The selection of these representative items is judgmental. For each product grouping, a number of items are selected for pricing whose price movements, taken together, provide a good estimate of the overall change in prices for the group as a whole. For example, there are around 20 representative items in the CPI furniture and furnishings class, from bedroom wardrobes to kitchen units, which are used each month to give an overall estimate of price changes for all furniture products.

Selecting the representative items

A number of factors need to be taken into account when choosing representative items. The number of items chosen to represent each product group within the CPI and RPI depends both on the weight, that is, expenditure of the group, and also the variability of price changes between the various items that could be selected to represent the group (reflecting, for example, the diversity of products available). Intuitively, it makes sense to choose more items in product groups where spending is high. However, if price movements of all possible items in the group are very similar as in the case of cigarettes, it is sufficient to collect prices for only a few. In contrast, if price movements of all the possible items are very different, prices will be needed for many representative items to get a reliable overall estimate of price change for the group.

For example, in the case of the fuels and lubricants class in the CPI, it is sufficient to monitor just three representative items: ultra low sulphur (unleaded) petrol, ultra-low sulphur diesel and motor oil. Total household spending in this area is high but these three items provide a reliable estimate of price changes for all fuel and lubricant products because, taken together, these three items cover 99 per cent of spending in this category. In contrast, there are around 15 items representing fruit products in the CPI and RPI baskets, despite the fact that spending on fruit is much lower. This reflects the greater diversity in type and variety of fruit available for purchase. As a consequence, there is considerable variation in price changes for these different fruits, as well as between fruits sold in different shops.

Analysis of the variability of prices in relation to the weight of a product category may indicate that more or fewer items are required, but it cannot tell us which items should be priced. Choosing a particular set of items to represent each category therefore remains a matter of judgement. CPI and RPI commodity groupings are regularly reviewed with the aim that all significant items or distinct markets where consumers' expenditure exceeds around £400 million annually are explicitly represented in the basket, except where those items are judged to be adequately represented by other items in the basket. Conversely, where spending on items falls below £100 million, there should be good reason for their continuing inclusion in the basket. For example, while

spending on acoustic guitars and power drills is relatively low, both are included in the basket to represent wider markets (musical instruments and power tools respectively) that would otherwise not be covered explicitly. Trends in expenditure, as well as the latest available figures, help to inform the decisions in all cases.

This focus on relative expenditures in determining the contents of the basket partly reflects the wealth of data that is available describing household spending patterns. One major source of information comes from the diaries filled in by people taking part in the ONS Expenditure and Food Survey, a continuous survey of over 6,000 households each year. This is supplemented by detailed analyses of trends presented by market research companies, trade journals and press reports. Changes in the retail environment are also provided by Research International, a market research company which collects many of the prices on behalf of ONS. Together, these various sources of information help to ensure the goods and services that the average household spends its money on are appropriately represented in the CPI and RPI baskets.

Finally, from a practical viewpoint, the items must be easily obtainable by price collectors, to ensure that estimates of price change are based on an adequate number of price quotes collected throughout the UK.

CONTACT

 elmr@ons.gsi.gov.uk

ACKNOWLEDGEMENTS

This article draws heavily on James Knipe's 'Consumer Prices Index and Retail Prices Index: The 2006 Basket of Goods and Services' (March 2006) at www.statistics.gov.uk/cci/article.asp?id=1455

FEATURE

Robert Hayes, Catrin Ormerod and
Felix Ritchie
Office for National Statistics

Earnings: summary of sources and developments

SUMMARY

UK earnings data are collected through many different channels and summarised using different methods. Hence, the stories told by aggregate figures may appear to conflict with one another. While the overall picture of earnings is similar, there are important differences in the detail.

This article draws together the various sources of earnings aggregates to investigate similarities and inconsistencies and to improve understanding of this data. In particular, this work highlights the benefit from bringing sources together at the unit level to enhance analytical capability and throw more light on the coherence between data sources.

In the last eighteen months, the Office for National Statistics has linked datasets using a range of innovative techniques to enhance analytical capability and carry out micro-level consistency checks. The richness of the linked datasets has brought out a number of new important results which are summarised in this article.

The Office for National Statistics (ONS) is the main source of statistical information on earnings in the UK, gathered by surveys of individuals or their employer. Some surveys which focus on topics other than earnings also include earnings information, mainly to allow descriptive analysis. Other government departments routinely collect information on earnings; for example, HM Revenue and Customs (HMRC) collects earnings data for taxation and income forecasting purposes. 'Earnings data: A brief guide to sources and outputs' describes these; a more detailed version of the article, 'Earnings data: Sources and outputs', is available on the National Statistics website.

The Earnings Analysis branch of ONS was set up in March 2005 to enhance analytical capability and exploit the range of earnings data sources and indicators available. The focus is on gaining the benefits of microdata analysis, especially by linking microdata from various sources, to maximise analytical power.

In response to the 'Review of statistics on distribution of earnings' (also called 'the Distribution of Earnings Review'), the Earnings Analysis branch developed a framework for labour cost statistics to identify the interactions, linkages and potential uses that can be made of the data. The branch published 'A framework for labour cost statistics' which draws together the needs of stakeholders to explain why the current set of data is collected. Requirements for data that are not met by the current set are also identified.

While the overall picture of earnings from the data sources is similar, there are important inconsistencies that arise because the data are collected through different channels and summarised using different methods.

This article reports on a study that draws together these various sources of UK earnings data for comparison at the macro level, to investigate their similarities and inconsistencies. The work highlights the need to bring sources together to enhance analytical capability and gain greater understanding of the coherence between data sources. As a result, one of the main objectives of the Earnings Analysis branch over the past year has been to link data sources at the micro level to provide a more comprehensive picture of labour costs. The findings of two linking projects are described here, along with their relevance for data collection and labour market analysis.

Earnings Analysis branch is also carrying out validation studies on individual datasets. These results are preliminary and so not reported here, but early indications are that even small changes in estimation methods can have a significant role in explaining the difference in, for example, low pay estimates. These results will be published later in 2007.

Comparison of data sources

Similarities

The main sources of earnings information collected by ONS are:

- the Annual Survey of Hours and Earnings (ASHE) (previously the New Earnings Survey (NES))¹
- the Monthly Wages and Salaries Survey (MWSS)²
- the Labour Force Survey (LFS)³

ASHE and the MWSS produce earnings information as their primary focus, while the LFS considers earnings as part of a much broader survey. In addition, there are also various supplementary sources that contain information on earnings. However, these are only used to provide auxiliary information for analysis, because earnings are not comprehensively covered in these surveys and may therefore not be produced to the same standard.

Sources often provide overlapping information on earnings so they would be expected to produce similar results where this is the case. For example, most sources provide information on earnings at the individual level. However, the MWSS and the National Accounts provide information at the organisational and aggregate economy level respectively.

Data are frequently broken down by personal characteristics. Sex, age, occupation and full-time/part-time status are popular categories for all of the data sources. However, household surveys generally expand on this to provide richer personal information because the nature of the survey allows them to approach individuals directly. ASHE, being sourced from pay records, has much more limited personal information, while the MWSS is unable to collect any personal information because it is based at the organisational level.

Earnings sources also break down the data by company information, such as industry, location and company size. These data are equally covered by both employee and employer surveys. However, the latter is believed to be more reliable because it is collected directly from the employer. As such, any discrepancies between datasets tend to be resolved in favour of the employer-provided data.

Inconsistencies

Despite similarities in the type of data that are collected, the different nature of the surveys will lead to inconsistencies in the results. In fact, inconsistencies can arise in the sources of data, the way that data are analysed, and the way the results of surveys are aggregated to produce estimates for the macro-economy. These three areas of inconsistency are now assessed in more detail, concentrating on the main data sources.

Differences in the level of earnings: weekly earnings

The most striking inconsistencies are created between employer and household surveys. Employer surveys, such as ASHE, are considered more reliable because they gain access to precise wage figures through payroll records. Household-based surveys, such as the LFS, are less likely to be based on payroll records, and hence are more likely to be subject to a variety of recollection and measurement errors. In addition, proxy responses might be used to collect the data indirectly through other members of the household. This approach accounts for about 30 per cent of responses and may reduce the reliability of the results. There is also a fundamental difference across the two surveys in the information they collected on hours worked. As ASHE information is provided from employers, information will relate to contracted hours. The LFS asks respondents for information on the hours they have worked, which will not always be the same as their contracted hours. Hence ASHE and the LFS measure different concepts on the hours of work.

The NES, forerunner to ASHE, was seen as more reliable relative to the LFS because it used employer data retrieved from payroll records. However, it also suffered from limitations because it excluded individuals who were under the tax threshold. A large proportion of this category are likely to be part-time workers who earn a low hourly pay and will therefore lead to overestimated results. In addition, individuals who moved employers more frequently were more

likely to be missed. ASHE was designed with two supplementary samples to overcome these issues.

Mean and median weekly earnings information can be obtained from ASHE, the MWSS and the LFS. The figures are displayed in **Table 1** below along with some other ad hoc supplementary data sources. However, the majority of supplementary sources, such as the Family Resources Survey, cannot be quoted because the information is collected in bands rather than absolute figures. Where possible the median is used as the main measure because it is not biased by large outliers at the top of the distribution.

The LFS only publishes results for full-time employees and therefore comparable data have been provided for ASHE. It should be noted that this will increase the median figures because pay is generally lower for part-time employees. An additional issue for consideration is the different definitions used to categorise individuals as full or part time across the surveys. There is no agreed international definition as to the minimum number of hours in a week that constitute full-time or part-time work and the approach differs depending on the data source used. The LFS asks people to classify themselves as either full time or part time, based on their own perceptions. In ASHE, individuals are classified as part time if they work less than 30 hours per week.

The most significant results from the table are the consistently higher estimates of gross weekly earnings produced by ASHE, in comparison with the LFS, when considering full-time employment.

Table 1
Gross weekly earnings from various sources

Source	Year	All Median	Males Median	Females Median	All Mean	Males Mean	Females Mean
ASHE FT ¹	2004	420	460	357	499	549	417
	2005	431	472	372	517	569	436
ASHE Total ²	2004	346	435	259	414	514	309
	2005	350	440	268	423	526	320
LFS ³	2004	380	420	323	451	438	374
	2005	385	423	335	465	508	334
MWSS ⁴	2004	-	-	-	369	-	-
	2005	-	-	-	384	-	-
HMRC ⁵	2003–04	-	-	-	393	-	-
EFS/FES ⁶	2003–04	-	-	-	277	-	-
SEH ⁷	2002–03	358	-	-	506	-	-

Notes:

- Not possible – no data available
- 1 ASHE excluding part-time workers.
- 2 ASHE including part-time workers.
- 3 LFS quarterly adjusted, using quarter 2.
- 4 AER – April 2004, whole economy.
- 5 Total annually earned income divided by 52.2.
- 6 One adult non-retired household.
- 7 England, annual income divided by 52.2.

The results indicate that the introduction of advanced surveying techniques to improve coverage of the low paid has not materially changed this picture. This difference has been widely noted, but there has been little work to explain it until now. This is discussed below.

A second important issue is the low estimate of earnings produced by Average Weekly Earnings (AWE). AWE is a monthly measure of average weekly earnings per employee and is calculated from the MWSS. A like-for-like comparison cannot be made with the LFS because AWE is based on both full-time and part-time employees. However, the difference between the two measures, if anything, will be wider if they covered the same sampling frame because of the nature of part-time earnings. Conclusions regarding the reasons for these low estimates are still to be reached; however, its survey design offers various potential explanations. For example, AWE calculates bonuses differently from ASHE, and a small role might be played by the fact that AWE adds weights to third and subsequent jobs.

HMRC is the only supplementary source in the table that provides comparable results with the main data sources. The low estimate provided by the Expenditure and Food Survey (EFS) is not directly comparable because it surveys total household earnings and so this figure is only based on households with one member. In addition, the Survey of English Housing (SEH) is likely to overestimate earnings, because it is based on total income, which includes things such as social security benefits and interest on savings.

Due to these comparability issues, the supplementary sources are not discussed in further detail.

Table 2 and **Table 3** show ASHE and LFS earnings broken down by industry and occupation respectively.

ASHE earnings data broken down by industry still provide consistently higher estimates in comparison with the LFS. In addition to the comparability problems noted above, differences arise in the allocation of industries despite the fact that they use the same classification system (the Standard Industrial Classification). Differences may arise because the LFS is based on self-reporting. It asks employees to report the main activity of the organisation they work for so that the survey can use this information to classify their industry. The problem with this approach is that respondents may not always give an

Table 2

Gross weekly earnings from ASHE and the LFS: by industry

Mean, full-time employees	ASHE		LFS	
	2004	2005	2004	2005
All employees	499	517	451	465
Agriculture and fishing	386	398	294	334
Construction	506	527	456	453
Hotels and restaurants	319	325	360	362
Transport and communications	495	507	441	461
Banking, finance and Insurance	669	693	573	572
Public administration, education and health	491	516	453	468
All services	501	520	453	464

Table 3

Gross weekly earnings from ASHE and the LFS: by occupation

Mean, full-time employees	ASHE		LFS	
	2004	2005	2004	2005
All employees	499	517	451	465
Managers and senior officials	736	776	658	685
Professional occupations	670	708	642	650
Associate professional and technical	532	548	485	500
Administrative and secretarial	344	352	319	336
Skilled trades	421	432	382	390
Personal services	292	300	262	262
Sales and customer services	283	284	268	269
Process, plant and machine operatives	380	396	349	359
Elementary occupations	307	314	272	288

accurate description of their organisation's main activity. In contrast, ASHE uses employer information to assign all the employees of a company to the industry that is most prevalent within that company. For example, everyone who works in a local authority is assigned to the education sector as this is the main activity of most local authorities. For private sector companies, the industry classification is assigned to the area of activity that accounts for the largest share of the organisation's turnover.

