

Economic & Labour Market Review

Contents

Regulars

In brief	3
ONS Vacancy Survey Triennial Review – survey of users; Implementation of SIC 2007 across UK labour market statistics; Developments to Workforce Jobs; Royal Statistical Society Conference 2008, Nottingham	
Updates and forthcoming releases	5
Economic review	6
Independent forecasts	15
Key indicators	16

Features

Measuring the UK economy 2008: the National Statistician's perspective	18
<i>Karen Dunnell</i>	
Discusses the challenge of providing timely, reliable, consistent and coherent statistics that meet the demanding needs of users	
The effect of bonuses on earnings growth in 2008	30
<i>Harry Duff</i>	
Examines the effect of bonus payments as a major influence on pay growth in the Average Earnings Index	
Overview of UK National Accounts and Balance of Payments: Blue Book and Pink Book 2008	33
<i>Ross Meader and Geoff Tily</i>	
Published to coincide with both sets of estimates, including the introduction of a new method for measuring financial intermediation	
Annual Population Survey household data sets	44
<i>Kathryn Ashton and Katherine Kent</i>	
Aims to raise awareness of the above which allow for production of local area family and household labour market statistics	
Supply-side estimates of UK investment	52
<i>Graeme Chamberlin</i>	
Describes how the commodity flow model can be used for such estimates and discusses advantages and disadvantages of this approach	
Services producer price index (experimental) – second quarter 2008	57
<i>Ian Richardson</i>	
Illustrates the effects some industries are having on the aggregate indicator measuring movements in prices charged for services	
Data and support	
Key time series	60
National accounts aggregates; Gross domestic product: by category of expenditure; Labour market summary; Prices. Notes to tables; Concepts and definitions	
Directory of online tables	65
Contact points	68
ONS economic and labour market publications	69
Recent and future articles	70

Vol 2 No 10
October 2008 edition

Office for National Statistics

ISBN 978-0-230-21737-9
ISSN 1751-8326 (print)
ISSN 1751-8334 (online)

A National Statistics publication

National Statistics are produced to high professional standards set out in the National Statistics Code of Practice. They are produced free from political influence.

Not all the statistics contained within this publication are national statistics because it is a compilation from various sources.

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 us

The Office for National Statistics

The Office for National Statistics (ONS) is the executive office of the UK Statistics Authority, a non-ministerial department which reports directly to Parliament. ONS is the UK government's single largest statistical producer. It compiles information about the UK's society and economy which provides evidence for policy and decision-making and in the allocation of resources.

The Director of ONS is also the National Statistician.

Palgrave Macmillan

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

Companies and representatives throughout the world.

Palgrave Macmillan is the global academic imprint of the Palgrave Macmillan division of St. Martin's Press, LLC and of Palgrave Macmillan Ltd. Macmillan® is a registered trademark in the United States, United Kingdom and other countries. Palgrave is a registered trademark in the European Union and other countries.

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

Contacts

This publication

For information about this publication, contact the Editor, David Harper, tel: 020 7014 2036, email: elmr@ons.gsi.gov.uk

Other customer and media enquiries

ONS Customer Contact Centre
Tel: 0845 601 3034
International: +44 (0)845 601 3034
Minicom: 01633 812399
Email: info@statistics.gsi.gov.uk
Fax: 01633 652747
Post: Room 1015, Government Buildings,
Cardiff Road, Newport, South Wales NP10 8XG

www.statistics.gov.uk

You can find a downloadable version of this publication at www.palgrave-journals.com/elmr

Subscriptions

Annual subscription £210, single issue £37.50
To subscribe, contact Palgrave Macmillan, tel: 01256 357893,
www.palgrave.com/ons

Copyright and reproduction

© Crown copyright 2008

Published with the permission of the Office for Public Sector Information (OPSI)

You may re-use this publication (excluding logos) free of charge in any format for research, private study or internal circulation within an organisation providing it is used accurately and not 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 re-use of this material you must apply for a Click-Use Public Sector Information (PSI) Licence from:

Office of Public Sector Information, Crown Copyright Licensing and Public Sector Information, St Clements House, 2-16 Colegate, Norwich NR3 1BQ, tel: 01603 621000, www.opsi.gov.uk/click-use/index.htm

Printing

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

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

Typeset by Curran Publishing Services, Norwich

In brief

ONS Vacancy Survey Triennial Review – survey of users

The Office for National Statistics (ONS) is currently carrying out a triennial review of the Monthly Vacancy Survey in accordance with standing instructions from the Prime Minister's Office. As part of the review, ONS is seeking users of vacancy statistics.

The Code of Practice, and its associated protocols, requires ONS to ensure that the respondent burden will be managed by balancing the needs of users with the demands on suppliers (employers). The triennial review addresses this and other protocols by seeking the views of both users and respondents and by quantifying the costs to both business and government.

In September 2008, a triennial review questionnaire was sent to employers who have taken part in the vacancy survey to assess how long it takes them to complete the survey and whether there are any problems with supplying the information.

ONS now wishes to invite users of vacancy statistics to contribute their views. There are likely to be many users who access the information directly from the website and other publications of whom ONS is unaware, so it would like to assess if the vacancy statistics meet their requirements. ONS is therefore inviting all users to complete a short questionnaire, which should be returned by 30 November. To participate and receive a user questionnaire, please contact Kevin Davies, whose details appear below.

The completed report will be published in March 2009.

More information

The National Statistics Code of Practice and Protocols

www.ons.gov.uk/about-statistics/ns-standard/cop/protocols/index.html

Vacancy Survey Triennial Review Report (2005)

www.statistics.gov.uk/statbase/product.asp?vlnk=14019

Vacancy information

www.statistics.gov.uk/about/data/methodology/quality/downloads/summary_quality_report_vacancy.pdf
www.statistics.gov.uk/statbase/product.asp?vlnk=9390

www.statistics.gov.uk/cci/article.asp?id=406
www.statistics.gov.uk/cci/article.asp?id=1024
www.statistics.gov.uk/cci/article.asp?id=1987
www.statistics.gov.uk/statbase/tsdtimezone.asp

Contact

Kevin Davies

☎ 01633 456777

✉ kevin.davies@ons.gsi.gov.uk

Implementation of SIC 2007 across UK labour market statistics

The Office for National Statistics is currently formalising its plans to implement the United Kingdom Standard Industrial Classification of Economic Activities 2007 (SIC 2007). This entails preparing all data sources/outputs for the transition from SIC 2003 to the new classification. A subproject has been set up to coordinate an appropriate transition to the new classification for all industry-based series published in the Labour Market Statistics First Releases, related web outputs and briefings. The subproject therefore covers the release of Labour Force Survey, Annual Population Survey, Workforce Jobs, Average Earnings Index and other labour market statistics outputs, on a SIC 2007 basis.

This subproject is currently in the process of putting together a detailed plan and timetable for the publication of labour market statistics on a SIC 2007 basis. A more detailed article detailing the first dates of publication on the new basis will be published in *Economic & Labour Market Review* during the spring of 2009.

More information

www.statistics.gov.uk/cci/article.asp?id=2034

Contact

Christopher Jenkins

☎ 01633 455474

✉ christopher.jenkins@ons.gsi.gov.uk

Developments to Workforce Jobs

In December 2008, the Office for National Statistics is planning to benchmark the short-term employee jobs series to the latest estimates from the Annual Business Inquiry (ABI/1). This will cause revisions to the workforce jobs series published in the December Labour Market Statistics First Release and the January 2009 edition of *Economic & Labour Market Review* (ELMR). Other revisions to sources and methods will be made at the same time. As usual, a web article will be published in December to explain the revisions; this article will feature in the March 2009 edition of ELMR.

In the January 2009 edition of ELMR, there will also be a small change to the online Table 6.05 which shows employee jobs by industry, division and class. The series for industry 11 (oil and natural gas extraction) will no longer be published separately from the series for industries 10 to 12 (mining and quarrying of energy-producing materials). The series that can be derived for industries 10 and 12 is becoming disclosive to individual organisations. There has also been a change in the way the information is collected for divisions 10 and 12, which are now covered by the Short-Term Employment Surveys (STES), having previously been part of the non-standard collection known as Centralised Returns. Similarly, the collection of data for industry 60.1 (transport via railways) has transferred from Centralised Returns to STES, but with no impact to the level of publication.

Work to update the methods and systems used to produce workforce jobs continues, with the aim of making the changes in 2010 in conjunction with moving the series to the new Standard Industrial Classification (2007).

Contact

Nick Barford

☎ 01633 456783

✉ nick.barford@ons.gsi.gov.uk

Royal Statistical Society Conference 2008, Nottingham

The Annual International Conference of the Royal Statistical Society took place from 1 to 5 September at the East Midlands Conference Centre, Nottingham. The conference was officially opened by RSS President David Hand on the Tuesday and was followed by the Champion Lecture, given by Professor Jerry Friedman from Stanford University, whose presentation was on Fast Sparse Regression and Classification.

Many attended the pre-conference sessions on the Monday, which included courses on Modelling Longitudinal and Incomplete data and Six Sigma for Healthcare. A training day was also held for 'career-young' statisticians, covering topics on the diverse applications of statistics and developing a career in statistics. Of particular interest was a talk on Statistics in Sport by Tim Swartz from the Simon Fraser University, Canada, who spoke of the effect of the coin toss and optimal batting orders in one-day cricket. A panel session at the end of the day gave delegates the opportunity to ask the speakers about their careers.

The invited and contributed sessions were varied, covering all spectrums of statistics, including finance, law, education, healthcare, environment, official and social statistics and many more. The quality of the presentations was of a high standard and, with many to choose from, it was always difficult to decide which sessions to attend. Lunch facilities at the conference venue provided an excellent surrounding for discussions on the days' proceedings, both with the presenters and delegates alike.

This was an enjoyable conference and the RSS staff can be commended for their excellent organisation of both the conference and social events provided.

Next year's RSS Conference will take place in Edinburgh, from 7 to 11 September 2009, marking the society's 175th anniversary celebrations.

Information on the society's conferences should be directed to p.gentry@rss.org.uk

Contact

Timothy Duke

☎ 01633 455430

✉ tim.duke@ons.gsi.gov.uk

UPDATES

Updates to statistics on www.statistics.gov.uk

8 September

Producer prices

Factory gate inflation falls to 9.7% in August

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

9 September

Index of production

Manufacturing: 1.1% three-monthly fall to July

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

10 September

UK trade

Deficit narrowed to £4.6 billion in July

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

16 September

Inflation

July: CPI up to 4.7%; RPI down to 4.8%

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

17 September

Average earnings

Pay growth steady in year to July

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

Employment

Employment rate falls to 74.7% in three months to July

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

Public sector employment

Employment increases in Q2 2008

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

18 September

Public sector

August: £7.8 billion current budget deficit

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

Retail sales

Moderate underlying growth continues

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

29 September

Businesses

Registered businesses increase by 3.0%

www.statistics.gov.uk/cci/nugget.asp?id=1238

Net investment

Institutional investment estimated at £0.9 billion

www.statistics.gov.uk/cci/nugget.asp?id=396

30 September

Balance of payments

2008Q2: UK deficit of £11.0 billion

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

Business investment

1.0% fall in Q2 2008

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

GDP growth

Economic growth was zero in Q2 2008

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

Total market sector GVA

Zero growth in Q2 2008

www.statistics.gov.uk/cci/nugget.asp?id=2021

UK Government debt and deficit

Deficit 2.7% of GDP

www.statistics.gov.uk/cci/nugget.asp?id=277

1 October

Index of services

0.0% three-monthly movement into July

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

Productivity

Productivity growth rate decreases in Q2

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

FORTHCOMING RELEASES

Future statistical releases on www.statistics.gov.uk

2 October

New construction orders – August 2008

6 October

Investment by insurance companies, pension funds and trusts – Q2 2008

7 October

Index of production – August 2008

9 October

UK trade – August 2008

10 October

International comparisons of productivity

13 October

Producer prices – September 2008

14 October

Consumer price indices – September 2008**Digest of engineering turnover and orders – August 2008****MM22: Producer prices – September 2008****Monthly review of external trade statistics – August 2008**

15 October

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

16 October

Public and private breakdown of labour disputes

20 October

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

22 October

Average weekly earnings – September 2008

23 October

Retail sales – September 2008**SDM28: Retail sales – September 2008**

24 October

Gross domestic product (GDP) – preliminary estimate Q3 2008**Index of services – August 2008****Public sector finances: supplementary (quarterly) data****The Blue Book 2008 (web version)****The Pink Book 2008 (web version)**

28 October

Capital stocks, capital consumption and non-financial balance sheets

30 October

Consumer credit business – September 2008

31 October

Local area labour market statistical indicators – Q2 2008

Economic review

October 2008

Anis Chowdhury

Office for National Statistics

SUMMARY

Gross Domestic Product (GDP) output slowed in 2008 quarter two compared with the previous quarter - driven by slowing and subdued service sector output, together with a weakening in total production growth. Manufacturing output contracted sharply in the latest quarter following positive growth in the previous quarter. Construction output also declined in quarter two compared with a rise in the previous quarter.

On the expenditure side, household spending weakened in the latest quarter, recording virtually flat growth, while business investment growth continued to display weakness, contracting for the second successive quarter. The current account deficit widened in quarter two. The goods trade deficit narrowed slightly in the latest quarter. The labour market showed further signs of weakening in 2008 quarter two and going into the third quarter; average earnings remain relatively subdued. Public sector finances deteriorated in August 2008. Consumer price inflation increased further in August 2008 and was considerably above the government's inflation target. Producer output and input price inflation accelerated in 2008 quarter two and despite easing, continued to present inflationary threats in August 2008.

virtually stagnant growth. The slowdown in GDP growth was also led by the contraction in the output of the construction sector after showing positive growth in the previous quarter.

OTHER MAJOR ECONOMIES

Global growth showed mixed fortunes in quarter two

Data for 2008 quarter two for the other major OECD countries are now available. Performance appears to be somewhat mixed, although overall the picture is of weakening global growth compared with the previous quarter.

US GDP growth accelerated in 2008 quarter two achieving a rate of 0.8 per cent compared to 0.2 per cent in the previous quarter. The improvement in GDP growth was largely driven by increased consumer spending and which may partly be attributed to the government fiscal stimulus plan between late April and Early July. Net exports also contributed to growth for the fifth consecutive quarter helped by a weak dollar and imports contracting sharply. Government spending also boosted growth as well as non-residential investment. Residential investment on the other hand continued to contract - for the tenth consecutive quarter.

Japan's GDP weakened in the latest quarter. Growth contracted by 0.6 per cent in quarter two compared to an increase of 0.8 per cent in the previous quarter. Most components of GDP decreased. Lower growth was primarily led by contraction in private consumption. Residential investment also decreased in the latest quarter after having posted positive growth in the previous quarter. Business investment recorded virtually flat growth. Net exports also subtracted from growth in the second quarter - for the first time since 2004 quarter four.

Euro-zone growth deteriorated in the latest quarter. According to Eurostat's estimate, euro area GDP growth contracted by 0.2 per cent after increasing by 0.7 per cent in quarter one - the first contraction since the early 1990's. Growth for the three big mainland EU economies - Germany, France and Italy - also showed a weakening picture compared with the previous quarter.

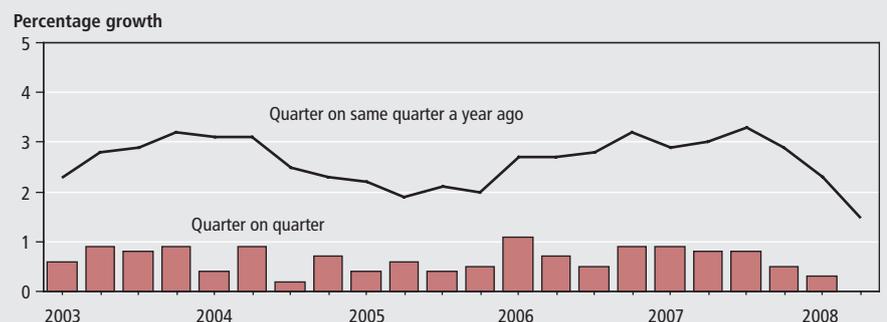
GROSS DOMESTIC PRODUCT

Second quarter growth of zero per cent

GDP growth for the second quarter of 2008 is estimated to have weakened compared with the previous quarter. GDP growth was flat, unrevised from the previous estimate and a deceleration from 0.3 per cent growth in the previous quarter. The estimate for the annual rate of growth was 1.5 per cent, down from 2.3 per cent growth in the previous quarter (Figure 1).

The slowdown in the UK economy in quarter two was largely due to subdued growth in service sector output. Industrial production growth continued to display weakness for the fourth successive quarter, with a deeper deceleration in output in quarter two. The fragility in total production was broad based but was mainly driven by a sharp contraction in manufacturing output growth. The output of the electricity, gas and water supply industries and mining and quarrying (including oil and gas) output recorded

Figure 1
Gross Domestic Product



German GDP contracted by 0.5 per cent in 2008 quarter two – for the first time in four years. This follows growth of 1.3 per cent in quarter one. All the components of demand with the exception of government expenditure contracted during the second quarter with the sharpest falls recorded for household consumption and construction investment.

French GDP growth contracted by 0.3 per cent in quarter two and the first decline since 2002 quarter four. Private consumption recorded virtually flat growth. Overall investment contracted markedly, led by a fall in household investment. Exports also subtracted from growth with exports registering the sharpest fall since 2001 quarter four.

Italian GDP fell by 0.3 per cent in the latest quarter following growth of 0.5 per cent in quarter one. The contraction was mainly driven by weakness in private consumption, investment and net exports.

FINANCIAL MARKETS

Share prices rally; pound depreciates

Equity performance has displayed volatility over the last couple of years. In recent quarters, equity growth has been particularly weak. In quarter two, there appeared signs of a modest rebound in equity prices, after having fallen substantially in 2008 quarter one. In 2008 quarter two, the FTSE All-Share index rose by 1.7 per cent. This follows a decrease of 9.1 per cent in the previous quarter. The rise was partly driven by the purchase of stocks in the heavily weighted mining and energy sectors. However, the FTSE All-Share index still remains low compared to the peaks seen in the second quarter of 2007 – and may be attributed to global growth concerns, particularly regarding the US economy, brought on by financial uncertainty and continued problems regarding the credit

squeeze. Going into the third quarter, the FTSE All-Share index appears to have reverted back to negative territory, with the index falling on average in the two months July to August by around 3 per cent.

In the currency markets, 2008 quarter two saw sterling's broad average value continuing to depreciate but at a lesser rate compared with the first quarter. The pound's value against the dollar fell by around 0.5 per cent compared to a depreciation of around 3 per cent in the previous quarter. Against the euro, sterling's value depreciated by approximately 4 per cent in the second quarter, following depreciation of around 7 per cent in the previous quarter. Overall, the quarterly effective exchange rate depreciated by approximately 3 per cent in 2008 quarter two after depreciating by approximately 6 per cent in the previous quarter (Figure 2). In the third quarter the sterling's depreciation against the dollar accelerated, falling on average by around 2 per cent in the two months July to August. Against the euro sterling's value was flat. Overall, the quarterly effective exchange rate depreciated on average by around 1 per cent in the two months July to August.

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

The lower rate of depreciation of the pound against the dollar in the latest quarter may have been partly a result of expectations amongst investors that the Bank of England was unlikely to cut interest rates further in the short to medium term given the current inflationary pressures facing the UK economy. This perception coincided with US interest rates being lowered by a further 0.25 basis points in April 2008 to 2 per cent following a 0.75 basis points reduction in March.

In contrast in the euro area, the further depreciation of the pound against the euro in the second quarter of 2008 may have come in response to greater expectations of interest rates being raised by the European Central Bank (ECB). In fact, interest rates were increased by 0.25 basis points in July 2008 to 4.25 per cent after having been at 4 per cent since June 2007. The main factor cited by the ECB for the rise was a perception of deteriorating inflationary expectations over the coming months and the need in particular to manage and anchor those expectations.

OUTPUT

Stagnant growth from falling services, construction and industrial output

GDP growth in 2008 quarter two was estimated at zero per cent, a deceleration from 0.3 per cent growth in the previous quarter. On an annual basis growth was 1.5 per cent, down from 2.3 per cent in the previous quarter.

Construction activity weakened in the latest quarter compared with the previous quarter. Construction output is estimated to have fallen by 0.5 per cent, after increasing by 1.1 per cent growth in the previous quarter. The decline was driven primarily by falls in new private and public housing, with falls also seen in the construction of private commercial and private industrial property. Comparing the quarter on the same quarter a year ago, construction output rose by 2 per cent, a slowdown from 3.5 per cent growth in quarter one (Figure 3).

External surveys pointed to sharp declines in housing activity in quarter two – attributing this to a combination of a slowing housing market and lack of availability of debt finance. The CIPS/Markit UK construction PMI (Purchasing Managers Index) reported that total construction contracted at a record pace in the second quarter to a headline balance of

Figure 2
Exchange rates

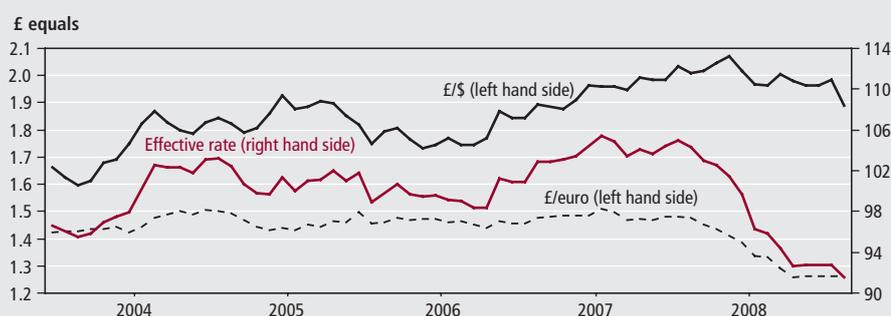


Figure 3
Construction output

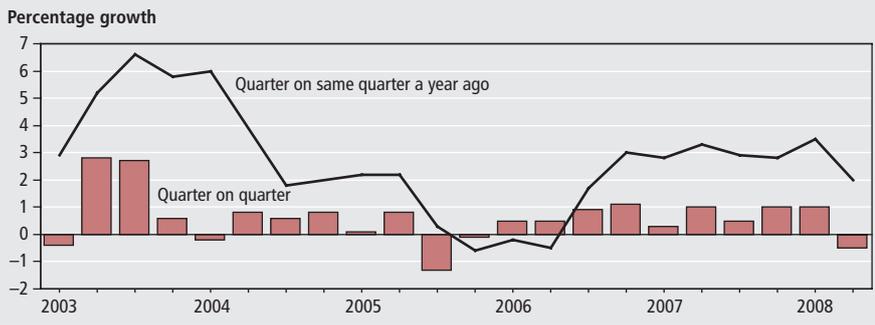
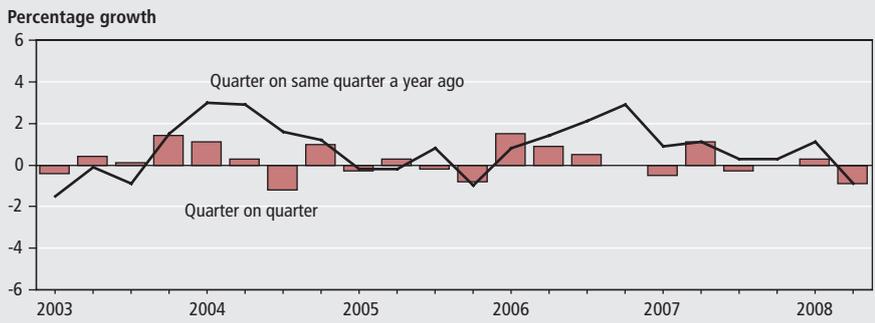


Figure 4
Manufacturing output



42.9 from 51.2 in the first quarter. In August 2008, the headline index deteriorated further to 40.5. The Royal Institute of Chartered Surveyors (RICS) construction survey for 2008 quarter two reported that workloads broke more than 11 years of uninterrupted growth to decline at the fastest pace since 1995 quarter three; the workload balance was at minus 19 in the second quarter from plus 1 in the previous quarter.