Earnings data broken down by occupation, provided in Table 3, give a more consistent picture across the two surveys. In comparison with industry data, this might be because respondents in the LFS are more likely to describe their own job accurately (which is used to classify their occupation) than they are to give an accurate description of their organisation's main activity (which is used to classify the industry).

Differences in the derived results: low pay

ONS's low pay estimates are counts of the number of jobs paid below the NMW.

Table 4 provides estimates of low pay for 1999–2005 from a number of different sources.

Before 2004, the National Statistic for the estimate of low pay was the central estimate, calculated by averaging NES and LFS

estimates. The central estimate was seen as a way of balancing the limitations of both the LFS and the NES, as noted above, to provide more reliable results.

In 2004, the ASHE survey was introduced to replace the NES, to improve on the representation of the low paid using two innovations. First, the sample was supplemented by including employees in businesses outside the PAYE system, that is, by selecting VAT-only businesses from ONS's Inter-Departmental Business Register (IDBR). Second, the ASHE/NES sample was taken in February, which excluded individuals from the analysis who moved during the time the sample was selected and the survey date. ASHE improved coverage of these mobile workers (who are more likely to be low paid) by taking a later sample to catch the leavers and joiners. Weighting and imputation also improved ASHE outputs relative to the NES. As a result, the ASHE estimate of low pay became the National Statistic, with the LFS running alongside as a source of complementary information on personal characteristics of the low paid.

Since 2004 the LFS has seen improvements of its own. For household surveys, stated hourly rates are more reliable than hourly rates derived from total earnings and hours worked (the derived rate), due to reporting errors. This can

Table 4

Jobs paid below the NMW for individuals aged 18 and over: by estimate method

Percentages

	LFS 2002 method	LFS 2005 method	ASHE	NES	Central
1999	2.2	-	-	2.1	2.2
2000	1.0	-	-	1.0	1.0
2001	1.1	-	-	0.9	1.0
2002	1.5	-	-	1.2	1.4
2003	1.0	-	-	1.1	1.0
2004	1.2	0.7	1.0	1.0	1.1
2005	1.7	1.1	1.2	-	-

Note:

- Not possible – methodology not applicable

be clearly seen in the LFS data, because derived rates of hourly pay have a much wider distribution than the stated rates and are less plausible. Regardless of this, stated rates were only collected for employees in their first job before 2004, which meant any measure of low pay for second jobs had to be calculated using the derived rate.

In 2004, the LFS introduced an additional question to include stated hourly pay for second jobs. In Table 4, the second column shows the LFS estimates calculated using the amended methodology. It shows that the LFS and ASHE estimates have now converged to provide more consistent results and that the new LFS figures actually report lower estimates of the low paid in comparison with ASHE.

There has been some preliminary work, to be published this year, indicating that the remaining differences between the new LFS methodology and ASHE are largely down to the measure of hourly pay used. When ASHE is calculated using the same methodology as the LFS, that is, using a combination of the stated and derived rate, the difference between the two measures is minimal; the investigation therefore reconciles the difference between ASHE and the LFS low pay estimate. Nevertheless, these are only preliminary results, so further work is needed in this field to validate these claims.

Differences in the aggregated results: the macro-economy

National Accounts figures are currently derived independently from labour market statistics and an inconsistency was therefore expected. The Productivity Economics branch in ONS has investigated the inconsistency between the National Accounts whole economy wage bill and other sources of labour market statistics.

This work involved comparing the derived whole economy wage bill from the variety of sources above to the National Accounts figure. Key results were:

- ASHE-derived figures consistently overestimate the wage bill compared with the National Accounts figure
- the LFS- and AWER-derived figures consistently underestimate the wage bill compared with the National Accounts figure
- the additional supplementary sample that was introduced in the ASHE survey in 2003 brings ASHE and National Accounts figure closer, although it is still too early to determine if the same impact will occur for the subsequent years

A similar result was found by looking at quarterly figures from the LFS and AWER.

Hence, the National Accounts figure lies between the household and employer survey estimates. This may be because, while the raw earnings data in National Accounts are similar to ASHE as both are derived from employers, the aggregate wage bill is weighted to LFS jobs.

Linking data sources

Given that there are inconsistencies between the data sources on earnings, it has become apparent that linking these sources could prove fruitful in a number of ways. Linking earnings data sources at the macro and micro level will help to validate the different sources and act as a quality control check. In addition, it will also provide a larger dataset to broaden analysis. Data linking between household and employer surveys is seen as particularly important because their strengths lie in different areas. However, some of these

very inconsistencies mean that linkages may be hard to establish. A feasibility study was therefore carried to assess whether data linking could take place.

Feasibility study

The first part of the feasibility study is outlined in 'Linking earnings data: Methods'. It looks into the different methodological approaches that can be used to link datasets. The four main methods are:

- direct record linkage – this is the optimum form of linking and can take place when there is a unique error-free identifier attached to each record in each dataset from the same population
- probabilistic record linkage – this is an imperfect method used when there are errors in identifiers, such as spelling mistakes, but given they come from the same population, they can be matched with a given degree of certainty
- data fusion/statistical matching – datasets from different populations or with no identifiers, for example, can use this approach to achieve a merged dataset, based on 'representative' individuals with similar characteristics, rather than linking specific individuals, and
- cell group linking – this method creates matching groups of representative individuals. It is therefore a generalisation of data fusion based on groups rather than individuals

These methods were then assessed against a number of projects in a feasibility study entitled 'Linking earnings data: Benefits of linking and possible projects', in order to establish the benefits and practicalities of merging specific datasets. All the projects were supported by the main users of earnings data, with the view that they would help develop the analytical capabilities in this area.

The linking projects fall into three broad categories:

- linking supportive information on companies to earnings information, to allow analysis of company characteristics and attitudes towards pay
- linking employer- and employee-provided earnings information. This would combine the more reliable data from employers with the more extensive coverage of personal characteristics from the employee surveys, and

- linking supportive information on personal characteristics to earnings information. This is a similar approach to the one above, but uses other supportive information, for example the UK Census, to link to employer surveys

The feasibility of the projects was then assessed against criteria such as the extent of benefits, ease of obtaining data, known difficulties and methodological opportunities.

The ASHE-IDBR linking project under the first category above was chosen as a study into direct linkage. This project proved enlightening because it allowed analysis of company attitudes towards the NMW. The IDBR could be accessed with immediate effect and provided a good likelihood of matching against the MWSS as well.

The ASHE-LFS linking project under the second category above was carried out to investigate data fusion techniques. Data availability for this project allowed the work to be initiated immediately and the methodological approaches developed in the investigation can be utilised in other areas in the future.

The third project relies on the experience gained in the first two projects. With the success of these, the Earnings Analysis team is now evaluating a wider range of linking projects for feasibility in this area (see below). The next sections describe the projects and main findings.

Linking earnings and firms: the ASHE-IDBR project

The purpose of the investigation was to provide a linked dataset by merging employer information from ASHE with information on companies from the IDBR. The resulting dataset could then be used to examine how companies set wage policies at the lower end of their pay scale, given changes in the minimum wage. This is an important area of investigation because previous analysis has focused on pay from the viewpoint of the worker and ignored the behaviours of company policies. The initial investigation exploited a variable unique among large scale datasets to examine the changing wage for a job. The second part of the investigation linked employer and employee data together to look more broadly at how and if companies' wage policies respond to changes in the NMW.

The investigation concluded that there are strong company effects that influence wage-setting policies. Rather than setting wages equal to the marginal cost of labour, companies are also employing a relatively

simple rule-of-thumb approach for wages around the NMW. The main findings of the investigation are:

- there is evidence that, as the NMW increases, the salaries of all low-paid individuals increase by much the same amount regardless of their distance from the minimum wage. This effect is known as relocation, and is counter to compression, which occurs when an increase in the minimum wage has no effect on wages above the new level, but raises those below it just up to the new NMW
- the investigation introduces the concept of the Company Minimum Wage (CMW), that is, the minimum wage paid by a particular company in a particular year
- there is evidence to suggest that these CMWs are set relative to 'focus' points, such as £5.00, £5.50, despite the fact that the NMW does not reflect these round numbers. This suggests firms have some flexibility in the way they set wages and they are not wholly driven by the NMW
- this preponderance of 'focus points' continues up the wage distribution, and is observable up to 80 per cent over the minimum wage
- there is evidence that companies prefer to maintain wage differentials relative to general labour market conditions. The NMW contributes to the absolute level of wages, but is not the only or the dominant factor
- a brief examination of industry differences suggested that the numbers might differ but that the story remains broadly the same

More generally, the linked employer-employee dataset used in this investigation provides a substantial research resource. Although the linked ASHE-IDBR dataset is not a full rectangular one (all employees linked to all firms), there has been considerable interest in the academic community and government. The linked dataset is in the process of being documented and released to the research community through ONS's Virtual Microdata Laboratory (VML).

Linking employer and employee data: the ASHE-LFS project

This project links the ASHE and LFS datasets. ASHE and the LFS represent the main sources of earnings information in the UK and form the basis for most micro- and

macro-level analysis of the labour market. Linking the two datasets is an important development for earnings analysis because the two sources do not provide a single view of the labour market. The two surveys are designed for different purposes and use different surveying techniques (and sometimes use different concepts and definitions) that lead to inconsistencies, as outlined above.

Unfortunately, there is little overlap between the two surveys (theoretically only 1 per cent of the LFS sample should be found in ASHE) and they do not share a common direct identifier. As a result, direct record linking cannot be employed to merge the two datasets. The investigation employs a grouped cell method to create a linked dataset that contains properties of both data sources, which can still be analysed relatively robustly. The resulting dataset has two aims:

- to test statistical properties of the combined variable set so that more detailed models may be drawn, and
- to analyse the dataset in its own right

The central result of the investigation indicates that the ASHE and LFS datasets are more consistent with each other than previously thought. More specifically, gross weekly pay stands out as being particularly well-related across the two surveys and across a large proportion of the distribution. This is a welcome result because access to ASHE is limited for non-government-based users and therefore the LFS is used a good deal for academic research. Researchers should therefore be more confident using the LFS as an unbiased estimate of ASHE and the fact that results are not affected by data collection methods. Any inconsistencies that do exist between the two datasets tend to be focused around the top and bottom end of the distribution. This is based upon looking at comparable groups. Differences appear in the broad aggregates because of differences in coverage; in particular the smaller sample size of the LFS appears to lead to poor representation of some population groups.

To some extent, this finding eliminates the need for further evaluation of earnings using a linked ASHE-LFS dataset; the LFS alone may be good enough to examine characteristic breakdowns that are not averaged on ASHE. However, further analysis of ASHE earnings data using LFS breakdowns suggests this might not be the case for certain characteristics. Ethnicity, for example, is based on small sample

sizes in the LFS and it is not possible to make reliable inferences from this data. Therefore estimates of earning distributions by personal characteristics are more robust for categories that have larger sample sizes across the whole range of potential values, such as skill.

The way forward

The ASHE-IDBR and ASHE-LFS linked datasets

For both the linked datasets, the plan is to release them to researchers. ASHE-LFS work shows this link is less important, but releasing the datasets to researchers will enable the conclusions presented here to be tested more thoroughly by external experts. There is considerable interest in the ASHE-IDBR linked dataset, as it can be used directly in conjunction with other ONS business data (already linked to the IDBR), and some work has already been carried out in this area.

Both datasets will be released in ONS's VML. This is an extremely secure research facility available at ONS sites and other selected locations, which is designed to give maximum access to data consistent with a strict confidentiality regime.

The linked ASHE-LFS dataset does not pose any particular confidentiality problems, as data items are created based upon statistical characteristics and do not increase the identification risk for any individual in either survey. The ASHE-IDBR link does increase the potential for re-identification of firms or workers, but this is manageable within the existing VML framework. No additional confidentiality concerns are therefore likely to arise as a result of releasing these datasets.

Further linking

Following the success of the first two linking projects, additional projects are now being considered. The first to be pursued is a feasibility study into the ways that ASHE, the Census, the National Pupil Database and the LFS might be usefully combined. For example, ASHE and Census data linking could provide further breakdowns of ASHE data by personal characteristics. Since individuals in ASHE should also appear in the Census, direct linkage may be possible. However, difficulties in identifying matching individuals may mean data fusion techniques need to be employed.

JUVOS is a longitudinal database of statistics on claimant unemployment and merging it with ASHE will help to analyse the link between earnings and employment. A common identifier and sample should make this a more robust link.

Other earnings projects

Away from data linking, a project on the earnings of the self-employed is being pursued. This area has received little coverage in the past and is limited by a lack of clarity over its definition. However, if this problem and others can be overcome, then the project should help to create a more complete picture of earnings in the UK.

Conclusion

This article has reviewed a number of projects carried out over the past eighteen months. These have produced a number of important results, both in relation to the datasets involved and in the understanding of the UK labour market.

Although many of the results from the work programme focus on low pay, the methods and analyses have a wider importance. These are being expanded upon in the current work programme to study the relationship between earnings and self-employment, unemployment, educational attainment, and so on. The results of these will be discussed in the 2008 'Earnings: Summary of sources and developments' publication.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Bird (2002) 'Review of distribution of earnings statistics (National Statistics quality review series, report no. 14)' at www.statistics.gov.uk/methods_quality/quality_review/downloads/DOER_Final_Report.doc

Lam K, Ormerod C (2005) 'Linking earnings data: Methods', mimeo, Office for National Statistics

TECHNICAL NOTES

1 ASHE is a survey of employers requesting individual level information about their employees. The survey is a 1 per cent sample of employees on the Pay As You Earn (PAYE) register. Employers are asked to provide information on the hours and earnings of their employees. ASHE is a new survey that has been developed to replace the New Earnings Survey (NES) since 2004 to include improvements in the coverage of employees and to the weighting of earnings estimates. The data variables collected remain broadly the same, although an improved questionnaire was introduced for the 2005 survey.