Total output from the production industries decelerated further in quarter two. Output fell by 0.7 per cent following a decrease of 0.4 per cent in quarter one. On an annual basis, output contracted by 1.1 per cent, down from 0.6 per cent growth in the previous quarter.

The weakness in total production was driven by a contraction in the output of the manufacturing industries. Manufacturing output fell by 0.9 per cent in the second quarter reversing positive growth of 0.3 per cent in the previous quarter. On an annual basis, manufacturing output fell by 0.9 per cent, after having increased by 1.1 per cent in quarter one (Figure 4).

The weakness in total production in quarter two compared with the previous quarter was also to a lesser extent driven by weakness in the output of the electricity, gas and water supply and mining and quarrying industries where output in both fell by 0.1 per cent. This compares with decreases of

2.1 per cent and 4.8 per cent respectively in quarter one. On an annual basis, electricity, gas and water supply output increased by 2 per cent in quarter two, down slightly from 2.3 per cent growth in the previous quarter. The output of the mining and quarrying industries contracted by 5.9 per cent on an annual basis compared to a fall of 5.1 per cent in the previous quarter.

Production growth has generally been slow since the third quarter of 2007 due to weakness in manufacturing for most of that period, and a contraction in mining and quarrying output, offset through some of this period by relatively strong electricity, gas and water supplies industry output. There was a modest pick up in manufacturing output in the first quarter of 2008 but this appears not to have been sustained into the latest quarter. It should

be noted that manufacturing output has displayed volatility in the recent past.

According to the latest Index of Production figures, in the three months to July, total production output fell by 1.1 per cent. Manufacturing output decreased by 1.1 per cent, mining and quarrying output decreased by 0.6 per cent and the output of the electricity, gas and water supply industries decreased by 1.3 per cent, compared with the previous three months.

The output of the agriculture, forestry and fishing industries increased by 0.4 per cent in the latest quarter compared with 0.1 per cent growth in the previous quarter. On an annual basis growth was 1.8 per cent, up from 1.5 per cent growth in the previous quarter.

External surveys of manufacturing for 2008 quarter two showed a deteriorating picture compared with the previous quarter with weaker domestic demand cited as a major factor, broadly in line with official figures. (Figure 5). In the past, it has not been unusual for the path of business indicators and official data to diverge over the short term. These differences happen partly because the series are not measuring exactly the same thing. External surveys measure the direction rather than the magnitude of a change in output and often inquire into expectations rather than actual activity.

The CIPS/ Markit manufacturing PMI indicated a slight contraction in the latest quarter; the headline index fell below the no change 50.0 mark to 48.5 from 51.0 in quarter one. In August, the headline index decreased further to 45.9. The CBI in its 2008 quarter two Industrial Trends survey reported continued weakness in its total order books with the balance at minus 8 in the second quarter, compared with minus 13 in the previous quarter. According to the monthly survey in September 2008, the total order books balance deteriorated markedly to minus 26. The BCC in its 2008 quarter two survey reported ominous

Figure 5
External manufacturing

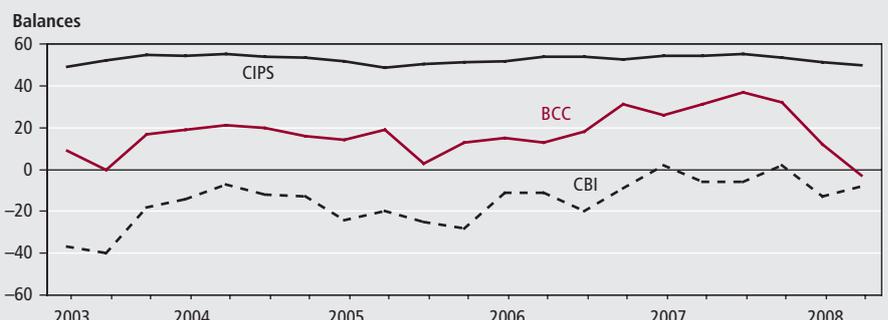


Figure 6
Services output

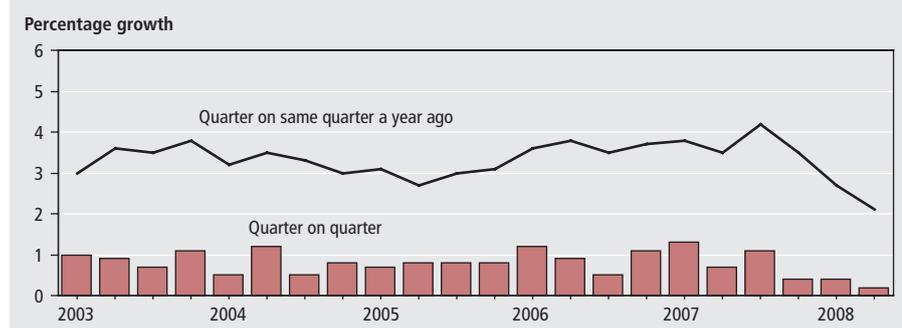
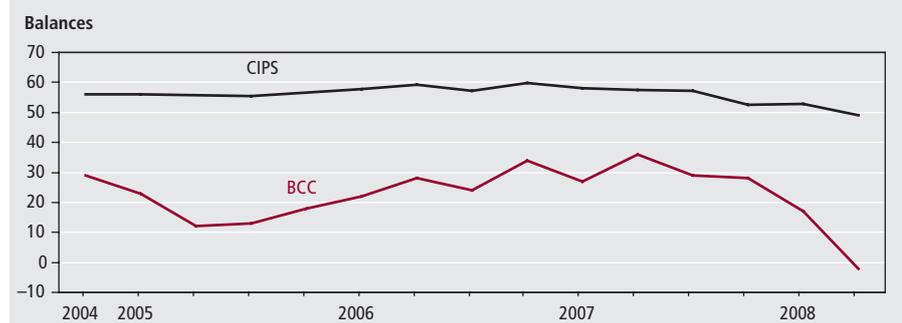


Figure 7
External services



results which highlighted serious risks of UK recession; the balances for home sales dropped by 15 points to minus 3 and the balance for home orders fell by 13 points to minus 5.

The service sector, the largest part of the UK economy, which has in the past driven UK economic expansion has made a negligible contribution to growth in the latest quarter. Services output growth showed below trend growth in the last couple of quarters compared to 2007.

Services output grew by 0.2 per cent in 2008 quarter two, a deceleration from growth of 0.4 per cent in the previous quarter but a marked slowdown from a recent high of 1.2 per cent recorded in 2007 quarter one (Figure 6). On an annual basis, services output expanded by 2.2 per cent, down from 2.6 per cent in the previous quarter.

Growth was recorded in varying degrees across all four broad sectors. The main contribution to the increase in services output growth came from transport, storage and communication where output growth accelerated to 1 per cent from 0.3 per cent growth in the previous quarter. On an annual basis, growth was 1.8 per cent, up from 0.7 per cent growth in the previous quarter. Total services output was also driven by fairly subdued growth in government and other services output of 0.2 per cent up slightly from 0.1 per cent growth in

the previous quarter. On an annual basis, growth was 1.3 per cent, up from 1 per cent in the previous quarter. This was offset by slower growth in the distribution, hotels and catering and business services and finance sectors. Distribution, hotels and catering output grew by 0.2 per cent, down slightly from growth of 0.3 per cent in the previous quarter. On an annual basis, growth was 1.2 per cent, down from 1.8 per cent in the previous quarter. Business services and finance output recorded virtually flat growth in the latest quarter registering growth of just 0.1 per cent in the latest quarter, a marked deceleration from 0.7 per cent growth in the previous quarter. On an annual basis, output decelerated to 3.2 per cent from 4.5 per cent in the previous quarter.

The external surveys on services showed a bleaker picture of service sector activity in 2008 quarter two. The CIPS/Markit services PMI survey pointed to a deteriorating picture of service sector activity. The average headline index in 2008 quarter two fell to 49.1, below the no change 50.0 mark, from 52.9 in the previous quarter. In August 2008, the headline index was stable at 49.2. It should be noted that the CIPS survey has a narrow coverage of the distribution and government sectors.

The CBI and BCC also painted a generally weak picture of service sector activity (Figure 7). The latest CBI service sector survey in August reported that for

consumer services, volume of business was broadly flat at plus 2 although an improvement from the minus 44 of the previous survey in June. In contrast, volumes for business and professional services, deteriorated at a record pace with the balance reaching minus 31 from plus 10 in the previous survey. The BCC survey for 2008 quarter two highlighted alarming falls in the domestic sector's services balances. The net balance for home sales declined 19 points to minus 2 and the net balance for home orders fell 21 points to minus 7.

The UK sectoral account shows the UK corporate sector continuing to be a net lender in 2008 quarter two, partially reflecting high gross operating surplus set against weak fixed capital investment. Despite the surplus, the overall debt level remains high due to the heavy borrowing between 1997 and 2001. The household sector remains a net borrower as income growth proved insufficient to finance total outlays. Households debt levels continue to be relatively high, although the quarterly interest payments on the loans are still being kept down by low interest rates as a proportion of income. The level of central government borrowing increased in 2008 quarter two from the previous quarter and still remains high due to higher rises in cash expenditure exceeding tax receipts. The current account of the UK balance of payments continues to be in deficit.

EXPENDITURE

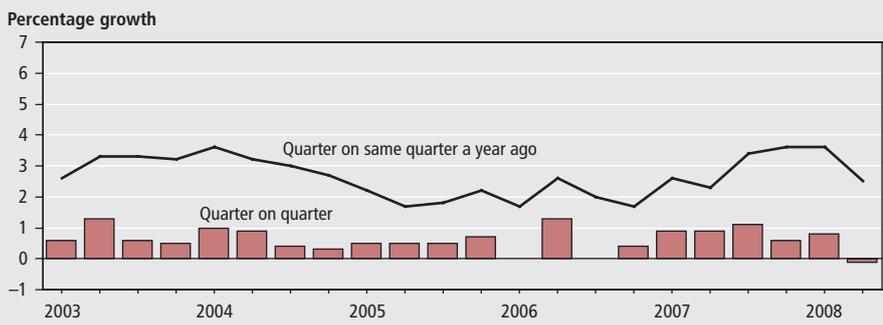
Consumers' spending contracts

Household consumption expenditure decelerated markedly in 2008 quarter two from the previous quarter. Household spending fell by 0.1 per cent compared to an increase of 0.8 per cent in the previous quarter. Compared with the same quarter a year ago, growth was 2.5 per cent, down from 3.6 per cent in the previous quarter (Figure 8). Lower spending was primarily driven by a fall in durable goods and services expenditure. This was offset by fairly strong growth in semi-durable goods and non-durable goods expenditure.

The weakening in consumer expenditure in the latest quarter may mainly appear to reflect the continued impact of the financial turbulence in the UK economy with pressures on real disposable income arising from modest wage growth coupled with higher inflation, particularly from higher fuel, utility and food prices.

One key indicator of household

Figure 8
Household demand



expenditure is retail sales. Retail sales growth weakened in 2008 quarter two compared with the previous quarter – driven by a sharp fall in June from strong growth in May. Retail sales volume growth slowed to 0.6 per cent in quarter two, a marked deceleration from growth of 1.7 per cent in the previous quarter. One reason perhaps for the slower growth in retail sales may have been due to the price deflator (that is, shop prices) where discounting appears not to be prevalent or widespread as was the case in quarter one. The price deflator fell on average by 0.2 per cent in quarter two compared with an average fall of 0.8 per cent in the previous quarter. In June, the price deflator increased by 0.6 per cent. This possibly suggests that the underlying picture regarding consumer finances is in a far weaker position than retail sales volume growth (this sentence isn't grammatical) of the previous quarter indicated, with retail sales growth being discount as opposed to being income led. In August the price deflator increased by 0.9 per cent, down from 1.6 per cent increase in July.

Retail sales figures are published on a monthly basis and the latest available figures for August 2008 showed a weakening picture compared with the previous month (Figure 9). In the three months to August the volume of retail sales fell by 0.8 per cent compared with an increase of 0.8 per cent in the three months to July. On an annual basis in August, the latest three months growth compared with the same three months a year ago slowed to 2.5 per cent from 3.8 per cent.

Retail sales can be disaggregated into 'predominantly food' and 'predominantly non-food' sectors. In the three months to August 2008, the fall in retail sales growth in volume terms was driven, by the 'predominantly food stores' sector and to a lesser extent by the 'predominantly non-food stores' sector. The 'predominantly food stores' sector fell by 1.3 per cent in

the three months to August compared with growth of 0.3 per cent in the three months to July. The 'predominantly non-food stores' sector decreased by 0.7 per cent in the three months to August following growth of 1.1 per cent in the three months to July. Within this sector there was a weakening in the 'household goods store' where growth contracted by 2.2 per cent in August compared with 0.5 per cent growth in July. There was also contraction in 'other stores' which fell by 1.3 per cent in August compared with flat growth in the previous month and in the 'non-specialised stores' where growth decreased by 0.4 per cent in contrast to a modest increase of 0.3 per in July. This was partially offset by a modest acceleration in the 'non-store retailing and repair stores' with growth of 0.8 per cent, up from 0.3 per cent in July. The 'textile,

clothing and footwear stores' grew by 1.1 per cent, although slowing sharply from 3.4 per cent growth in the previous month.

External surveys for retail sales presented a slowing picture of growth in 2008 quarter two compared to the previous quarter. The CBI reported an average balance of minus 16 in the latest quarter, down from plus 1 in the previous quarter. The latest CBI's monthly distributive trades' survey in September reported continued weakness in the retail sector with the sales volume balance at minus 26. The BRC reported average growth of 2.6 per cent in 2008 quarter two on a total sales basis, down from 3.3 per cent in 2008 quarter one. In August, growth had fallen further to 1.4 per cent (Figure 10).

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

There are two channels of borrowing available to households: i) secured lending,

Figure 9
Retail sales

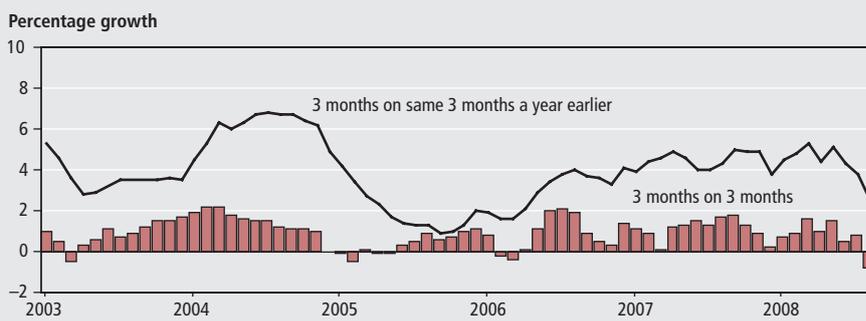
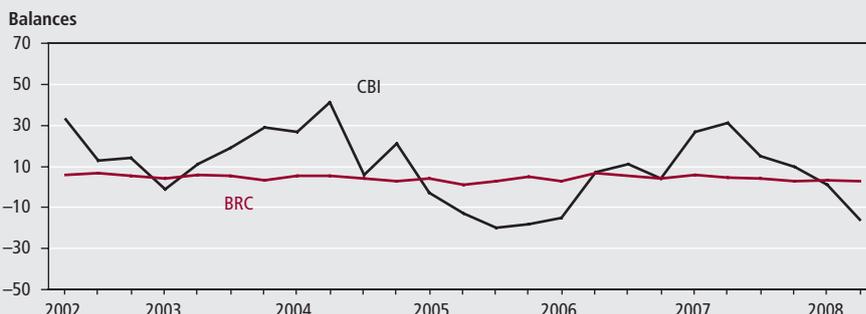


Figure 10
External retailing



usually on homes; and ii) unsecured lending, for example on credit cards. The impact of the credit squeeze may have intensified in the latest quarter. According to the Bank of England's Credit Conditions Survey, lending conditions were tightened in quarter two, that is, by applying stringent credit-scoring criteria and by decreasing maximum loan-to-value (LTV) ratios – with lenders reporting that they had reduced the availability of both secured and unsecured lending to households. The tightening was driven by the slowdown in the housing market, the reduced appetite for risk and the worsening economic climate.

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 but mainly driven by loans on secured dwellings. In the latest quarter, there was a substantial fall in secured lending which rose by around £11 billion compared with around £14 billion in the first quarter and from around £104 billion seen in 2007 – mainly reflecting the impact of the credit crisis. Unsecured lending in contrast rose to around £4 billion from around £3 billion in quarter but was still markedly below the amounts recorded in earlier years.

The slowdown in secured lending may have impacted on house prices in terms of lower growth. Nationwide and Halifax reported house prices falling by 11 per cent on the year in August 2008. The housing market plays a major influence on consumer expenditure patterns. Firstly, as a barometer of confidence in the economy and therefore a willingness to spend; secondly, in terms of demand it creates for household goods via house purchases; and thirdly, household expenditure may be linked to household equity withdrawal (HEW) – slower house price growth can signify lower equity growth and therefore decreasing purchasing power. The recent slowdown in house prices and the housing market generally may have affected all three of the above, compounded by the credit squeeze.

The weakness in household expenditure can also be partly attributable to the savings ratio. In 2008 quarter one households may have resorted to a draw-down in their savings to fund consumption which was reflected in the fall in the savings ratio. In quarter two, there appears to be signs of a retrenchment amongst households reflected in a modest rise in the savings ratio. The savings ratio increased by 0.4 per cents in

quarter two, reversing the contraction of 1.1 per cent in the previous quarter. The low savings ratio may also be symptomatic of the spending pressures faced by households.

BUSINESS DEMAND

Business investment contracts

Total investment fell by 2.8 per cent in 2008 quarter two compared with a fall of 2 per cent in the previous quarter. On an annual basis, total investment fell by 2.1 per cent, reversing positive growth of 0.3 per cent in the previous quarter. The decrease in total investment was due to both business and dwelling investment falling during the quarter (Figure 11).

Business investment continued to contract in the latest quarter. Business investment decreased by 1 per cent in the latest quarter, compared with 1.9 per cent growth in the previous quarter. On an annual basis, business investment grew by 1.2 per cent, a slowdown from 3.1 per cent growth in 2008 quarter one.

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

Evidence on investment intentions from the latest BCC and CBI surveys painted a picture of weakness. According to the latest quarterly BCC survey, the balance of manufacturing firms planning to increase investment in plant and machinery plummeted by 10 points to plus 2. The CBI's Quarterly Industrial Survey in 2008 quarter

two also reported a bleaker investment picture, with the investment balance of plant and machinery weakening to minus 24 from minus 18 in the previous quarter.

According to the sectoral accounts, the private non-financial corporate sector reported net lending of around £11 billion in the latest quarter, roughly similar to the previous quarter. Despite this, corporate sector debt levels remain high despite the sector surplus of recent years. The financial balance sheet shows the corporate sector had net liabilities of around £1.7 billion.

GOVERNMENT DEMAND

Government expenditure moderates

Government final consumption expenditure slowed in 2008 quarter two. Growth registered a fairly modest 0.5 per cent compared with growth of 1 per cent in the previous quarter. On an annual basis, growth was 2.1 per cent, similar to the rate in the previous quarter (Figure 12).

Public sector finances deteriorate

The latest figures on the public sector finances to August 2008 continued to illustrate a relatively weak position. The figures showed a higher current budget deficit together with an increased net borrowing situation – reflecting government expenditure continuing to exceed revenues. In the financial year 2008/09 to date, the current budget was in deficit by £19.3 billion; this compares with a budget deficit of £10 billion in the same period of 2007/08. Public sector net borrowing in the financial year 2008/09 to date was £28.2 billion; this compares with net borrowing of £16.5 billion in the same period of 2007/08. Slower growths in current receipts were exceeded by a larger increase in the rate of current expenditure,

Figure 11
Total fixed investment

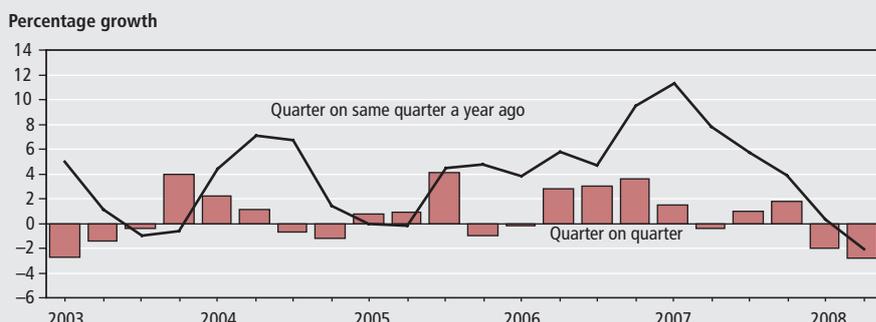
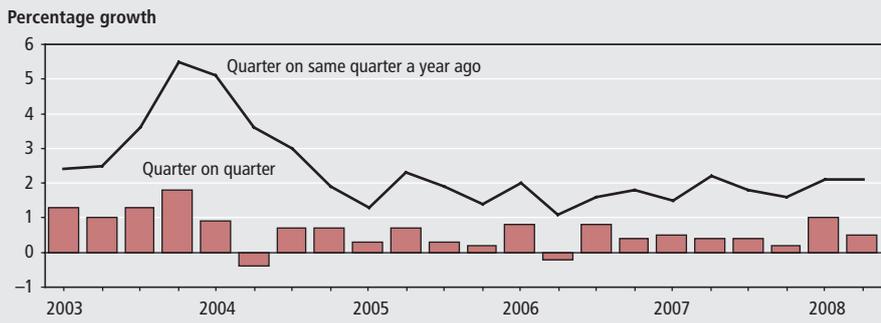


Figure 12
Government spending



particularly on capital projects – resulting in both a higher budget deficit and net borrowing.