2 The Monthly Wages and Salaries Survey (MWSS) is a questionnaire sent to a sample of businesses on the ONS business register. This sample usually comprises 8,600 companies which are then split into public and private sector and then by industrial classification. The companies are then split into bands dependent on the number of employees. All companies in the largest bands are sampled and a random sample is taken from companies in the smallest bands. Companies with fewer than 20 employees are not included. Information is collected on the total wages and salaries bill of employers; details about individuals are not collected. The purpose of MWSS is to provide the base data for the calculation of short term indices of earnings.

3 The Labour Force Survey (LFS) is an annual survey of households in the UK. The survey collects information about the household members and their characteristics. As well as earnings information, the survey includes questions on household members' jobs, employment pattern, sickness, benefit entitlements and health.

Lam K, Ormerod C, Ritchie F, Vaze P (2005) 'Do company wage policies persist in the face of minimum wages?', *Labour Market Trends* 114(3), pp69–82 and at www.statistics.gov.uk/articles/labour_market_trends/minimum_wage.pdf

Lau E, Porcu S (2005) 'National Accounts' Compensation of Employees: a comparison with Labour Market Statistics', mimeo, Office for National Statistics

Ormerod C (2005) 'LFS low pay estimates: Method of dealing with second jobs', *Labour Market Trends* 114(7), pp233–9 and at www.statistics.gov.uk/downloads/theme_labour/LMT_July06.pdf

Ormerod C (2005b) 'Linking earnings data: Inconsistencies and similarities between different sources', mimeo, Office for National Statistics

Ormerod C (2006) 'A framework for labour cost statistics', *Labour Market Trends* 114(6), pp203–11 and at www.statistics.gov.uk/downloads/theme_labour/LMT_Jun06.pdf

Ormerod C (2006) 'Earnings data: A brief guide to sources and outputs', *Labour Market Trends*, 114(11), pp389–96 and at www.statistics.gov.uk/downloads/theme_labour/LMT_Nov06.pdf

Ormerod C (2006) 'Earnings data: Sources and outputs' at www.statistics.gov.uk/articles/nojournal/1639.pdf

Ormerod C (2006) 'Linking ASHE and LFS: Can the main earnings sources be reconciled?', mimeo, Office for National Statistics

Ormerod C (2006) 'Linking earnings data: Benefits of linking and possible projects', mimeo, Office for National Statistics

FEATURE

Catherine Barham and Nasima Begum
Office for National Statistics

Time series analysis of the Labour Force Survey longitudinal data sets

SUMMARY

This article gives some background to how the Labour Force Survey longitudinal data sets are constructed and looks at the benefits of this data source in analysing changes over time. The strength of the data is in looking at the flows of people between the three main economic activity states and this provides the main focus for the article. Changes in the proportions remaining in the same categories over the two time periods, along with changes in the size of the flows between the three main categories are investigated, and some broad conclusions drawn about their causes. Some background is also given to the methodological issues which users should be aware of when using the longitudinal data sets.

The structure and design of the Labour Force Survey (LFS) enables the production of longitudinal data sets linking individuals over two and five quarters. Although the LFS was not designed as a longitudinal survey, the panel design means that respondents are interviewed up to five times, at intervals of three months, with a fifth of the sample being replaced each quarter. While the main headline figures produced from the LFS are cross-sectional, this potential for linkage has meant that longitudinal data sets have been produced from the LFS every quarter since 1993.

One of the most important uses of these data sets is to enable analysis of movements between the three main economic activity categories of employment, unemployment and inactivity. Cross-sectional estimates of the stocks of the employed, unemployed and inactive only show the net flows between these three categories. With the longitudinal data, however, it is possible to look at the full picture of the gross flows into and out of each category. For example, while the cross-sectional data show that the number in employment fell by 67,000 between summer and autumn 2005 (working age, not seasonally adjusted), the longitudinal data show around one million people

moving between employment and either unemployment or inactivity. Thus the net flow is the outcome of much larger gross flows.

This article presents a range of time series analysis of gross flows from the two-quarter longitudinal data sets, covering the time period winter/spring 1993 to autumn/winter 2005. Flows into and out of the three main categories of employment, unemployment and inactivity are looked at in more detail in order to illustrate the use of these data sets for analysing changes in the labour market over time.

People remaining in the same state

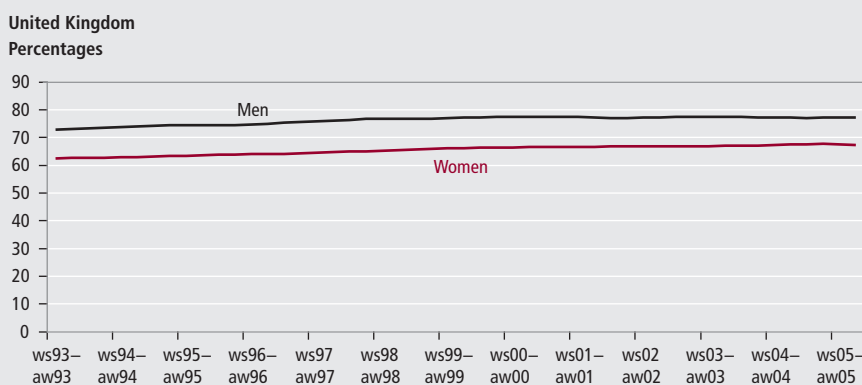
The linking variable which records the changes in state for respondents between one quarter and the next has nine possible combinations using the three main economic activity states. Three of these combinations include those people who are recorded as being in the same economic activity state at both interviews. Users should note that this does not necessarily mean that the respondent has not changed state, as it is possible that a change may have occurred, but, at the time of the LFS interview, the individual had returned to their original state.

Figure 1 shows the proportions of men and women remaining in the same state between one quarter and the next between winter/spring 1993 and autumn/winter 2005. Seasonal variations in the proportions remaining in these categories or moving into and out of different categories are not very apparent when only looking at employment, but become more of an issue when looking at those remaining in inactivity. It is for this reason that the data presented in all the figures in this article are averages of groups of flows from consecutive data sets. In this case, the figures are moving averages over four quarters, so figures contain information over a full year. The labels on the figures reflect this – for example, winter/spring 93 to autumn/winter 93 is the average of the quarterly results from the four following data sets: winter/spring 1993, spring/summer 1993, summer/autumn 1993 and autumn/winter 1993.

The proportion of men and women who remained in employment has increased steadily over the period. In winter/spring 1993, 72.9 per cent of men and 61.4 per cent of women remained in employment, compared with 77.3 per cent of men and 67.1 per cent of women in autumn/winter 2005. This increased probability of being in employment in both quarters reflects the increase in employment rates which has occurred over the period, rising from 70.3 per cent in spring 1993 to 74.5 per cent in autumn 2005. More details of the overall increase in employment rates can be found in *Labour Market Review* at www.statistics.gov.uk/labourmarketreview/. The increased probability of men and women remaining in employment in both quarters as shown in this graph could, therefore, reflect the probability of job loss having declined over recent years. Equally, it could

Figure 1

Men and women of working age in employment over two quarters: moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

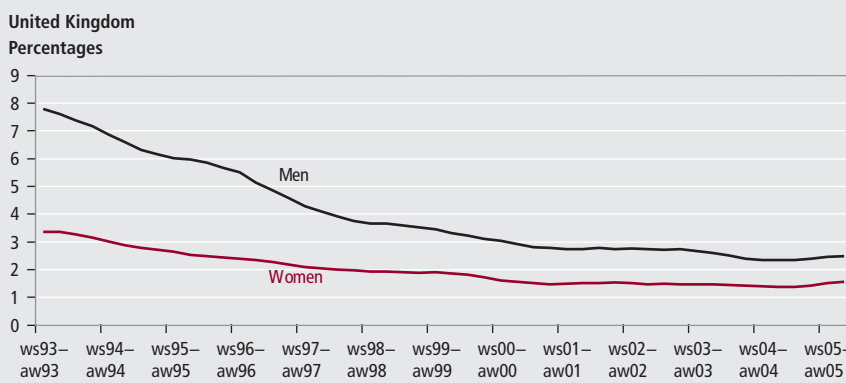
reflect an increased probability of people finding a new job more quickly after a job loss, which seems likely in a period when unemployment has fallen by nearly a half.

Figure 2 shows the proportions of men and women remaining unemployed over the two quarters between 1993 and 2005. This shows a fairly sharp decline in those

remaining unemployed over the period, from 8 per cent of men and 3 per cent of women in 1993 to 2 per cent of men and 1.5 per cent of women in 2005. This decline reflects wider changes in unemployment over the period which have seen unemployment rates fall from a peak of 10 per cent in 1993, following the recessions

Figure 2

Men and women of working age unemployed over two quarters: moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Box 1

Methodological issues relating to the longitudinal LFS data sets

In the process of researching the feasibility of producing the longitudinal LFS data sets, two main methodological issues were identified that could effect the quality of the data. These were non-response error bias and response error bias and are explained below.

Non-response error bias

Non-response bias arises because different groups of people have different probabilities of dropping out of the survey between interviews. Flows are currently adjusted for non-response bias through calibration weights, which are included in the longitudinal data sets, and are also used to weight estimates to UK population totals.

Response error bias

Response error bias arises because, for reasons such as misunderstanding or lack of knowledge, respondents may give incorrect answers to questions. Further details on possible ways to estimate response error bias, including using re-interview surveys, are given in an article in *Labour Market Trends*, July 2006. Users need to be aware of these issues when using the longitudinal data sets. Despite this, estimated changes in the LFS gross flows over time are thought to be largely free from any bias and these are the flows presented in this article. The reason for this is that the effects of the response bias on point-in-time estimates of gross flows should vary only slightly from time period to time period.

in the early 1990s, to just over 4 per cent in 2005. Interestingly, this fall in the rate for people remaining in unemployment is proportionately greater than the overall fall in the cross-sectional unemployment rate over the period, which could be reflecting a reduction in the overall duration of unemployment.

Figure 3 completes the picture and shows the proportions remaining in inactivity between two quarters since 1993. This graph shows a less dramatic pattern than the previous two but nevertheless indicates that there has been a fall in the proportion of women remaining in inactivity and an increase in the proportion of men. Once again this reflects the broad changes in the labour market as indicated in the cross-sectional LFS data over time, which show a clear convergence of the inactivity rates for men and women.

In addition to the flows between the three main economic activity categories, the longitudinal data sets include the majority of the variables included on the cross-sectional LFS data sets. This enables a range of analysis, one example being the variable which gives the main reason given by the respondent for being economically inactive. **Figure 4** shows those remaining in inactivity by their reason for inactivity, which gives some indication of whether there are certain groups who are experiencing more change compared with others. As the graph shows, there has been an increase in the proportion of students who are remaining in inactivity since the early part of this century, and a decline in the proportions of people who remain in inactivity due to looking after the family or home.

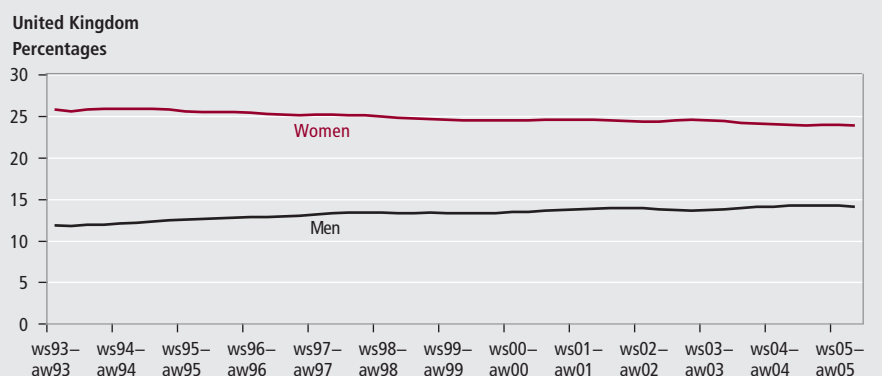
Looking at the proportions of people who have remained in the same economic activity status between the two LFS interview periods, it is clear that the vast majority of people do not change their status between waves. In 1993, the proportion remaining in the same state was 92.5 per cent and in 2005 it was 91.9 per cent. Despite this, one of the strengths of the longitudinal data sets is their ability to look at some of the transitions between different states, as these can give some insights into the flows which contribute to the overall numbers in each state.