The financial account shows that issuing both sterling treasury bills and government securities has financed this net borrowing. The latest quarter saw the outstanding amount of government securities at £500.5 billion and of Treasury bills at £20.6 billion.

Since net borrowing became positive in 2002, following the current budget moving from surplus into deficit, net debt as a proportion of annual GDP has risen steadily. Public sector net debt in August 2008 was 43.3 per cent of GDP, up from 36.4 per cent in August 2007. In the full financial year 2006/07, net debt as a percentage of GDP was 43.4 per cent.

TRADE AND THE BALANCE OF PAYMENTS

Current account deficit widens; goods trade deficit narrows slightly in quarter two

The publication of the latest quarterly Balance of Payments figures shows that the current account deficit widened in 2008 quarter two to £11.0 billion, from a revised deficit of £5.5 billion in the previous quarter (Figure 13). As a proportion of GDP, the deficit increased to 3 per cent of GDP from 1.5 per cent in 2008 quarter one. The widening in the current account deficit in 2008 quarter two was due to a lower surplus on income, partially offset by a fall in the deficit in current transfers. The surplus on income decreased by £6.0 billion to £4.5 billion and the deficit in current transfers fell by £0.4 billion to £3.5 billion. The lower surplus on income was mainly due to higher interest payments from UK securities dealers combined with lower losses recorded by foreign banks with UK operations.

The run of current account deficits

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

The figures in 2008 quarter two showed a continuation in the goods trade deficit but a slight narrowing from quarter one. The goods trade deficit was £23.1 billion in 2008 quarter one, down from a deficit of £23.2 billion in the previous quarter. Overall, there was a fall in imports together with stagnant exports – leading to a fall in the total trade balance to a deficit of £12.0 billion in 2008 quarter two from £12.1 billion in quarter one. Over the quarter in terms of growth, total exports flat and total imports fell by 0.5 per cent. Exports of goods grew by 1 per cent while goods imports fell by 0.8 per cent. Services exports fell by 2.7 per cent and services imports decreased by 3.3 per cent.

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 – that is liabilities exceeding assets – was negative to the tune

of £309.4 billion at the end of the second quarter of 2008 compared with net external liabilities of £361.6 billion at the end of the previous quarter. UK assets abroad decreased by £361.3 billion from the end of the first quarter to a level of £6407.2 billion at the end of the second quarter. UK liabilities decreased by £413.5 billion over the same period to a level of £6716.6 billion. The fall in the level of both UK assets and UK liabilities in the second quarter reflects net disinvestment and falls in the price of both equity and debt securities.

External surveys on exports reported a mixed picture for the latest quarter. The BCC reported that the export sales net balance rose by 12 points to plus 28. The latest CBI quarterly survey reported a weak picture. The export orders balance was minus 7 in 2008 quarter two, from minus 12 in the previous quarter. According to the latest monthly figures, the export balance was minus 25 in September.

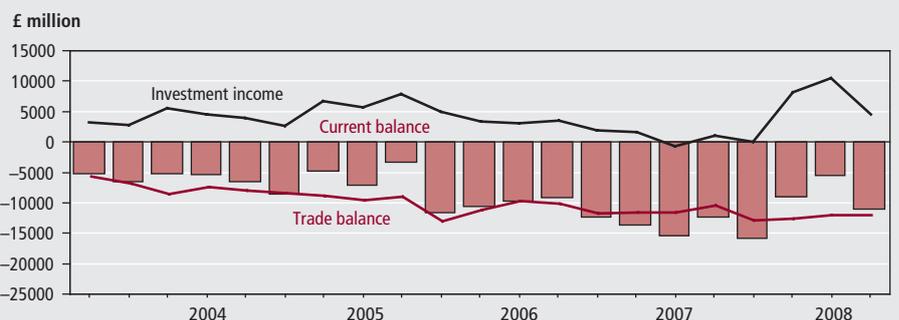
LABOUR MARKET

Labour market activity weakens further

The labour market in the latest reference period showed further signs of deterioration, but overall, still reflected a fairly buoyant picture – with relatively high levels of employment and low levels of unemployment seen throughout 2006 and in 2007. However, there was a broader weakening in indicators of the labour market in the latest reference period, reflecting the lagged effect of the slowdown in the economy which began in the third quarter of 2007 and which has quickened in the last two quarters, beginning to bite further and entrenching itself into a deeper and probably an extended period of subdued labour market activity.

The latest figures from the Labour Force Survey (LFS) pertain to the three-month period up to July 2008. Most indicators

Figure 13
Balance of payments



appear on the downside. There was a fall in both the number of people in employment and the employment rate. The number of unemployed people and the unemployment rate increased. The number of inactive people of working age increased but the inactivity rate was unchanged. Vacancies fell. Growth in average earnings (including bonuses) increased but earnings growth (excluding bonuses) was unchanged. Overall, average earnings remain subdued with weak real-wage growth.

Near record levels of employment continue despite the fall in employment in the current period, compared with the previous quarter. The number of people in employment decreased by 16,000 in the three months to July – the first fall since the beginning of 2007 - but rose 333,000 on a year earlier. The current working-age employment rate was 74.7 per cent in the three months to July 2008, down 0.2 percentage points from the three months to April 2008 but up 0.2 percentage points from a year earlier – leaving the employment level at 29.54 million. Unemployment levels on the other hand rose and for a fifth month in a row. The number of unemployed people increased by 81,000 in the three months to July 2008, a steeper increase compared to previous months and was up 72,000 from a year earlier, leaving the unemployment level at 1.72 million. The unemployment rate also rose, to 5.5 per cent in the three months to July 2008, up 0.2 percentage points on the three months to April 2008 and from a year earlier (Figure 14).

Looking at a detailed level, the decrease in the employment level was mainly driven by employees and part-time and full-time employment offset by increases in self-employment. Employees fell by 9,000 while the self-employed increased by 12,000, somewhat reversing the trend of earlier months. In terms of full and part-time workers, the numbers of people in full-time employment fell

by 5,000 and the number of people in part-time employment decreased by 11,000.

Workforce jobs increases

According to employer surveys, there was an increase of 26,000 jobs in June 2008 compared with March 2008. The largest quarterly contribution to the increase came from education, health and public admin (up 27,000), followed by agriculture, forestry and fishing (up 15,000). This was offset by decreases across a number of sectors with the largest decrease in distribution, hotels and restaurants (down 11,000) followed by manufacturing (down 10,000). Over the year, total workforce jobs increased by 142,000. Of the total, the largest contribution to the increase over the year came from education, health and public administration (up 43,000) followed by finance and business services (up, 40,000).

Claimant count increases substantially

The claimant count measures the number of people claiming the Jobseeker’s Allowance. The latest figures for August 2008 showed the claimant count level rose by 32,500 – the seventh consecutive monthly increase and the biggest rise since December 1992. On a year earlier the claimant count level increased by 56,300, to reach a level of 904,900. The claimant count rate in August 2008 was 2.8 per cent, up 0.1 percentage point from the previous month and up 0.2 percentage points from a year earlier.

Vacancies showed big fall

The number of vacancies was down compared to the previous quarter reflecting weaker demand conditions in the UK economy. Job vacancies fell by

56,900 – the biggest fall since 2001- and down from 53,200 from the same period a year earlier reaching a level of 613,200 vacancies in the three months to August 2008.

Inactivity level increases slightly

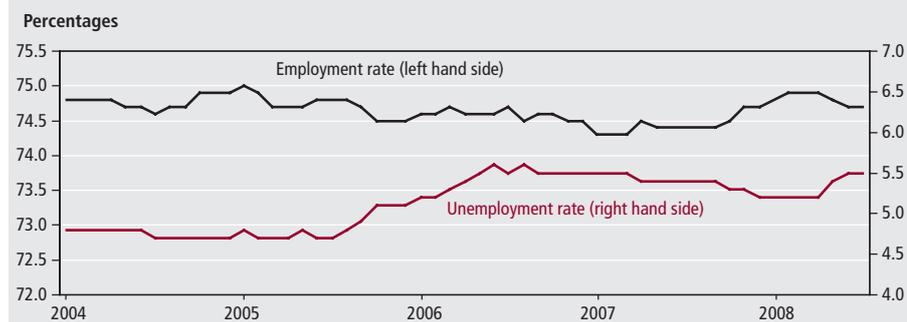
In level terms, the number of economically inactive people of working age increased by 4,000 over the quarter but fell by 97,000 to reach 7.86 million in the three months to July 2008. The largest rise in level of inactivity was recorded for those categorised as ‘student’ (up 21,000) followed by the ‘temporary sick’ category (up 10,000). This was partially offset by a number of decreases, with the largest fall in inactivity among those categorised as ‘long-term sick’ (down 14,000). The working-age inactivity rate was 20.8 per cent in the three months to July 2008, unchanged on the three months to April 2008 but down 0.4 percentage points from a year earlier

Average earnings growth subdued

Growth in whole-economy average earnings showed a relatively muted picture in the three months to July 2008. Average earnings including bonuses, increased by 3.5 per cent, up 0.1 percentage point from the previous month. Average earnings excluding bonuses rose by 3.7 per cent, unchanged from the previous period. Public and private sector earnings grew modestly in the latest month. In terms of the public and private sector split, the gap in average earnings (excluding bonuses) achieved parity in the latest month. Public sector earnings growth was 3.7 per cent, down 0.1 percentage points from the previous month. Private sector earnings grew by 3.7 per cent, unchanged from the previous month.

Overall, the numbers still point to a fairly buoyant labour market, with employment at high levels and unemployment at a fairly stable level. However, the slowing economy may have begun to show signs of a deeper turning point in labour market activity, particularly in terms of declining employment growth and larger increases in unemployment levels. Average earnings show stable but fairly modest growth, consistent with softening in labour market activity and increase in supply in the labour force.

Figure 14
Employment and unemployment



PRICES

Producer output and input prices accelerate

Industrial input and output prices are an indication of inflationary pressures in the economy. During the second quarter of 2008, output and input prices accelerated further from 2008 quarter one – another sign that a rise in world commodity prices was continuing to exert considerable influence in generating UK inflation through higher product prices. The rise in output prices suggests that firms were attempting to maintain their profit margins by passing on the higher costs of inputs to customers. However, the slower rate of growth of output inflation in the latest quarter compared to faster input price growth may suggest that firms may have been tempered, in part, from passing on higher input price rises to customers due to spending pressures faced by households – with a possible impact on firms' profits.

Input prices on average rose by around 28 per cent in 2008 quarter two. This compares with around 20 per cent in 2008 quarter one. On the core measure, which strips out the effect of food, beverages, tobacco and petroleum prices, input prices rose by an average of around 14 per cent in 2008 quarter two (12 month non-seasonally adjusted growth), an acceleration from growth of around 9 per cent in the previous quarter. The sharp rise in input prices came mainly on the back of rising crude oil and home food materials prices. According to the latest monthly figures, the annual rate of input price inflation rose by 26.0 per cent in the twelve months to August 2008, down from 29.3 in July – driven by a 65.4 per cent increase in the price of crude oil on the year.

Output prices grew on average by around 9 per cent in 2008 quarter one, an acceleration from growth of around 6 per cent in the previous quarter. The underlying

picture also suggests inflationary pressures. On the core measure which excludes food, beverages, tobacco and petroleum, producer output prices rose on average by around 6 per cent in 2008 quarter one, up from around 3 per cent in the previous quarter. The main contributions to the increase in output prices were provided by rises in petroleum products and food prices. According to the latest monthly figures, annual output price inflation eased slightly rising by 9.7 per cent in the twelve months to August, down from 10.3 per cent in July – mainly driven by petroleum products which rose 28.9 per cent on the year. Higher output and input prices appear to be fuelling consumer price inflation.

Consumer prices accelerates further and above target

Growth in the Consumer Prices Index (CPI) – the Government's target measure of inflation – increased further in August to 4.7 per cent, up from 4.4 per cent in July and considerably above the Government's 2 per cent inflation target (Figure 15).

The largest upward pressure came from housing and household services due to a rise in average gas and electricity bills this year, compared with a fall last year. There was a large, partially offsetting downward effect from the price of heating oil which fell by more than last year, following a decrease in the price of crude oil.

There were further large upward pressures from:

- food and non-alcoholic beverages where prices rose by more than last year. There was an upward effect from breakfast cereals, pizzas, meat and fruit.
- miscellaneous goods and services, particularly from mortgage arrangement fees which decreased by less than last year.

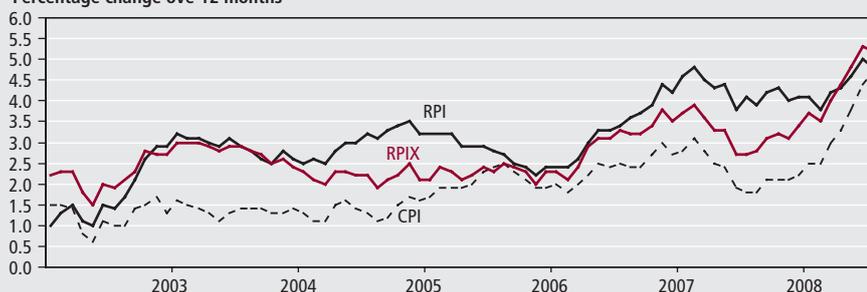
There was a large downward pressure from transport costs, mainly due to the price of fuels and lubricants which fell by more than a year ago. The average price of petrol fell by 5.5 per cent per litre between July and August this year, to stand at 113.3 pence, compared with a fall of 0.6 per cent last year. There was a further large downward pressure from communication where telephone charges were unchanged this year but rose last year.

Prices Index (RPI) inflation fell to 4.8 per cent in August, down from 5.0 per cent in July. The main factors affecting the CPI also affected the RPI. Additionally, there was a large downward contribution from housing where the effect came mainly from mortgage interest payments which were unchanged this year but rose last year and depreciation.

RPIX inflation – the all items RPI excluding mortgage interest payments – was 5.2 per cent in August, down from 5.3 per cent in July.

Figure 15
Inflation

Percentage change over 12 months



Independent forecasts

September 2008

UK forecasts

The tables below supplement the Economic Review by providing a forward-looking view of the UK economy. The tables show the average and range of independent forecasts for 2008 and 2009 and are extracted from HM Treasury's Forecasts for the UK Economy.

2008

	Average	Lowest	Highest
GDP growth (per cent)	1.2	0.6	1.6
Inflation rate (Q4, per cent)			
CPI	4.4	2.9	5.0
RPI	4.8	3.4	5.9
Claimant count (Q4, million)	0.93	0.80	1.00
Current account (£ billion)	-45.5	-67.4	-28.6
Public Sector Net Borrowing (2007-08, £ billion)	49.8	31.0	69.4

2009

	Average	Lowest	Highest
GDP growth (per cent)	0.5	-1.9	2.8
Inflation rate (Q4, per cent)			
CPI	2.2	1	3.9
RPI	2.3	0.4	4.3
Claimant count (Q4, million)	1.13	0.8	1.40
Current account (£ billion)	-44.2	-81.5	-20.9
Public Sector Net Borrowing (2009-10, £ billion)	56.2	30.0	79.6

Notes

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

Selected world forecasts

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

2008

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

2009

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

Notes

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

Key indicators

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

		Seasonally adjusted unless otherwise stated							
	Source CDID	2006	2007	2007 Q4	2008 Q1	2008 Q2	2008 Jun	2008 Jul	2008 Aug
GDP growth – chained volume measures (CVM)									
Gross domestic product at market prices	ABMI	2.8	3.0	0.5	0.3	0.0	..	..	..
Output growth – chained volume measures (CVM)									
Gross value added (GVA) at basic prices	ABMM	2.9	3.0	0.5	0.3	0.0	..	..	..
Industrial production	CKYW	0.7	0.4	0.2	-0.5	-0.7	-0.1	-0.5	..
Manufacturing	CKYY	1.8	0.7	0.0	0.3	-0.9	-0.5	-0.2	..
Construction	GDQB	1.0	2.9	1.0	1.0	-0.5	..	..	..
Services	GDQS	3.7	3.7	0.4	0.4	0.2	..	..	..
Oil and gas extraction	CKZO	-8.9	-2.5	0.6	-3.6	-0.1	0.1	-4.4	..
Electricity, gas and water supply	CKYZ	-0.6	1.2	2.7	-2.1	-0.1	2.1	1.0	..
Business services and finance	GDQN	5.9	5.9	0.6	0.6	0.2	..	..	..
Household demand									
Retail sales volume growth	EAPS	3.2	4.3	0.2	1.6	0.5	-4.2	0.9	1.2
Household final consumption expenditure growth (CVM)	ABJR	2.0	3.0	0.6	0.8	-0.1	..	..	..
GB new registrations of cars (thousands) ¹	BCGT	2,340	2,390	468	675	557	207	..	..
Labour market^{2,3}									
Employment: 16 and over (thousands)	MGRZ	29,027	29,233	29,421	29,538	29,558	29,538	..	..
Employment rate: working age (%)	MGSU	74.6	74.5	74.8	74.9	74.8	74.7	..	..
Workforce jobs (thousands)	DYDC	31,294	31,536	31,611	31,652	31,678	..	..	..
Total actual weekly hours of work: all workers (millions)	YBUS	928.6	936.3	937.0	948.4	942.0	947.2	..	..
Unemployment: 16 and over (thousands)	MGSC	1,671	1,652	1,599	1,612	1,672	1,724	..	..
Unemployment rate: 16 and over (%)	MG SX	5.4	5.4	5.2	5.2	5.4	5.5	..	..
Claimant count (thousands)	BCJD	944.7	863.3	816.1	796.5	826.5	844.6	872.4	904.9
Economically active: 16 and over (thousands)	MGSF	30,698	30,885	31,020	31,151	31,231	31,262	..	..
Economic activity rate: working age (%)	MGSO	78.9	78.9	79.0	79.1	79.1	79.2	..	..
Economically inactive: working age (thousands)	YBSN	7,861	7,946	7,911	7,878	7,876	7,863	..	..
Economic inactivity rate: working age (%)	YBTL	21.0	21.1	21.0	20.9	20.9	20.8	..	..
Vacancies (thousands)	AP2Y	597.1	656.6	675.6	687.3	649.1	649.1	631.4	613.2
Redundancies (thousands)	BEAO	139	128	111	111	126	138	..	..
Productivity and earnings annual growth									
GB average earnings (including bonuses) ³	LNNC	..	..	3.8	4.0	3.4	3.4	3.5	..
GB average earnings (excluding bonuses) ³	JQDY	..	..	3.7	3.8	3.7	3.7	3.7	..
Whole economy productivity (output per worker)	A4YN	..	..	1.6	0.6	..	..	..	..
Manufacturing productivity (output per job)	LOUV	..	..	..	..	..	1.2	0.9	..
Unit wage costs: whole economy	LOJE	..	..	2.1	2.6	..	..	..	..
Unit wage costs: manufacturing	LOJF	..	..	..	..	..	1.7	1.9	..
Business demand									
Business investment growth (CVM)	NPEL	-7.2	9.8	2.7	-1.9	-1.0	..	..	..
Government demand									
Government final consumption expenditure growth	NMRY	1.6	1.8	0.2	1.0	0.5	..	..	..
Prices (12-monthly percentage change – except oil prices)									
Consumer prices index ¹	D7G7	2.3	2.3	2.1	2.4	3.4	3.8	4.4	4.7
Retail prices index ¹	CZBH	3.2	4.3	4.2	4.0	4.4	4.6	5.0	4.8
Retail prices index (excluding mortgage interest payments)	CDKQ	2.9	3.2	3.1	3.5	4.4	4.8	5.3	5.2
Producer output prices (excluding FBTP) ⁴	EUAA	2.3	2.3	2.5	3.5	5.7	6.4	6.6	6.3
Producer input prices	EUAB	9.7	3.2	11.4	20.8	27.8	30.5	28.7	26.2
Oil price: sterling (£ per barrel)	ETXR	35.93	36.11	43.51	48.72	62.35	68.02	67.65	61.11
Oil price: dollars (\$ per barrel)	ETXQ	66.11	72.44	88.91	96.47	122.87	133.78	134.52	115.23

	Source CDID	Seasonally adjusted unless otherwise stated							
		2006	2007	2007 Q4	2008 Q1	2008 Q2	2008 Jun	2008 Jul	2008 Aug
Financial markets									
Sterling ERI (January 2005=100)	BK67	101.2	103.5	101.2	95.5	92.7	92.8	93.0	91.5
Average exchange rate /US\$	AUSS	1.8429	2.0018	2.0444	1.9789	1.9705	1.9658	1.9880	1.8889
Average exchange rate /Euro	THAP	1.4670	1.4619	1.4129	1.3212	1.2615	1.2636	1.2615	1.2614
3-month inter-bank rate	HSAJ	5.26	5.95	5.95	5.95	5.88	5.88	5.75	5.70
Selected retail banks: base rate	ZCMG						5.00	5.00	5.00
3-month interest rate on US Treasury bills	LUST	4.89	3.29	3.29	1.36	1.87	1.87	1.67	1.71
Trade and the balance of payments									
UK balance on trade in goods (£m)	BOKI	-76,312	-89,252	-24,050	-23,197	-23,140	-7,993	-7,667	..
Exports of services (£m)	IKBB	132,749	147,634	38,767	39,828	40,065	11,751	11,802	..
Non-EU balance on trade in goods (£m)	LGDT	-44,921	-47,788	-13,209	-12,361	-13,165	-4,774	-4,726	..
Non-EU exports of goods (excl oil & erratics) ⁵	SHDJ	118.0	116.5	116.4	125.7	127.8	125.0	132.7	..
Non-EU imports of goods (excl oil & erratics) ⁵	SHED	124.4	131.6	134.8	133.0	132.4	132.6	134.9	..
Non-EU import and price index (excl oil) ⁵	LKWQ	103.9	104.2	104.1	109.9	113.4	113.9	113.7	..
Non-EU export and price index (excl oil) ⁵	LKVX	101.5	102.5	104.0	106.4	108.1	108.4	108.2	..
Monetary conditions/government finances									
Narrow money: notes and coin (year on year percentage growth) ⁶	VQUU	5.1	5.8	5.8	6.8	5.7	5.7	5.8	5.0
M4 (year on year percentage growth)	VQJW	13.0	12.7	12.4	11.7	11.3	11.3	11.1	11.5
Public sector net borrowing (£m)	-ANNX	30,327	35,999	16,715	-2,276	22,582	8,827	-4,792	10,371
Net lending to consumers (£m)	RLMH	13,243	13,112	3,489	4,286	3,440	1,169	1,051	1,236