Flows out of employment by age

Figure 5 shows the movements from employment into unemployment for men by age between winter/spring 1993 and autumn/winter 2005. The line showing the overall

Figure 3

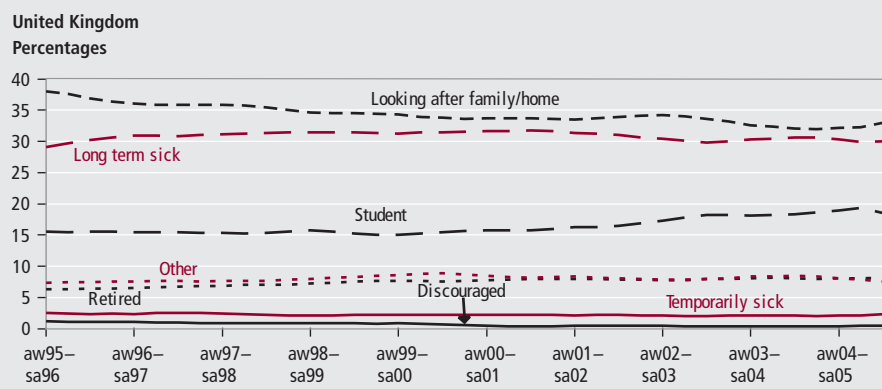
Men and women of working age remaining in inactivity over two quarters: moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 4

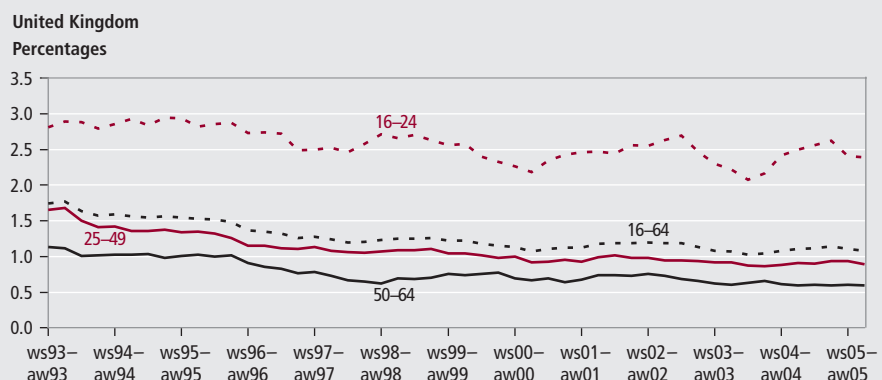
Proportions remaining in inactivity: by reason for inactivity over two quarters, moving average, autumn/winter 1995 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 5

Men moving from employment to unemployment: by age: moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

trend for men of working age (16 to 64) indicates that there has been a decline in the proportions moving, from an average of 1.7 per cent of all men of working age in the first four quarters of 1993 to an average of 1.1 per cent in 2005. What is also clear is that the age group with the highest

transition rate is that of 16 to 24 year olds, with a rate of 2.4 per cent in 2005. The 25 to 49 and 50 to 64 age groups have followed the overall downward trend over the decade or so and this is likely to be linked to the shrinking size of the group of people classified as unemployed over this period.

Figure 6 shows the transition rates for women from employment to unemployment by age. This shows a fairly stable picture, with only a slight decline in the rates for all women of working age, from

1.0 per cent in the first four quarters of 1993 to 0.8 per cent in 2005. As with males, the age group who are the most likely to move from employment into unemployment are those aged 16 to 24. Looking at both figures

together (5 and 6), a further point to note is that men have slightly higher transition rates from employment to unemployment than women.

Figure 7 shows the transition rates for people moving from employment to inactivity between the two quarters. This shows that the rates are consistently higher for women than for men, particularly at the beginning of this time period, when women were roughly twice as likely as men to move from employment to inactivity. This is the opposite picture to the flows in Figures 5 and 6 between employment and unemployment. What is also interesting to note is that there appears to be a steady increase in the proportions of men moving from employment to inactivity, which ties in with the overall increases in inactivity seen for men since the early 1990s (see *Labour Market Review* Figure 5.1, page 36).

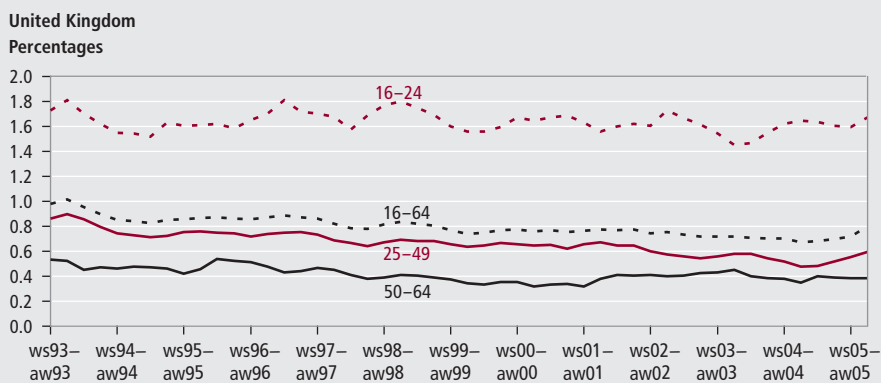
Flows into employment

Figure 8 shows the flows from unemployment into employment over two quarters, by sex. For both men and women, these flows have declined steadily over the period, although for men the decline has been greater, from an average of 2.0 per cent in 1993 to 1.2 per cent in 2005. Figure 9 shows the movements from inactivity to employment for both men and women. Clearly for men, the transition rates have been increasingly steadily since 1993, although there appears to be a slight fall in the rates for 2005. For women, there appears to be little or no change in the rates over the same period.

This pattern of declining flows from unemployment to employment for men, and, increasingly, flows from inactivity to employment, is interesting as, although the likelihood of moving from unemployment to employment is higher for men than moving from inactivity to employment, the stock of people who are inactive is so much greater than the stock of those who are unemployed. This means that the size of the flow of men from inactivity to employment is actually larger than the size of the flow from unemployment to employment. In addition, the two lines have been converging since the early 1990s. This means that although the rates of flow are different, in reality there is only a relatively small difference in the numbers of people entering employment from both unemployment and inactivity. For example, for men, from the last four linked data

Figure 6

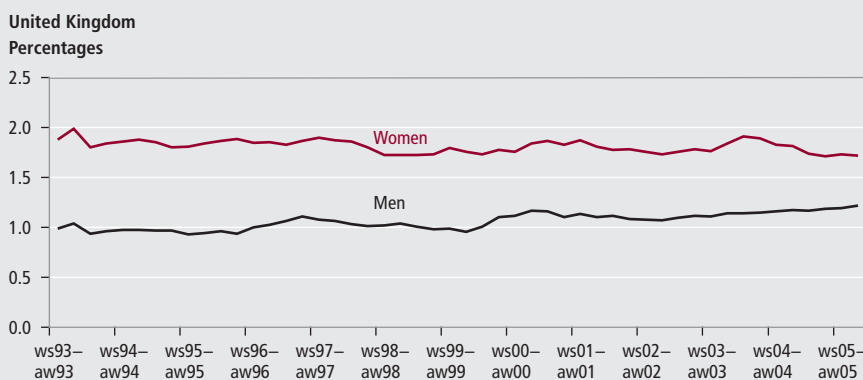
Women moving from employment to unemployment: by age, moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 7

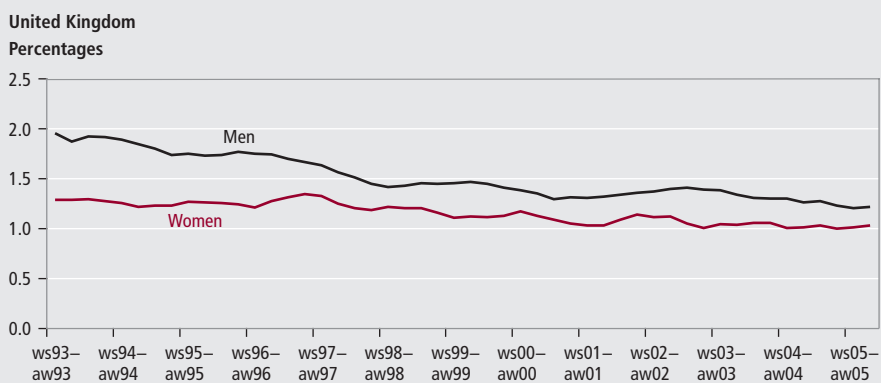
Movements from employment to inactivity: by sex, moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 8

Movements from unemployment to employment: by sex, moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

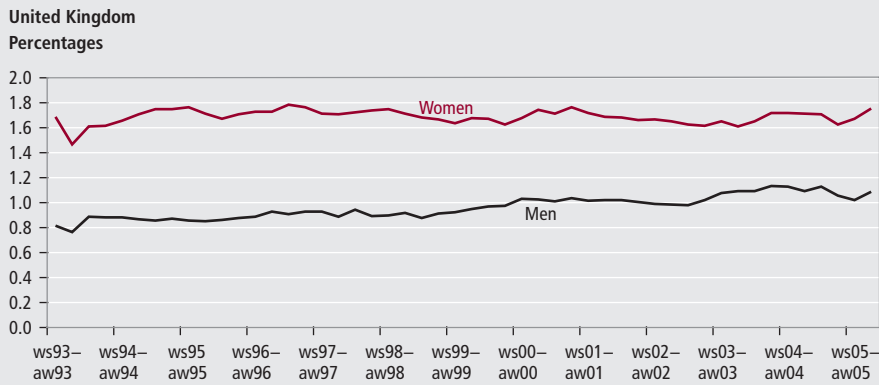
sets, the average inflow to employment has been 201,000 from unemployment and 164,000 from inactivity. For women, the inactive group provides the greater volume of inflows and so the average inflows for

the latest four data sets have been 181,000 from unemployment and 300,000 from inactivity. The declines in flows from both unemployment and inactivity for women over this period need to be considered in

the context of the increases in employment rates and declines in inactivity as these factors could well explain the changes seen in these flows.

Figure 9

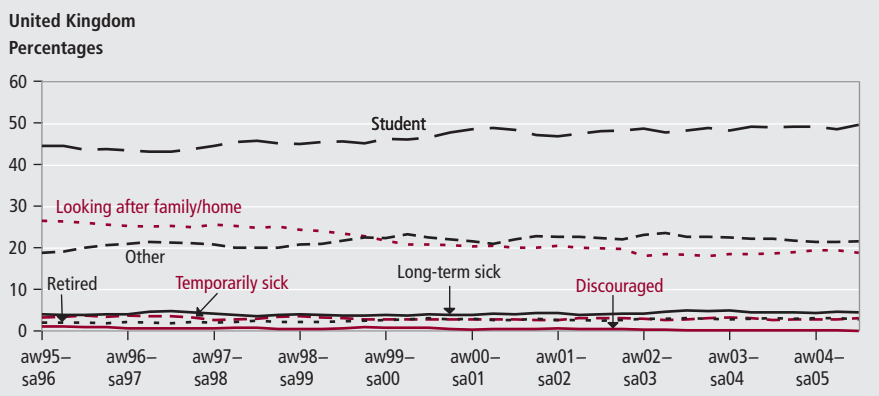
Movements from inactivity to employment: by sex, moving average, winter/spring 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 10

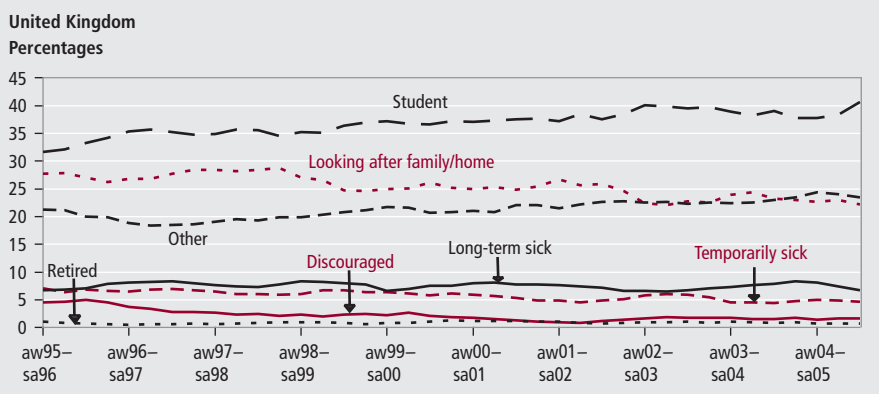
Proportions of people moving from inactivity to employment: by reason for inactivity over two quarters, moving average, autumn/winter 1995 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 11

Proportions moving from inactivity to unemployment over two quarters: by reason for inactivity, moving average, autumn/winter 1995 to autumn/winter 2005



Source: LFS longitudinal data sets

Flows out of inactivity by reason

Figure 10 shows the proportions moving from inactivity to employment by their reason for inactivity. Students form the largest group of people moving out of inactivity, making up about a half of all people in this category. What is interesting to note is that the proportion of people who moved into employment after being inactive due to looking after the family or home has declined over time and has been overtaken by the 'other' group, the composition of which is fairly heterogeneous.

Figure 11 shows the proportions moving from inactivity into unemployment over the two quarters, by their reason for inactivity. Once again, this shows that students are the most likely to move and, interestingly, this proportion has been increasing over time. The proportions moving from being inactive due to looking after the family or home to unemployment have declined over the period, whereas movements from those in the 'other' category have increased.

Flows for young people

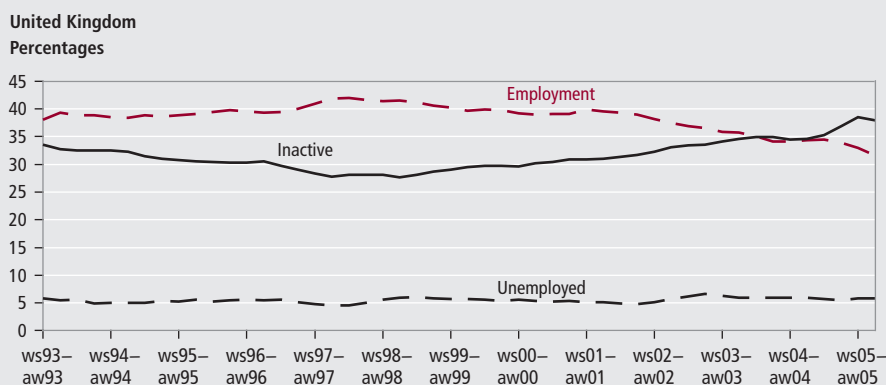
The figures above show some of the gross flows between the various economic activity categories and give some indication of the patterns in movements over the past decade or so. The longitudinal data sets can also be used to look in more detail at particular groups of people in order to get a better understanding of some of the trends which can be identified in the overall flows. In order to give an example of this,

Figures 12 and 13 show flows for those remaining in the same economic status for two quarters, for men and women aged 16 and 17. From the overall picture shown in the earlier figures, there appear to be some changes in the movements of this group over time. From Figure 12 which shows the flows for 16 and 17 year old men, it is clear that the main changes have been an increase in the proportions remaining in inactivity since 1993, increasing from 33.6 per cent to 38.0 per cent in the period winter/spring 2005 to autumn/winter 2005, and a corresponding decline in the proportions remaining in employment. A similar pattern is evident for women aged 16 and 17, as shown in Figure 13.

For young people aged 16–17, the proportions changing economic activity status over two quarters is relatively small.

Figure 12

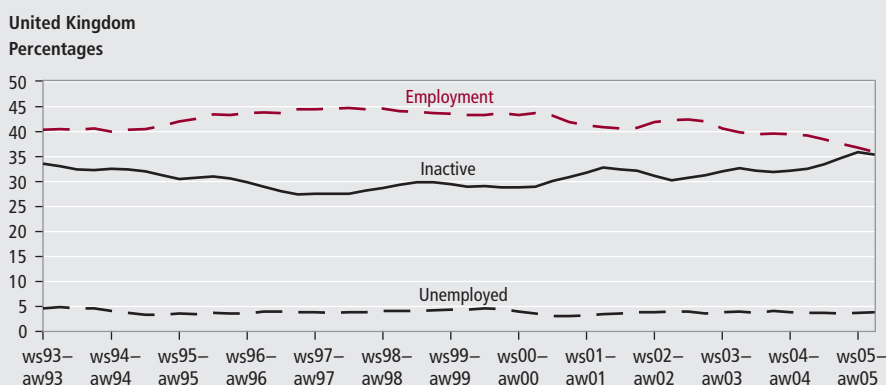
Proportions remaining in the same economic activity group over two quarters for men aged 16–17 years old, moving average, autumn/winter 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Figure 13

Proportions remaining in the same economic activity group over two quarters for women aged 16–17 years old, moving average, autumn/winter 1993 to autumn/winter 2005



Source: LFS longitudinal data sets

Conclusion

The aim of this article has been to give some background to how the longitudinal data sets are produced and to show some of their uses, looking at gross flows over time between the main economic activity states of employment, unemployment and inactivity. The patterns shown here generally reflect the changes which have been seen in the cross-sectional figures produced from the LFS, in terms of an increase in the overall employment rate, a decline in unemployment and a convergence in the proportions of men and women who are inactive. In addition, they give some insight into the size of the movements between categories which result in the levels shown in the monthly figures.

More information

If you have any comments or would like more information on the LFS longitudinal data, please contact Catherine Barham or Nasima Begum.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Brook K and Barham C (2006) 'Labour Market gross flows data from the Labour Force Survey', *Labour Market Trends* 114(7), pp227–32 and at www.statistics.gov.uk/cci/article.asp?ID=1597

Office for National Statistics (2006) *Labour Market Review*. Palgrave Macmillan: Basingstoke at www.statistics.gov.uk/labourmarketreview/

McIntyre A (2002) 'People leaving economic inactivity: characteristics and flows', *Labour Market Trends* 110(4), pp187–94 and at www.statistics.gov.uk/cci/article.asp?ID=224

Young M (2001) 'Time series analysis of the Labour Force Survey two-quarter longitudinal datasets', *Labour Market Trends* 109(8), pp399–405.

TECHNICAL NOTE

In 2006, the Labour Force Survey moved from collecting and producing figures on a seasonal quarter basis to a one which uses calendar quarters. This means that the first longitudinal data set produced for 2006 is for the period January to March 2006 rather than winter to spring 2006. Further work is planned to assess the impact of this change on the time trends which use longitudinal LFS data and, in the meantime, the figures in this article only cover data produced for seasonal quarters.

Methods explained

A quarterly series of short articles explaining statistical issues and methodologies relevant to ONS and other data in a simple, non-technical way. As well as defining the topic areas, the notes explain when, why and how these methodologies are used. Where relevant, we also point the reader to further sources of information.

House price indices of the UK

Sumit Dey-Chowdhury

Office for National Statistics

SUMMARY

There are a number of house price indices that measure the rate of inflation in the UK housing market. This article provides an overview of the three main UK house price indices published by the Department for Communities and Local Government, Nationwide and Halifax. It details how they are constructed and explains why differences can occur between these three measures. The article also covers the newly published Land Registry house price index and comments on its methodology.

The UK housing market is of interest to the public as changes in the price of houses significantly affect both homeowners and potential buyers. During the early 1990s, there was a prolonged recession in the housing market, followed by a recovery that led to high growth in the late 1990s; both of which received widespread media attention. More recently, rising house prices have focused attention on the difficulties faced by first-time buyers trying to enter the housing market. When setting UK interest rates, the Bank of England's Monetary Policy Committee takes into account the inflationary pressures on the economy as a result of the housing market.

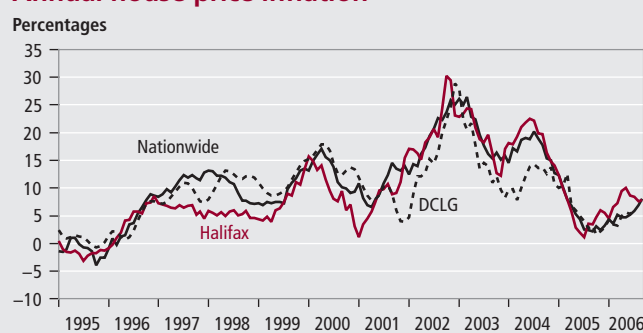
This article focuses on the methodologies of these three house price indices (Department for Communities and Local Government (DCLG), Nationwide and Halifax), specifically how the indices are constructed and what they are actually measuring. It summarises the methodological differences that exist and expands on some of the key concepts central to understanding house price indices. It explains why house price indices are not always consistent despite apparently measuring the same thing.

Methodologies

There are several approaches that can be taken to calculate the average rate of change in house prices. It is possible to create a simple house price index by calculating the average purchase price and converting it into an index. The three house price indices examined in this article all use more sophisticated approaches. These are illustrated in **Table 1**.

Table 1 presents a comprehensive analysis of the methodological differences that exist between these house price indices. The content serves as the structure for the rest of this article in explaining the differences that are observed in the measures of inflation, as illustrated in **Figure 1**.

Figure 1
Annual house price inflation¹



1 The DCLG house price index is only available as a monthly index dating back to February 2002. Figure 1 has been constructed by making use of the quarterly DCLG series that is available and applying a cubic spline function to interpolate a monthly series (and the resultant annual rate of inflation).

As can be seen in Figure 1, the rates of inflation that are inferred from the Nationwide and Halifax house price indices are broadly in line with one another (particularly since 1999), as the statistical techniques used are similar. However, there are marked differences with the DCLG index, particularly in the period from late 2003 to 2005.

The differences that are observed in Figure 1 could be caused by a variety of different factors affecting the construction of the index. These include:

- the composition of the sample used to obtain the price data
- the definition of price used in the respective house price indices
- variables used in the statistical model to estimate average prices
- the weights used for 'mix adjustment' and how they are applied
- whether the index is seasonally adjusted or not

The sample

The sample primarily refers to how the price data are collected that allow house price indices to be constructed. The samples used by Nationwide and Halifax are based on in-house mortgage data, which are essentially the number of new mortgage loans each building society makes. The DCLG index is based on data that are available from different mortgage lenders, collected by the Financial Services Authority (FSA). It is compulsory for all mortgage lenders to submit their data to the FSA.

Table 1
Summary of the UK house price indices

	DCLG	Nationwide	Halifax
Data	Data are available from 50 mortgage lenders (about a third of all purchase completions)	In-house mortgage origination data based on number of new loans written	In-house data based on mortgage approvals
Price definition	Purchase completion	Mortgage approval	Mortgage approval
Extent of cover	UK	UK	UK
Variables used to estimate property price	<ul style="list-style-type: none"> ■ Type of dwelling ■ Is the dwelling old or new? ■ Is the purchaser a first time buyer? ■ Number of habitable rooms/number of bedrooms ■ County/London borough ■ Type of neighbourhood ■ Type of local authority 	<ul style="list-style-type: none"> ■ Type of dwelling ■ Number of bedrooms ■ Floor size ■ Double garage ■ Parking space or no garage ■ More than one bathroom ■ New ■ Region ■ Type of neighbourhood ■ Parliamentary constituency 	<ul style="list-style-type: none"> ■ Type of dwelling ■ Number of habitable rooms ■ Number of garages ■ Number of acres ■ Garden ■ Number of bathrooms ■ Number of toilets ■ Property age ■ Region
Mix adjustment	Yes	Yes	Yes
Weighting method	Expenditure weights	Volume weights	Volume weights
Measures	Value of set of transacted dwellings	Price of Nationwide representative dwelling	Price of Halifax representative dwelling
Seasonal adjustment	No	Yes	Yes

These mortgage lenders submit all their completions data (see below), which cover around a third of all completions on mortgaged purchases. Since the Nationwide and Halifax indices are based on in-house data, and also on prices at the mortgage approval stage rather than completion prices, their data are available at an earlier stage compared with the DCLG index. This means that their indices provide a timelier indicator of house price trends.

The definition of price

The Nationwide and Halifax price indices are based solely on the mortgage approvals they provide to their respective customers. The house price measured by these indices is the price at the asking stage of the buying process when the mortgage is first approved. The DCLG index is based on the actual purchase price at the completion stage. The price at the mortgage approval stage can differ from the price at which the dwelling is bought at the purchase completion stage. In practice, there is a negotiation process between these two stages in which it is possible for the price of the dwelling to change, which may cause differences in the measured rate of house price inflation (note that all three indices exclude cash purchases).

There is usually a time lag between the mortgage approval and purchase completion stages in which there can be a difference in the absolute value of the house price as well as the rate of inflation that is measured. One advantage of approvals data is that they give an earlier indication of current trends in prices, as these data are available at an earlier stage.

The DCLG price index was specifically designed to be based on purchase completions and not mortgage approvals despite the less timely nature of this data. There are three primary reasons why this index, based on the purchase completion stage, gives a better reflection of the housing market:

- not all mortgage approvals go through to the purchase completion stage
- the purchase price at the mortgage application stage can change by the time the completion goes through, and
- an ideal house price index should reflect actual transaction prices

Mix adjustments

All three indices make mix adjustments, which are used to ensure house price indices reflect a pure price effect as far as possible. Adjustments ideally need to be made to house price indices so that any change in the rate of inflation is not simply picking up changes in the composition of properties that are being bought and sold (the 'mix' of properties). A mix-adjusted house price index attempts to remove (as far as possible) the dependence between the average price and the mix of properties that are transacted in that particular time period. It does this by weighting each property type or characteristic by a relative weight that is fixed from one index base period to the next.

If no mix adjustment is made, the resultant house price index would reflect the types of properties that are sold in a given time period. This may not give an accurate picture of what is actually happening in the housing market. A mix adjustment example is presented in **Box 1**.

Variables used in the statistical model

All three indices use prices based on a statistical model. This is because there are so many characteristics which affect the price of a dwelling that it is impossible to produce a definitive list of property types for which average prices can be obtained. In the example of Box 1, a four-bedroom house may be detached, semi-detached or terraced, with or without a garage, old or new, and so on. In fact, all dwellings are unique and it is necessary to identify the most important, available characteristics to classify them into a manageable number of dwelling types.

Box 1**A mix adjustment example**

The two tables illustrate an example of how mix adjustments are carried out. They show how the composition of properties sold changes from year t to year $t+1$. This is shown by the relative change in the types of properties sold. There is also information on the average prices of these properties. It has been assumed that there has been a 10 per cent increase in the prices of all these properties from year t to year $t+1$.

When mix adjustments are made, fixed relative weights are used. In this example, these represent the relative volume of transactions in a particular period (year t). Fixing these weights when constructing a mix-adjusted house price index means that, unlike a simple average approach, the measure of house price inflation will not be affected if there is a change in composition of property types sold.

If over time there is a change in the property mix that is being sold so that more four-bedroom houses are being sold at the expense of one- and two-bedroom flats, a simple average approach would pick up a faster rate of house price inflation than there actually is (assuming that four-bedroom houses are dearer).

Given a price rise of 10 per cent for all property types between year t and year $t+1$, intuition would suggest that the overall rate of house price inflation should be 10 per cent. Using the simple average approach (Table A), where the weights are not fixed, the house price index states an annual inflation rate of 17.7 per cent for the average property. Some of this inflation measure is the price effect but some is also the fact that there has been a relative increase in the number of higher priced properties sold.

Table A
Simple average

Property type	Number of sales (q_t)	Average price (p_t)	Number of sales (q_{t+1})	Average price (p_{t+1})
1 bedroom flat	150	£100,000	100	£110,000
2 bedroom flat	150	£110,000	100	£121,000
2 bedroom house	200	£160,000	200	£176,000
3 bedroom house	350	£200,000	400	£220,000
4 bedroom house	150	£250,000	200	£275,000
Average property price		£171,000		£201,300
Average rate of inflation				17.7 per cent

In Table B, a mix adjustment approach is used, fixing the relative sales of properties from year t . As it was assumed that the rate of inflation for all property types was 10 per cent, one would expect this to be the average rate of inflation. When a mix adjustment is made, this is what is observed.

Table B
Mix adjustment

Property type	Number of sales (q_t)	Average price (p_t)	Number of sales (q_t)	Average price (p_{t+1})
1 bedroom flat	150	£100,000	150	£110,000
2 bedroom flat	150	£110,000	150	£121,000
2 bedroom house	200	£160,000	200	£176,000
3 bedroom house	350	£200,000	350	£220,000
4 bedroom house	150	£250,000	150	£275,000
Average property price		£171,000		£188,100
Average rate of inflation				10.0 per cent

Table 2 shows the broad property classification variables that are used by Nationwide, Halifax and the DCLG. A house price index is structured according to these variables, which have been grouped to make the analysis clearer. In practice, there are subtle differences in the definition of the variables used in the respective statistical models. Table 1 shows this in more detail. Note that DCLG uses fewer classification variables because they are reliant on data from the FSA and, unlike Nationwide and Halifax, do not have ready access to full property details.