External indicators – non-ONS statistics

		2008 Feb	2008 Mar	2008 Apr	2008 May	2008 Jun	2008 Jul	2008 Aug	2008 Sep
Activity and expectations									
CBI output expectations balance	ETCU	11	18	0	0	2	-7	-13	-16
CBI optimism balance	ETBV			-23			-40		
CBI price expectations balance	ETDQ	19	22	23	29	30	39	32	26

Notes:

Source: Office for National Statistics

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

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

FEATURE

Karen Dunnell
Office for National Statistics

Measuring the UK economy 2008: the National Statistician's perspective

SUMMARY

The current economic conjuncture is a challenge for producers of statistics as well as for policy makers. This article discusses this challenge, in particular the challenge of providing timely, reliable, consistent and coherent statistics that meet the demanding needs of policy makers and other users. It also reviews aspects of latest published statistics, following the annual *Blue Book* update, to illustrate the nature of the challenge and assess progress in meeting it. It is not intended as an assessment of the current state of the economy. Rather, it is about statistical issues arising.

Between the third quarter of 1992, when the recovery from recession began, and the first quarter of 2008, the UK economy went through a period of sustained economic growth, averaging 3 per cent a year. Over the past year, however, following major problems in financial markets and a sharp increase in energy prices, growth fell sharply. In the second quarter, there was zero growth, and year-on-year growth had fallen to 1.5 per cent, compared with 3.3 per cent at its peak in 2007 Q3. This slowdown in growth has coincided with an increase in the rate of inflation, on the latest figures¹ to 4.8 per cent as measured by the retail prices index (RPI) and 4.7 per cent as measured by the consumer prices index (CPI). Mervyn King, Governor of the Bank of England, has said² that this is the 'most challenging period since the Monetary Policy Committee was set up in 1997'.

Independence of statistics

Just as the Governor has stressed the importance of having the right policy framework, it is important in these testing economic times to have the right framework for statistics. It is essential that people have confidence that the Office for National Statistics (ONS) provides the best possible objective statistics, be they for growth, inflation, unemployment or the Government's finances. The advent of statutory independence for official statistics is, therefore, very timely. It provides added assurance about the key economic numbers. ONS has no vested interest in producing

particular numbers and they are published separately from ministerial and policy statements.

There are many unofficial surveys and statistics which compete with official statistics. However, producers of some unofficial surveys and statistics are also business representative groups. It is not suggested that this influences the numbers they produce, but these survey sponsors have vested interests that might be seen to affect interpretation and the policy inferences they draw. Perception matters, as has been found over the years with official statistics. City analysts also have a vested interest in not being proved wrong. If they are taken by surprise, they can sometimes question the accuracy of ONS estimates rather than their own judgement, as happened recently with retail sales. But if ONS figures are a surprise, there is an obligation to explain them as clearly as possible and, if necessary, warn when they are likely to be erratic and when they are likely to be revised. ONS releases now include details of past revisions as an indication of the reliability of the initial estimates.

This is not to say that ONS figures can be 100 per cent correct. The economy is very complex. There are over 2 million active businesses, 31 million individuals active in the labour market and many more individual consumers, undertaking billions of transactions, including with residents in other countries. To make sense of this complexity, statistics are produced within a rigorous framework, with consistent definitions and scientifically constructed

samples. Even so, the best statistics can only approximate the 'true' values of what they are attempting to measure. This is why giving users as much information as possible about quality is very important. ONS has done a lot in this respect but needs, and wants, to do more.

The role of ONS statistics in policy

The new monetary policy framework has intensified both the demand for good economic statistics and the scrutiny to which statistics are subject. Every month, Bank of England staff systematically review latest statistics for the Monetary Policy Committee. ONS estimates are also the basis of the Government's fiscal framework. This central role in policy also means, of course, that the statistics are of keen interest to City analysts and the media. ONS welcomes this scrutiny even if, on occasion, there is a risk of the statistics being overinterpreted, going beyond their design capability or reasonable expectations of quality. Of course, there are areas where the Bank of England and HM Treasury and others have legitimate expectations that the quality will be improved. Last year ONS undertook a public consultation exercise that identified a number of areas as priorities for improvement, including service sector statistics, Average Weekly Earnings, National Accounts modernisation and migration statistics.

There are other ways in which the demands of policy makers have influenced the statistical agenda recently. Historically, policy makers have focused on changes in aggregate demand and activity: that is, economic growth. But the modern policy paradigm attaches importance both to growth and levels of demand and activity. The output gap – the difference between the levels of actual and trend output – is seen as a key determinant of inflationary pressure in the economy. It is also the basis of cyclical adjustment for the fiscal rules. This means that policy makers expect the best possible estimates of both levels and changes in gross domestic product (GDP).

Generally, surveys for short-term monthly and quarterly statistics are designed to produce the best possible estimate of changes, assuming an unchanged economic structure. Annual benchmark surveys, on the other hand, are designed to give best possible estimates of levels and of the economic structure. The definitive estimate of the level of GDP in current prices is produced by reconciling the three measures of GDP – income,

production and expenditure – through supply-use balancing.

Statistical offices typically do not produce estimates of trend output or of the output gap. Nor do most attempt to pronounce on the cyclical position of the economy. In most countries, including the UK, this tends to be the role of policy authorities and research institutes, such as the National Bureau of Economic Research in the US. However, official statistics provide the raw material on which such assessments are based.

An example of a response to a key policy need was the introduction of a series for market sector gross value added (GVA) – 'business output' for short. The Bank of England's analytic framework envisages prices being determined by the balance of aggregate demand and supply in the market sector. As a result, ONS developed, at relatively short notice, an estimate of market sector GVA measured from the production side. To understand why market sector GVA has behaved in the way it has and to forecast it, however, an expenditure measure is also needed. This is, therefore, unfinished business.

The role of unofficial surveys and statistics

ONS statistics form the bulk of the statistical evidence base for policy, but the Bank of England and HM Treasury rightly make use of all the available statistical evidence, including that produced by business organisations (such as the Confederation of British Industry (CBI), the British Retail Consortium (BRC) and British Bankers' Association) and individual businesses (for example, Halifax and Nationwide for house prices). All have a role to play.

Some external business surveys provide more timely indicators than ONS statistics though, generally by international standards, ONS estimates are very timely with no adverse effect on reliability. Moreover, it is not true, as is sometimes alleged, that one advantage of external surveys over official statistics is that they are quicker to pick up the contribution to activity of newly created companies. New companies are added to ONS's register for surveys two months after they have registered for VAT.

Generally, unofficial surveys and statistics do not fulfil ONS expectations of official statistics for the following reasons:

- some measure sentiment and expectations and not actual transactions

- some measure direction of change only (up or down), whereas official statistics also measure the magnitude of changes
- they are stand-alone, whereas official statistics cover the whole economy and have to be consistent with each other
- some relate to a single company, for example Nationwide and Halifax house prices
- they are confined largely to the organisation's members, and
- they are based on small samples

Samples for ONS surveys are more comprehensive, representative and vastly larger than those for unofficial surveys. Take, for example, retail sales: the CBI and the BRC surveys are both based on around 100, mainly large, retailers. ONS figures are based on a survey of around 5,000 businesses representing all retailers, from the largest superstores right down to corner shops. They also include specialist internet retailers and discount stores, which are not well-covered by non-official surveys. The rich and extensive samples used in official statistics are summarised in **Box 1**.

The challenge for ONS statistics: the economic jigsaw

ONS statistics cover all aspects of the economy: demand and activity, incomes, sectoral finances, balance of payments, labour market and prices. The challenge for ONS is that users want these statistics to be timely, reliable and coherent.

Timely statistics are required because policy makers are taking decisions which affect the economy with a lag. The earlier they get estimates of the current and recent position of the economy, the better informed their decisions should be. Of course, timely estimates also need to be reliable in the sense that they are not subject to large revision. Economic statistics also need to be coherent, that is, consistent with each other and with other information.

Timeliness and reliability and, the trade-off between them, while important issues, are well-trodden territory. These will, therefore, be dealt with briefly, the issue of coherence being discussed at greater length. The ONS preliminary estimate of quarterly GDP is one of the timeliest in the world, published just 25 days after the end of the quarter in question. Despite the estimate being based on only about 40 per cent of the data available for the final estimate, it is a reasonably reliable estimate. The average absolute revision to quarterly growth between the first estimate and the third estimate published 85 days

Box 1**Information base for key economic indicators**

Each year, ONS publishes 160 first releases on the economy, which averages one every other working day of the year. These releases are augmented by a range of reports, supplementary tables and experimental series. These provide a rich evidence base for making key policy decisions. The ever-changing way in which businesses innovate and organise themselves and the wide range of ways in which people can consume goods and services means that the collection, collation and distillation of these releases is a constant challenge.

Estimates of key short-term indicators are based on large and representative samples. For example, every month ONS collects:

- 120,000 individual price quotes for the RPI/CPI
- turnover data from 25,000 service sector companies
- turnover data from 7,000 manufacturing companies
- sales data from 5,000 retailers
- earnings data from 8,500 companies
- 11,250 individual price quotes from 5,200 companies in the manufacturing sector for the producer price indices

- through HM Revenue & Customs (HMRC), the value of the goods imported and exported by about 33,000 VAT-registered companies

Every quarter ONS collects:

- employment information from 52,000 households
- profits information from 1,700 companies and information on capital expenditure from 27,000 companies

There are also a number of important benchmark annual surveys used to provide balanced estimates of GDP (see Box 2). The most important of these is the Annual Business Inquiry (ABI), which goes to 62,000 companies, and collects information on a range of variables including sales, purchases, employment and capital spending.

While this large data collection exercise is essential for the production of timely and reliable economic statistics, ONS also has an obligation to minimise the form-filling burden on companies, particularly small- and medium-sized companies.

after the end of the quarter, when 80 per cent of the information relating to output is available, is 0.06 percentage points. Larger revisions occur later in the process: the total revision between the first estimate and that produced three years later is 0.21 percentage points. Moreover, longer-term revisions have tended to revise GDP growth up on average: historically, early estimates of growth tend to be biased downwards. This is a long-standing issue which ONS is seeking to address, as described in a recent article by Youll (2008).

Achieving coherence is a particularly difficult challenge, and the attempt to improve coherence as more information becomes available is a significant reason for longer-term revisions. Achieving greater coherence within, and between, economic statistics is a bit like trying to do a jigsaw:

- without the overall picture on the box lid to guide you, and
- without initially having all the pieces

Indeed, not only is there not the picture, the picture itself changes as it is compiled. Bits of the jigsaw are changed until there is a picture which makes economic sense.