Applying these statistical models minimises the impact of changes in the mix of individual property within each defined dwelling type. The models also allow estimation of an average price when there are no sales in the sample for any particular dwelling type.

The monthly price estimates for each dwelling type, calculated from these statistical models, are then applied to a set of fixed weights to construct a mix-adjusted house price index.

Weights

One of the main reasons for the differences observed in Figure 1 is the variation in the weighting methods applied between the DCLG index and the Nationwide and Halifax indices, so that the respective indices reflect the UK housing market.

Table 2
Property classification variables

Property classification	Nationwide	Halifax	DCLG
Type of dwelling	✓	✓	✓
Number of habitable rooms	✓	✓	✓
Floor size (square feet)	✓	-	-
Number of garages	✓	✓	-
Number of acres	-	✓	-
Garden	-	✓	-
Number of bathrooms	✓	✓	-
Property age	✓	✓	✓
Region	✓	✓	✓
First time purchase	-	-	✓

The Nationwide and Halifax use volume-based weights to construct their house price indices. This means that price movements according to these indices are weighted by the number of transactions.

The DCLG index applies expenditure weights to the estimated purchase price for each dwelling type. This is equivalent to applying volume weights to prices rather than price movements (see **Box 2**). Use of expenditure weights makes the DCLG index more sensitive than the Nationwide and Halifax indices to price movements for the more expensive properties, as a higher weight is given to the more expensive properties. This difference is illustrated in Box 2.

Box 2**The difference between volume- and expenditure- based weights**

The example shows three different property types; A, B and C which have different rates of house price inflation (5 per cent, 10 per cent and 20 per cent respectively). The fixed volume weights are 100, 200 and 200, respectively.

Volume-weighted price change:

$$\frac{(100 \times 5) + (200 \times 10) + (200 \times 20)}{500} = 13.0 \text{ per cent}$$

Expenditure-weighted price change:

$$\frac{[(100 \times 105,000) + (200 \times 165,000) + (200 \times 240,000)] - 80,000,000}{80,000,000} = 14.4 \text{ per cent}$$

When volume-based weights are used, the house price index shows a 13.0 per cent increase. This is less than the 14.4 per cent increase from the expenditure-weighted index because it is the expensive properties (Type C) which have the greatest price increase.

If the cheaper properties had larger price increases than the expensive properties, the volume-weighted index would show a higher increase than the expenditure-weighted index.

The increase in the expenditure-weighted index is identical to the increase in mix-adjusted average prices. This is because the expenditures are derived from year t prices.

	Volume (q _t)	Expenditure	Average price (p _t)	Average price (p _{t+1})	Price change (per cent)
A	100	£10m	£100,000	£105,000	5
B	200	£30m	£150,000	£165,000	10
C	200	£40m	£200,000	£240,000	20
Overall	500	£80m	£160,000	£183,000	14.4
Volume-weighted price changes					13.0
Expenditure-weighted price change					14.4

Seasonal adjustment

House prices show a seasonal component as price changes tend to be stronger in the summer months and weaker in the winter months. This is because the market is more buoyant in the summer as there are more potential buyers, which means that there is less pressure for a seller to discount prices in order to push through a sale. Nationwide figures show that June raw prices, that is, non-seasonally adjusted prices, are 1.3 per cent above their seasonally adjusted level, whereas January raw prices are 1.9 per cent below their seasonally adjusted level. Incidentally, there is also an Easter effect.

When analysing annual rates of house price inflation, the implications of whether seasonal adjustments are applied are insignificant. The seasonal factors that affect house prices mean that even though these factors are likely to cause house prices to be higher, for example, in June in one year, the same factors are likely to have a similar effect in the previous June. Hence, annual inflation rates are not likely to be significantly affected by seasonal adjustment.

However, if shorter-term house price inflation analyses are made, such as on a quarterly basis, this can cause there to be divergences in house price indices if one is seasonally adjusted and the other is not. If the index is not seasonally adjusted, it would be picking up the absolute change in prices but would not be the best reflection of the inflationary pressures in the housing market. By publishing a seasonally adjusted house price index, it allows for the comparison of data between two quarters for which the seasonal pattern is different. The importance of whether an index is seasonally adjusted depends on whether short- or long-term analyses of the housing market are being made.

Both the Nationwide and Halifax indices are seasonally adjusted, whereas presently the DCLG index is not and hence should not be used for quarterly or monthly comparisons. This is because there is not enough data yet for the DCLG index to be seasonally adjusted (a monthly series is only available back to February 2002), although there are plans to make seasonal adjustments to the DCLG index when enough data are available.

Land Registry house price index

A new monthly house price index, produced by the Land Registry, was launched in October 2006. Like the Nationwide and Halifax indices, this new index is seasonally adjusted. The main difference between this index and those discussed above is that it uses a repeat sales method. This means that the index is based on observed price changes for repeat sales of the same property since April 2000. This ensures like-for-like price comparisons as it enables price changes on the same property to be tracked over time. It also avoids the need for the relatively arbitrary categorisation of individual dwellings into dwelling types. Statistical modelling is only required to link the price changes for individual properties, which are bought and sold in different months, into a single, monthly series.

The repeat sales methodology enables 'property specific' elements that cause the price of the property to deviate from the overall trend of house price inflation also to be captured.

The measure is based on the Land Registry's complete record of repeat sales residential property transactions in England and Wales. This means that unlike the other indices discussed, the Land Registry house price index also includes cash purchases as well as mortgages.

Cash purchases account for a significant amount of dwelling purchases (approximately 25 per cent). Due to the differences in the characteristics of the cash-bought dwellings and mortgage-purchased dwellings, this can cause differences to be observed in the measured rate of inflation.

Despite the methodological advantage of the repeat sales approach, there are some drawbacks to the Land Registry house price index:

- the index only measures price changes for properties sold in England and Wales, not the whole of the UK
- because of the repeat sales methodology, the only properties that are included in the sample are those that have been sold twice or more since 2000. Unlike the other three indices, it therefore does not include properties with only one sale since 2000 and it cannot include the effect of any new properties that are sold
- the index is subject to long-term revisions. Revisions covering a short time span are normal as new or revised data become available but, under the repeat sales method, new sales for properties previously sold many years ago can affect the index all the way back to the time of these earlier sales

Conclusion

This article has examined some of the ways house price indices can be constructed. Some of the methodological features of interest have been explained. The article provides a basis to help understand the differences that are observed in the DCLG, Nationwide and Halifax measures of house price inflation. Figure 1 shows that the latter two measures of house price inflation are very similar to one another. As Table 1 summarises, this is because many of the statistical techniques used to construct both series are similar. The differences that are seen between these two measures are likely to arise from the fact that the representative properties tracked by both Nationwide and Halifax are likely to differ from each other, reflecting the differences in clientele.

CONTACT

✉ elmr@ons.gsi.gov.uk

ACKNOWLEDGEMENTS

The author is grateful to John Wood, David Baran and Geoff Tily for their assistance.

REFERENCES

- Brereton M (2005) Methodology Notes: Hedonics Price Indices. *Economic Trends* 618, pp35–36 and at www.statistics.gov.uk/cci/article.asp?ID=1418
- Brereton M (2005) Methodology Notes: Seasonal Adjustment. *Economic Trends* 621, pp25–27 and at www.statistics.gov.uk/cci/article.asp?ID=1417
- Halifax House Price Index Methodology at www.hbosplc.com/economy/indexmethodology.asp
- House Prices and Affordability Indicators Seminars at www.communities.gov.uk/index.asp?id=1156752
- Land Registry House Price Index at www.landreg.gov.uk/kb/Default.asp?catId=32&ToDo=browse
- Nationwide House Prices Methodology at www.nationwide.co.uk/hpi/methodology.htm
- Office of the Deputy Prime Minister. Finding the Right Measure of House Price Inflation for Housing Policy: Technical Report at www.odpm.gov.uk/index.asp?id=1164912

Key time series

National accounts aggregates

Last updated: 21/12/06

Seasonally adjusted

	£ million		Indices (2003 = 100)						
	At current prices		Value indices at current prices		Chained volume indices			Implied deflators ²	
	Gross domestic product (GDP) at market prices	Gross value added (GVA) at basic prices	GDP at market prices ¹	GVA at basic prices	Gross national disposable income at market prices	GDP at market prices	GVA at basic prices	GDP at market prices	GVA at basic prices
	YBHA	ABML	YBEU	YBEX	YBFP	YBEZ	CGCE	YBGB	CGBV
2001	996,987	882,753	89.8	89.6	93.8	95.4	95.7	94.1	93.6
2002	1,048,767	930,297	94.5	94.4	97.2	97.4	97.4	97.0	96.9
2003	1,110,296	985,558	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004	1,176,527	1,044,165	106.0	105.9	103.4	103.3	103.3	102.6	102.6
2005	1,225,339	1,087,868	110.4	110.4	104.5	105.3	105.3	104.8	104.8
2001 Q1	246,345	217,972	88.7	88.5	93.2	95.0	95.4	93.4	92.7
2001 Q2	248,058	219,362	89.4	89.0	93.4	95.1	95.4	94.0	93.3
2001 Q3	249,447	220,955	89.9	89.7	94.5	95.7	95.9	93.9	93.5
2001 Q4	253,137	224,464	91.2	91.1	94.2	96.0	96.1	95.0	94.8
2002 Q1	257,368	228,051	92.7	92.6	95.9	96.5	96.6	96.1	95.8
2002 Q2	261,028	231,626	94.0	94.0	96.3	97.1	97.0	96.9	96.9
2002 Q3	264,049	234,316	95.1	95.1	98.4	97.8	97.7	97.3	97.3
2002 Q4	266,322	236,304	95.9	95.9	98.3	98.3	98.2	97.6	97.6
2003 Q1	270,918	240,577	97.6	97.6	99.4	98.8	98.8	98.8	98.8
2003 Q2	275,130	244,438	99.1	99.2	98.9	99.3	99.3	99.8	99.9
2003 Q3	280,024	248,520	100.9	100.9	100.0	100.4	100.4	100.5	100.5
2003 Q4	284,224	252,023	102.4	102.3	101.7	101.5	101.6	100.9	100.7
2004 Q1	286,975	254,169	103.4	103.2	101.9	102.2	102.2	101.1	100.9
2004 Q2	293,120	260,148	105.6	105.6	103.2	103.1	103.2	102.4	102.4
2004 Q3	295,998	262,789	106.6	106.7	103.0	103.5	103.5	103.0	103.0
2004 Q4	300,434	267,059	108.2	108.4	105.4	104.1	104.2	103.9	104.0
2005 Q1	301,743	267,783	108.7	108.7	104.3	104.5	104.5	104.1	104.0
2005 Q2	304,407	270,286	109.7	109.7	105.5	104.9	105.0	104.5	104.5
2005 Q3	306,650	271,811	110.5	110.3	103.9	105.5	105.5	104.7	104.6
2005 Q4	312,539	277,988	112.6	112.8	104.3	106.2	106.3	106.0	106.2
2006 Q1	314,028	278,703	113.1	113.1	105.5	107.0	107.1	105.8	105.6
2006 Q2	319,232	283,113	115.0	114.9	107.0	107.7	107.9	106.7	106.5
2006 Q3	325,034	288,489	117.1	117.1	107.4	108.5	108.6	107.9	107.8

Percentage change, quarter on corresponding quarter of previous year³

2001 Q1	5.0	5.3	5.0	5.4	3.3	2.9	2.9	2.0	2.3
2001 Q2	4.6	5.0	4.6	5.0	3.1	2.3	2.1	2.3	2.8
2001 Q3	4.1	4.5	4.2	4.5	3.1	2.4	1.9	1.7	2.5
2001 Q4	4.7	5.1	4.7	5.2	3.7	2.0	1.6	2.7	3.5
2002 Q1	4.5	4.6	4.5	4.6	2.9	1.6	1.3	2.9	3.3
2002 Q2	5.2	5.6	5.1	5.6	3.1	2.1	1.7	3.1	3.9
2002 Q3	5.9	6.0	5.8	6.0	4.1	2.2	1.9	3.6	4.1
2002 Q4	5.2	5.3	5.2	5.3	4.4	2.4	2.2	2.7	3.0
2003 Q1	5.3	5.5	5.3	5.4	3.6	2.4	2.3	2.8	3.1
2003 Q2	5.4	5.5	5.4	5.5	2.7	2.3	2.4	3.0	3.1
2003 Q3	6.1	6.1	6.1	6.1	1.6	2.7	2.8	3.3	3.3
2003 Q4	6.7	6.7	6.8	6.7	3.5	3.3	3.5	3.4	3.2
2004 Q1	5.9	5.6	5.9	5.7	2.5	3.4	3.4	2.3	2.1
2004 Q2	6.5	6.4	6.6	6.5	4.3	3.8	3.9	2.6	2.5
2004 Q3	5.7	5.7	5.6	5.7	3.0	3.1	3.1	2.5	2.5
2004 Q4	5.7	6.0	5.7	6.0	3.6	2.6	2.6	3.0	3.3
2005 Q1	5.1	5.4	5.1	5.3	2.4	2.3	2.3	3.0	3.1
2005 Q2	3.9	3.9	3.9	3.9	2.2	1.7	1.7	2.1	2.1
2005 Q3	3.6	3.4	3.7	3.4	0.9	1.9	1.9	1.7	1.6
2005 Q4	4.0	4.1	4.1	4.1	-1.0	2.0	2.0	2.0	2.1
2006 Q1	4.1	4.1	4.0	4.0	1.2	2.4	2.5	1.6	1.5
2006 Q2	4.9	4.7	4.8	4.7	1.4	2.7	2.8	2.1	1.9
2006 Q3	6.0	6.1	6.0	6.2	3.4	2.8	2.9	3.1	3.1

Notes

1 "Money GDP".

2 Based on chained volume measures and current price estimates of expenditure components of GDP.

3 For index number series, these are derived from the rounded figures shown in the table.

Source: Office for National Statistics

Gross domestic product: by category of expenditure

Last updated: 21/12/06

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

	Domestic expenditure on goods and services at market prices											
	Final consumption expenditure			Gross capital formation			Total	Exports of goods and services	Gross final expenditure	less imports of goods and services	Statistical discrepancy (expenditure)	Gross domestic at product market prices
	Households	Non-profit institutions ¹	General government	Gross fixed capital formation	Changes in inventories ²	Acquisitions less disposals of valuables						
	ABJR	HAYO	NMRY	NPQT	CAFU	NPJR	YBIM	IKBK	ABMG	IKBL	GIXS	ABMI
2001	653,326	27,155	217,359	171,639	5,577	342	1,075,760	277,694	1,353,632	294,449	0	1,059,648
2002	676,833	27,130	224,868	178,066	2,289	183	1,109,596	280,593	1,390,217	308,706	0	1,081,469
2003	697,160	27,185	232,699	178,751	3,983	-37	1,139,741	285,397	1,425,138	314,842	0	1,110,296
2004	721,434	27,327	240,129	189,492	4,597	-42	1,182,937	299,289	1,482,225	335,703	0	1,146,523
2005	730,994	28,132	247,489	195,913	3,611	-354	1,205,785	322,792	1,528,577	359,179	-685	1,168,713
2001 Q1	161,204	6,873	53,609	42,555	1,643	-26	265,928	71,295	337,389	73,841	0	263,631
2001 Q2	162,333	6,788	53,894	43,242	1,802	202	268,431	69,333	337,813	73,937	0	263,935
2001 Q3	164,239	6,762	54,600	43,357	1,743	30	270,836	67,921	338,708	73,327	0	265,519
2001 Q4	165,550	6,732	55,256	42,485	389	136	270,565	69,145	339,722	73,344	0	266,563
2002 Q1	167,588	6,762	55,756	42,927	1,047	66	274,166	69,440	343,608	75,709	0	267,948
2002 Q2	168,803	6,756	56,288	43,981	385	48	276,273	71,533	347,850	78,367	0	269,392
2002 Q3	169,715	6,793	56,429	44,765	511	62	278,337	71,056	349,422	78,006	0	271,368
2002 Q4	170,727	6,819	56,395	46,393	346	7	280,820	68,564	349,337	76,624	0	272,761
2003 Q1	171,828	6,843	57,099	44,934	-571	-8	280,285	72,662	352,958	78,836	0	274,119
2003 Q2	174,146	6,779	57,684	44,161	-644	94	282,367	70,611	352,971	77,283	0	275,712
2003 Q3	175,140	6,790	58,445	43,924	2,264	-68	286,503	70,334	356,830	78,089	0	278,748
2003 Q4	176,046	6,773	59,471	45,732	2,934	-55	290,586	71,790	362,379	80,634	0	281,717
2004 Q1	178,197	6,830	59,969	47,256	-381	112	291,983	73,389	365,373	81,648	0	283,725
2004 Q2	180,362	6,805	59,530	47,102	1,050	-90	294,759	74,861	369,620	83,313	0	286,307
2004 Q3	181,032	6,826	60,002	47,813	1,025	-96	296,603	75,097	371,700	84,300	0	287,400
2004 Q4	181,843	6,866	60,628	47,321	2,903	32	299,592	75,942	375,532	86,442	0	289,091
2005 Q1	182,294	7,040	60,974	48,171	1,754	-158	300,076	75,931	376,007	85,846	-218	289,943
2005 Q2	182,222	7,013	61,737	48,162	177	86	299,397	80,048	379,445	87,949	-217	291,280
2005 Q3	182,723	7,028	62,232	49,663	835	-201	302,280	82,027	384,307	91,383	-171	292,753
2005 Q4	183,755	7,051	62,546	49,917	845	-81	304,032	84,786	388,818	94,001	-79	294,737
2006 Q1	184,218	7,194	62,657	50,919	1,585	-128	306,446	92,701	399,147	102,540	263	296,869
2006 Q2	185,902	7,191	63,027	51,173	1,332	233	308,858	95,847	404,705	105,991	370	299,084
2006 Q3	186,632	7,205	63,510	52,116	1,512	-29	310,946	84,149	395,096	94,413	444	301,126

Percentage change, quarter on corresponding quarter of previous year³

2001 Q1	2.1	3.9	1.8	3.0			2.8	9.7	4.3	9.0		2.9
2001 Q2	2.9	0.6	1.6	5.4			3.2	3.0	3.1	6.1		2.2
2001 Q3	3.4	-1.6	2.8	3.6			3.0	1.0	2.6	3.6		2.3
2001 Q4	4.0	-3.0	3.3	-1.8			2.7	-1.6	1.7	0.7		2.0
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	1.7			2.9	3.2	3.0	6.0		2.1
2002 Q3	3.3	0.5	3.3	3.2			2.8	4.6	3.2	6.4		2.2
2002 Q4	3.1	1.3	2.1	9.2			3.8	-0.8	2.8	4.5		2.3
2003 Q1	2.5	1.2	2.4	4.7			2.2	4.6	2.7	4.1		2.3
2003 Q2	3.2	0.3	2.5	0.4			2.2	-1.3	1.5	-1.4		2.3
2003 Q3	3.2	0.0	3.6	-1.9			2.9	-1.0	2.1	0.1		2.7
2003 Q4	3.1	-0.7	5.5	-1.4			3.5	4.7	3.7	5.2		3.3
2004 Q1	3.7	-0.2	5.0	5.2			4.2	1.0	3.5	3.6		3.5
2004 Q2	3.6	0.4	3.2	6.7			4.4	6.0	4.7	7.8		3.8
2004 Q3	3.4	0.5	2.7	8.9			3.5	6.8	4.2	8.0		3.1
2004 Q4	3.3	1.4	1.9	3.5			3.1	5.8	3.6	7.2		2.6
2005 Q1	2.3	3.1	1.7	1.9			2.8	3.5	2.9	5.1		2.2
2005 Q2	1.0	3.1	3.7	2.3			1.6	6.9	2.7	5.6		1.7
2005 Q3	0.9	3.0	3.7	3.9			1.9	9.2	3.4	8.4		1.9
2005 Q4	1.1	2.7	3.2	5.5			1.5	11.6	3.5	8.7		2.0
2006 Q1	1.1	2.2	2.8	5.7			2.1	22.1	6.2	19.4		2.4
2006 Q2	2.0	2.5	2.1	6.3			3.2	19.7	6.7	20.5		2.7
2006 Q3	2.1	2.5	2.1	4.9			2.9	2.6	2.8	3.3		2.9

Notes

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

Source: Office for National Statistics

Labour market summary

Last updated: 13/12/06

United Kingdom (thousands), seasonally adjusted

All aged 16 and over									
	All	Total economically active	Total in employment	Unemployed	Economically inactive	Economic activity rate (%)	Employment rate (%)	Unemployment rate (%)	Economic inactivity rate (%)
	1	2	3	4	5	6	7	8	9
All persons	MGSL	MGSF	MGRZ	MGSC	MGSI	MGWG	MGSR	MGSX	YBTC
Aug-Oct 2004	47,478	29,866	28,477	1,389	17,612	62.9	60.0	4.7	37.1
Aug-Oct 2005	47,884	30,287	28,788	1,498	17,597	63.3	60.1	4.9	36.7
Nov-Jan 2006	47,976	30,343	28,801	1,541	17,634	63.2	60.0	5.1	36.8
Feb-Apr 2006	48,069	30,545	28,925	1,620	17,524	63.5	60.2	5.3	36.5
May-Jul 2006	48,162	30,666	28,964	1,702	17,496	63.7	60.1	5.5	36.3
Aug-Oct 2006	48,254	30,700	29,005	1,695	17,555	63.6	60.1	5.5	36.4
Male	MGSM	MMSG	MGSA	MGSD	MGSJ	MGWH	MGSS	MGSY	YBTD
Aug-Oct 2004	22,995	16,195	15,394	801	6,800	70.4	66.9	4.9	29.6
Aug-Oct 2005	23,217	16,404	15,518	886	6,814	70.7	66.8	5.4	29.3
Nov-Jan 2006	23,268	16,430	15,542	888	6,838	70.6	66.8	5.4	29.4
Feb-Apr 2006	23,319	16,535	15,589	945	6,785	70.9	66.9	5.7	29.1
May-Jul 2006	23,370	16,585	15,602	983	6,785	71.0	66.8	5.9	29.0
Aug-Oct 2006	23,422	16,631	15,652	979	6,791	71.0	66.8	5.9	29.0
Female	MGSN	MGSB	MGSB	MGSE	MGSK	MGWI	MGST	MGSZ	YBTE
Aug-Oct 2004	24,483	13,671	13,083	588	10,812	55.8	53.4	4.3	44.2
Aug-Oct 2005	24,666	13,883	13,270	613	10,784	56.3	53.8	4.4	43.7
Nov-Jan 2006	24,708	13,913	13,259	654	10,795	56.3	53.7	4.7	43.7
Feb-Apr 2006	24,750	14,010	13,336	674	10,740	56.6	53.9	4.8	43.4
May-Jul 2006	24,792	14,081	13,362	719	10,711	56.8	53.9	5.1	43.2
Aug-Oct 2006	24,833	14,068	13,352	716	10,764	56.7	53.8	5.1	43.3

All aged 16 to 59/64									
	All	Total economically active	Total in employment	Unemployed	Economically inactive	Economic activity rate (%)	Employment rate (%)	Unemployment rate (%)	Economic inactivity rate (%)
	10	11	12	13	14	15	16	17	18
All persons	YBTF	YBSK	YBSE	YBSH	YBSN	MGSO	MGSU	YBTI	YBTL
Aug-Oct 2004	36,783	28,857	27,484	1,373	7,925	78.5	74.7	4.8	21.5
Aug-Oct 2005	37,076	29,167	27,692	1,475	7,910	78.7	74.7	5.1	21.3
Nov-Jan 2006	37,142	29,194	27,678	1,517	7,948	78.6	74.5	5.2	21.4
Feb-Apr 2006	37,208	29,375	27,782	1,593	7,834	78.9	74.7	5.4	21.1
May-Jul 2006	37,274	29,477	27,804	1,674	7,797	79.1	74.6	5.7	20.9
Aug-Oct 2006	37,323	29,488	27,820	1,668	7,835	79.0	74.5	5.7	21.0
Male	YBTG	YBSL	YBSF	YBSI	YBSO	MGSP	MGSV	YBTJ	YBTM
Aug-Oct 2004	19,008	15,850	15,057	793	3,158	83.4	79.2	5.0	16.6
Aug-Oct 2005	19,183	16,017	15,142	875	3,166	83.5	78.9	5.5	16.5
Nov-Jan 2006	19,224	16,037	15,160	877	3,188	83.4	78.9	5.5	16.6
Feb-Apr 2006	19,266	16,138	15,203	935	3,128	83.8	78.9	5.8	16.2
May-Jul 2006	19,308	16,187	15,216	971	3,121	83.8	78.8	6.0	16.2
Aug-Oct 2006	19,347	16,221	15,253	968	3,126	83.8	78.8	6.0	16.2
Female	YBTH	YBSM	YBSG	YBSJ	YBSP	MGSQ	MGSW	YBTK	YBTN
Aug-Oct 2004	17,775	13,007	12,427	581	4,768	73.2	69.9	4.5	26.8
Aug-Oct 2005	17,894	13,150	12,550	600	4,744	73.5	70.1	4.6	26.5
Nov-Jan 2006	17,918	13,158	12,518	640	4,760	73.4	69.9	4.9	26.6
Feb-Apr 2006	17,942	13,237	12,579	657	4,706	73.8	70.1	5.0	26.2
May-Jul 2006	17,966	13,290	12,587	703	4,676	74.0	70.1	5.3	26.0
Aug-Oct 2006	17,976	13,267	12,567	701	4,709	73.8	69.9	5.3	26.2

Notes

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

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: 020 7533 6094

Prices

Last updated: 12/12/06

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)			Output prices		Input prices	
	All items	CPI excluding indirect taxes (CPIY) ¹	CPI at constant tax rates (CPI-CT)	All items	All items excluding mortgage interest payments and indirect taxes (RPIX)	All items excluding mortgage interest payments and indirect taxes (RPIY) ²	All manufactured products	Excluding food, beverages, tobacco and petroleum products	Materials and fuels purchased by manufacturing industry	Excluding food, beverages, tobacco and petroleum products
	D7G7	EL25	EAD6	CZBH	CDKQ	CBZX	PLLU ³	PLLW ³	RNPE ³	RNPF ³
2003 Jan	1.3			2.9	2.7	2.9	1.3	0.9	1.7	-2.2
2003 Feb	1.6			3.2	3.0	3.1	1.5	1.1	2.5	-2.0
2003 Mar	1.5			3.1	3.0	3.2	2.1	1.3	0.8	-1.5
2003 Apr	1.4			3.1	3.0	2.9	1.6	1.3	-1.3	-0.6
2003 May	1.3			3.0	2.9	2.7	1.1	1.2	-0.1	-0.2
2003 Jun	1.1			2.9	2.8	2.7	1.1	1.2	0.0	-1.2
2003 Jul	1.3			3.1	2.9	2.8	1.3	1.3	0.6	-0.5
2003 Aug	1.4			2.9	2.9	2.7	1.5	1.2	1.9	0.0
2003 Sep	1.4			2.8	2.8	2.7	1.4	1.4	1.3	1.0
2003 Oct	1.4			2.6	2.7	2.4	1.5	1.3	2.5	1.2
2003 Nov	1.3			2.5	2.5	2.1	1.7	1.4	4.6	1.7
2003 Dec	1.3	1.1	1.1	2.8	2.6	2.2	1.8	1.5	2.0	0.4
2004 Jan	1.4	1.5	1.3	2.6	2.4	2.0	1.6	1.4	-0.3	0.0
2004 Feb	1.3	1.3	1.1	2.5	2.3	1.9	1.6	1.5	-1.3	-0.5
2004 Mar	1.1	1.1	1.0	2.6	2.1	1.7	1.4	1.5	0.9	-0.1
2004 Apr	1.1	1.1	1.0	2.5	2.0	1.8	1.8	1.3	2.9	-0.2
2004 May	1.5	1.4	1.3	2.8	2.3	2.2	2.5	1.4	5.6	0.7
2004 Jun	1.6	1.5	1.4	3.0	2.3	2.3	2.6	1.4	3.7	1.3
2004 Jul	1.4	1.4	1.2	3.0	2.2	2.0	2.6	1.7	3.7	1.4
2004 Aug	1.3	1.3	1.1	3.2	2.2	2.0	2.8	2.2	4.6	2.3
2004 Sep	1.1	1.0	0.9	3.1	1.9	1.7	3.1	2.3	8.1	3.8
2004 Oct	1.2	1.2	1.1	3.3	2.1	2.0	3.5	2.9	9.2	4.8
2004 Nov	1.5	1.4	1.4	3.4	2.2	2.2	3.5	2.9	6.7	4.6
2004 Dec	1.7	1.7	1.6	3.5	2.5	2.5	2.9	2.5	4.4	4.2
2005 Jan	1.6	1.7	1.5	3.2	2.1	2.0	2.6	2.5	9.6	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	10.0	7.0
2005 May	1.9	2.0	1.8	2.9	2.1	2.2	2.7	2.5	7.6	6.5
2005 Jun	2.0	2.2	1.9	2.9	2.2	2.2	2.5	2.3	12.0	7.4
2005 Jul	2.3	2.5	2.3	2.9	2.4	2.5	3.1	2.2	13.9	8.6
2005 Aug	2.4	2.6	2.3	2.8	2.3	2.3	3.0	1.9	12.8	7.5
2005 Sep	2.5	2.6	2.4	2.7	2.5	2.5	3.3	2.1	10.5	5.7
2005 Oct	2.3	2.5	2.3	2.5	2.4	2.3	2.6	1.4	8.9	7.0
2005 Nov	2.1	2.3	2.1	2.4	2.3	2.3	2.3	1.3	13.6	9.6
2005 Dec	1.9	2.1	1.8	2.2	2.0	2.0	2.4	1.7	18.0	12.1
2006 Jan	1.9	2.1	1.9	2.4	2.3	2.3	2.9	1.7	15.6	10.2
2006 Feb	2.0	2.1	2.0	2.4	2.3	2.3	2.9	1.8	15.0	10.5
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	2.3	15.2	10.0
2006 May	2.2	2.3	2.2	3.0	2.9	2.8	3.1	2.5	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	10.5	8.2
2006 Aug	2.5	2.6	2.4	3.4	3.3	3.4	2.7	2.3	8.0	7.8
2006 Sep	2.4	2.6	2.3	3.6	3.2	3.3	1.8	2.1	5.4	7.4
2006 Oct	2.4	2.7	2.3	3.7	3.2	3.3	1.6	2.5	4.7	6.0
2006 Nov	2.7	3.0	2.6	3.9	3.4	3.6	1.8	2.5	2.8	4.0

Notes

Source: Office for National Statistics

1 The taxes excluded are VAT, duties, insurance premium tax, air passenger duty and stamp duty on share transactions.

2 The taxes excluded are council tax, VAT, duties, vehicle excise duty, insurance premium tax and air passenger duty.

3 Derived from these identification (CDID) codes.

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

Directory of online tables

Weblink: www.statistics.gov.uk/elmr_tables

Title	Frequency of update	Updated since last month
UK economic accounts		
1.01 National accounts aggregates	M	✓
1.02 Gross domestic product and gross national income	M	✓
1.03 Gross domestic product, by category of expenditure	M	✓
1.04 Gross domestic product, by category of income	M	✓
1.05 Gross domestic product and shares of income and expenditure	M	✓
1.06 Income, product and spending per head	Q	✓
1.07 Households' disposable income and consumption	M	✓
1.08 Household final consumption expenditure	M	✓
1.09 Gross fixed capital formation	M	✓
1.10 Gross value added, by category of output	M	✓
1.11 Gross value added, by category of output: service industries	M	✓
1.12 Summary capital accounts and net lending/net borrowing	Q	✓
1.13 Private non-financial corporations: allocation of primary income account	Q	✓
1.14 Private non-financial corporations: secondary distribution of income account and capital account	Q	✓
1.15 Balance of payments: current account	M	✓
1.16 Trade in goods (on a balance of payments basis)	M	✓
1.17 Measures of variability of selected economic series	Q	-

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	✓
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	✓

Weblink: www.statistics.gov.uk/elmr_tables

Prices

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

Selected output and demand indicators

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

Selected financial statistics

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

Further labour market statistics

6.01	Working-age households	A	-
6.02	Local labour market indicators by unitary and local authority	Q	-
6.03	Employment by occupation	Q	-
6.04	Employee jobs by industry	M	✓
6.05	Employee jobs by industry division, class or group	Q	✓
6.06	Employee jobs by region and industry	Q	✓
6.07	Key productivity measures by industry	Q	-
6.08	Total workforce hours worked per week	Q	✓
6.09	Total workforce hours worked per week by region and industry group	Q	-
6.10	Job-related training received by employees	Q	-
6.11	Unemployment rates by previous occupation	Q	-
6.12	Average Earnings Index by industry: excluding and including bonuses	M	✓
6.13	Average Earnings Index: effect of bonus payments by industry	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	✓

Weblink: www.statistics.gov.uk/elmr_tables

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
B Biannually
Q Quarterly
M Monthly

More information

Time series are available from www.statistics.gov.uk/statbase/tsdintro.asp

Subnational labour market data are available from www.statistics.gov.uk/statbase/Product.asp?vlnk=14160 and www.nomis.web

Labour Force Survey tables are available from www.statistics.gov.uk/statbase/Product.asp?vlnk=11771

Annual Survey of Hours and Earnings data are available from www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101

Contact points

Recorded announcement of latest RPI

☎ 020 7533 5866
✉ rpi@ons.gsi.gov.uk

Labour Market Statistics Helpline

☎ 020 7533 6094
✉ 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

DfES Public Enquiry Unit

☎ 0870 000 2288

For statistical information on

Average Earnings Index (monthly)

☎ 01633 819024

Claimant count

☎ 020 7533 6094

Consumer Prices Index

☎ 020 7533 5874

Earnings

Annual Survey of Hours and Earnings

☎ 01633 819024

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

☎ 01633 819008

Low-paid workers

☎ 01633 819024
✉ lowpay@ons.gsi.gov.uk

Labour Force Survey

☎ 020 7533 6094
✉ labour.market@ons.gsi.gov.uk

Economic activity and inactivity

☎ 020 7533 6094

Employment

Labour Force Survey

☎ 020 7533 6094
✉ labour.market@ons.gsi.gov.uk

Employee jobs by industry

☎ 01633 812318

Total workforce hours worked per week

☎ 01633 812766
✉ productivity@ons.gsi.gov.uk

Workforce jobs series – short-term estimates

☎ 01633 812318
✉ workforce.jobs@ons.gsi.gov.uk

Labour costs

☎ 01633 819024

Labour disputes

☎ 01633 819205

Labour Force Survey

☎ 020 7533 6094
✉ labour.market@ons.gsi.gov.uk

Labour Force Survey Data Service

☎ 01633 655732
✉ lfs.dataservice@ons.gsi.gov.uk

New Deal

☎ 0114 209 8228

Productivity and unit wage costs

☎ 01633 812766

Public sector employment

General enquiries

☎ 020 7533 6178

Source and methodology enquiries

☎ 01633 812362

Qualifications (DfES)

☎ 0870 000 2288

Redundancy statistics

☎ 020 7533 6094

Retail Prices Index

☎ 020 7533 5874
✉ rpi@ons.gsi.gov.uk

Skills (DfES)

☎ 0114 259 4407
Skill needs surveys and research into skill shortages
☎ 0114 259 4407

Small firms (DTI)

Small Business Service (SBS)

☎ 0114 279 4439

Subregional estimates

☎ 01633 812038

Annual employment statistics

✉ annual.employment.figures@ons.gsi.gov.uk

Annual Population Survey, local area statistics

☎ 020 7533 6130

LFS Subnational Data Service

☎ 020 7533 6135
✉ snds@ons.gsi.gov.uk

Trade unions (DTI)

Employment relations

☎ 020 7215 5934

Training

Adult learning – work-based training (DWP)

☎ 0114 209 8236

Employer-provided training (DfES)

☎ 0114 259 4407

Travel-to-Work Areas

Composition and review

☎ 020 7533 6114

Unemployment

☎ 020 7533 6094

Vacancies

Vacancy Survey: total stocks of vacancies

☎ 020 7533 6162

ONS economic and labour market publications

ANNUAL

Financial Statistics Explanatory Handbook

2007 edition. Palgrave Macmillan, ISBN 1-4039-9783-7. Price £45.

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

Foreign Direct Investment (MA4)

2004 edition

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

Input-Output analyses for the United Kingdom

2006 edition

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

Share Ownership

2004 edition

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

United Kingdom Balance of Payments (Pink Book)

2006 edition. Palgrave Macmillan, ISBN 1-4039-9387-4. Price £45.

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

United Kingdom National Accounts (Blue Book)

2006 edition. Palgrave Macmillan, ISBN 1-4039-9388-2. Price £45.

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

First releases

- Annual survey of hours and earnings
- Business enterprise research and development
- Foreign Direct Investment
- Gross domestic expenditure on research and development
- Low pay estimates
- Regional gross value added
- Share Ownership
- UK trade in services
- Work and worklessness among households

QUARTERLY

Consumer Trends

2006 quarter 3

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

United Kingdom Economic Accounts

2006 quarter 3. Palgrave Macmillan, ISBN 978-0-230-52616-7. Price £32.

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

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

2006 quarter 3

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

First releases

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

MONTHLY

Financial Statistics

December 2006. Palgrave Macmillan, ISBN 0-230-00289-7. Price £42.50.

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

Focus on Consumer Price Indices

November 2006

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

Monthly review of external trade statistics (MM24)

November 2006

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

Producer Price Indices (MM22)

November 2006

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

First releases

- Consumer Price Indices
- Index of distribution
- Index of production
- Labour market statistics
- Labour market statistics: regional
- Producer Prices
- Public Sector Finances
- Retail Sales Index
- UK Trade

OTHER

Labour Market Review

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

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

National Accounts Concepts, Sources and Methods

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

Sector classification guide (MA23)

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

Recent articles

All authors are from the Office for National Statistics unless stated.

JULY 2006

Economic Trends

Productivity measures and analysis: ONS strategy and work programme
Dawn Camus

Analysis of revisions to the early estimates of Gross Domestic Product
Catherine Marks

Public service productivity: annual social care
UK Centre for the Measurement of Government Activity

Labour Market Trends

Labour market gross flows data from the LFS
Keith Brook and Catherine Barham

LFS low pay estimates
Catrin Ormerod

AUGUST 2006

Economic Trends

Methodology notes: international comparisons of economic activity
Sumit Dey-Chowdhury

Regional household income
Eve MacSearraigh, John Marais and Steffi Schuster

Fitting trends to time series data *Graeme Chamberlin*

Labour Market Trends

Reflections on fifteen years of change in using the LFS
Barry Werner

Estimation of compensation of employees
Craig Lindsay

SEPTEMBER 2006

Economic Trends

Development, compilation and use of input-output supply and use tables in the UK National Accounts
Sanjiv Mahajan

Public service productivity: social security administration
UK Centre for the Measurement of Government Activity

Labour Market Trends

The effect of bonuses on earnings growth in 2006
Harry Duff

Local area labour market statistical indicators incorporating the APS
David Hastings

OCTOBER 2006

Economic Trends

UK environmental taxes: classification and recent trends
Ian Gazley

Concentration ratios for businesses by industry in 2004
Sanjiv Mahajan

Taxes and subsidies within the production boundary, 1992–2004
Sanjiv Mahajan

Labour Market Trends

Foreign labour in the UK: current patterns and trends
John Salt and Jane Millar, UCL

NOVEMBER 2006

Economic Trends

Including finance lease liabilities in Public Sector Net Debt: PFI and other
Adrian Chesson

Export shares of goods and services, 1992–2004
Sanjiv Mahajan

Import penetration of goods and services, 1992–2004
Sanjiv Mahajan

Labour Market Trends

Comparison of statistics on jobs: June 2006
Annette Walling

Earnings data: a brief guide to sources and outputs
Catrin Ormerod

DECEMBER 2006

Economic Trends

Experimental quality-adjusted labour input measure, 1996–2005
Peter Goodridge

Revisions to quarterly GDP growth and its production (output), expenditure and income components
David Obuwa and Heather Robinson

ICT deflation and productivity measurement
Gavin Wallis

Labour Market Trends

The new urban/rural indicator in the LFS
Catherine Barham and Nasima Begum

Public sector employment 2006
Donna Livesey, Andrew Machin, Bryce Millard and Annette Walling

Future articles

List is provisional and subject to change.

FEBRUARY

Treating R&D as a capital asset

Links between age and health and safety variables

Ethnicity data for JSA claimants

Hours of work

Patterns of pay: results of the Annual Survey of Hours and Earnings 1997 to 2006

MARCH

Linking ASHE to LFS

Measurement of procurement in National Accounts

Regional analysis of public sector employment

Reclassification of IoS from experimental to National Statistics

Market sector productivity