There are a number of levels at which coherence can be assessed. At the highest level, does the overall economic picture make sense? It can be argued that the picture for the economy as a whole painted by ONS's final estimates for the last 15 years is broadly consistent. There

are no major puzzles. The profile of inflation appears broadly consistent with aggregate demand and supply and external cost pressures. Statistics for demand and activity appear broadly consistent with labour market indicators. One indicator of this is labour productivity, which demands that output and employment are measured consistently with each other (see ONS 2007). Again, there is no puzzle in the final figures. This year's *Blue Book* has not changed history much. The level of GDP is higher in all years from 1961 due to the incorporation of an improved method for measuring banking output. Annual growth in real terms is little changed, except for the period between 1997 and 2000 when financial sector activity was particularly strong, and the usual magnitude of revisions in the most recent years.

It might be argued that, given the relatively stable economic environment over the past 15 years up to last summer, this has been no great test. But this underestimates the inherent difficulty of what ONS is trying to do. Achieving coherence in early estimates, when limited information is available, is even more challenging. Some inconsistencies are inevitable. Looking back, the productivity slowdown at the end of the 1990s was a puzzle given the data available at the time, but upward revisions to output growth and improvements in the understanding of the determinants of productivity have largely resolved the puzzle.

Achieving coherence in the National Accounts: supply and use balancing

Achieving coherence within the National Accounts is a particular focus of ONS work. Initial quarterly estimates of GDP are based on the production measure of GDP and expenditure estimates are brought into line through adjustments. Definitive estimates of GDP are produced at the *Blue Book* stage by reconciling and balancing annual estimates of expenditure, income and production in current prices, around 18 months after the year in question, when comprehensive information on these measures becomes available. Typically, the three measures produce different estimates. A single, definitive GDP estimate can only emerge, therefore, after a process of balancing and adjustment, that is, through compiling the economic jigsaw. ONS is undertaking a programme of modernising its National Accounts systems and methods, with the first stage delivered in this year's *Blue Book*, as explained in **Box 2**.

Anatomy and coherence of the recent slowdown in the economy

Annual growth in GDP has fallen markedly over the past year, from 3.3 per cent at its peak in 2007 Q3, to 1.5 per cent in 2008 Q2. Quarterly growth was zero in the latest quarter. This section analyses in which sectors of the economy the current slowdown has occurred and whether the estimates of demand, output and labour

Box 2

Blue Book 2008

The UK National Accounts Blue Book is the result of the annual overhaul of the National Accounts. It has three main elements:

- compilation of supply and use tables
- benchmarking to annual surveys and data sources, such as the ABI and HMRC estimates of income and profits, and
- incorporation of major methodological improvements

One of the key uses of supply and use tables is to provide a framework for the analysis of the data used to arrive at a single estimate of GDP. As such, supply and use tables facilitate the balancing process that provides a means for making the three independent measures of GDP (expenditure, production and income) align to become the equal, giving the single, definitive estimate of GDP.

In the supply and use tables, which currently identify 123 products and industries:

- the supply table shows the supply of goods and services, by product and type of supplier, distinguishing output by domestic industries and imports
- the use table shows the use of goods and services by product. That is, how the supply of goods within the economy is consumed, through intermediate consumption in the production of the other products, final consumption, capital formation and exports

- additionally, the tables show the components of GVA: compensation of employees; mixed income, gross operating surplus and taxes and subsidies on production

Annual current price supply and use balancing was suspended for *Blue Book 2007*. This year's *Blue Book* saw its reintroduction and estimates for 2004 to 2006 were balanced. This represented the first phase of the modernisation of National Accounts methods and systems that will deliver incremental improvements in quality over the next three to four years (see Humphries 2008).

The main innovations this year were the use of new systems for current price supply and use balancing and a more decentralised approach to bring the experience and expertise of a wider group of people to bear. Future *Blue Books* will see:

- the expansion of the supply and use matrix, with more products and industries
- balancing in volume terms as well as current prices, and
- quarterly balancing to improve the coherence and reliability of the initial quarterly estimates

The main methodological change in this year's *Blue Book* is a new and improved method for banking sector output, known as Financial Intermediation Services Indirectly Measured.

An overview of all the main changes in *Blue Book 2008* is given in Meader and Tily (2008).

input give a coherent picture – that is, the state of the economic jigsaw.

It then briefly compares this slowdown with earlier comparable episodes. **Figure 1** shows the history of UK economic growth over the past 15 years or so. There have been two similar episodes between 2000 Q2 and 2002 Q1 and between 2003 Q4 and 2005 Q2. The current cyclical downturn may, of course, not be complete. Only the position to date can be looked at; it is not the role of ONS to forecast. The analysis in the charts is largely in terms of growth over a full 12-month period, to abstract from erratic quarter-to-quarter changes and to facilitate

comparisons with earlier episodes.³ It does not look in detail at the profile within the last 12 months and is not intended as an assessment of latest quarterly movements.

Accounting for the slowdown

Figure 2 attempts to shed some light on the slowdown in growth between 2007 Q2 and 2008 Q2 by identifying which parts of the economy are driving the downturn. The analysis is in terms of GVA. The four main sectors of the economy are identified: manufacturing, services, construction and an 'other' category (agriculture, forestry and fishing; mining, quarrying and other

extraction; and utilities). In two sectors, services and construction, the downturn so far has been a matter of slower year-on-year growth, rather than year-on-year falls in the level of output. But in the other two sectors, manufacturing and the 'other' category, growth over the past year has been negative. Manufacturing output swung from positive growth of around 1 per cent to a contraction of 0.9 per cent over the period. Annual growth in the 'other' category was –1.5 per cent in 2008 Q2, reflecting a fall in oil and gas extraction. Construction activity saw annual output growth of 2.0 per cent compared with 3.3 per cent a year earlier. The service sector is the largest part of the economy and here, annual growth of 2.2 per cent in 2008 Q2 was down from 3.5 per cent in the same quarter of 2007.

That annual growth in all the major sectors of the UK economy was lower in 2008 Q2 than 2007 Q2 suggests a broad-based slowdown. However, the relative contributions of each sector also depend on the proportion of total output they represent. With annual GVA growth falling from 3.0 per cent to 1.6 per cent, **Figure 3** plots each sector's contribution to the total 1.4 percentage points fall in output growth.

Figure 1
Real GDP growth

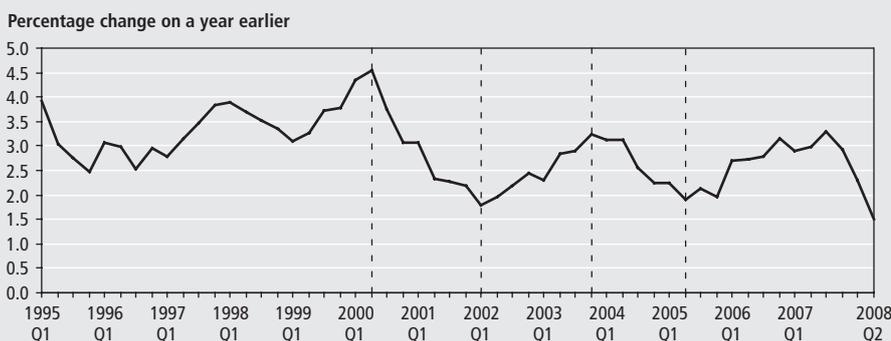


Figure 2
GVA growth: by sector

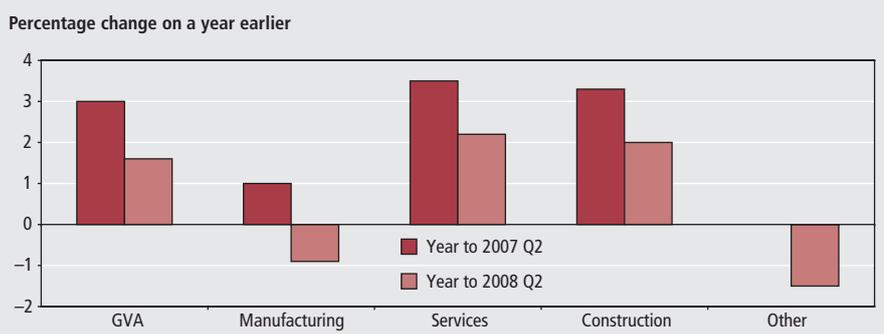
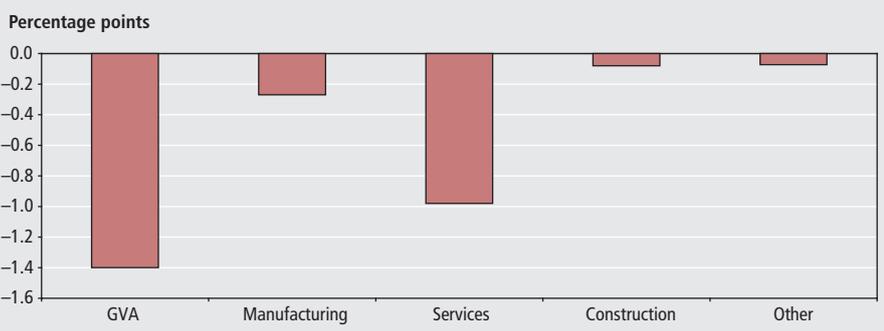
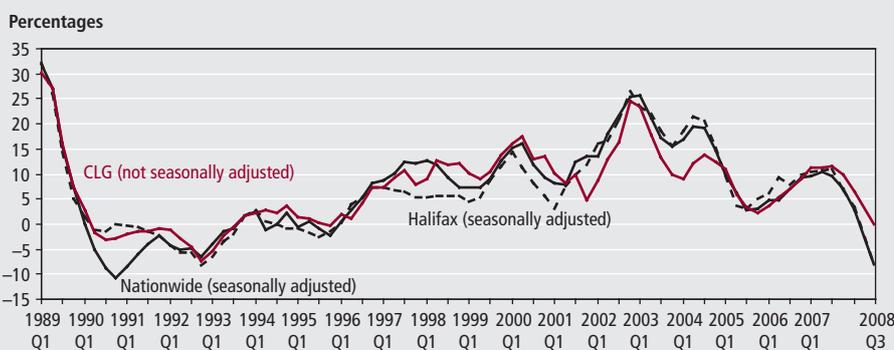


Figure 3
Contributions to GVA slowdown:¹ by sector



Note:
1 Difference in growth in year to 2008 Q2 and in year to 2007 Q2.

Figure 4
Annual change in house prices



Note:
1 Figures for 2008 Q3 reflect estimates for July only.

It is not surprising that most of the slowdown is accounted for by the services sector, which represents over three-quarters of the economy and contributes 1 percentage point of the decline in growth (or around 70 per cent of the slowdown). The contributions of the other components are much smaller, reflecting their lower weights. The service sector was also the dominant influence in the long upswing.

Manufacturing

Manufacturing output fell by nearly 1 per cent in the year to 2008 Q2, compared with positive growth of the same magnitude a year earlier. This deceleration contributes nearly 0.3 percentage points of the

slowdown in the growth of GVA. The slowdown was driven by 'engineering and allied industries' and 'other manufacturing', consistent with a fall in investment in transport equipment and 'other' machinery and equipment.

Construction

The construction sector is particularly vulnerable to the credit squeeze, particularly commercial construction and private housing, which accounted for around 35 and 25 per cent of new work, respectively, in 2007. Public sector construction, including infrastructure, accounts for most of the rest. Restrictions in the flow of housing finance and increases in its cost are summarised in

Box 3. House prices have also weakened, as shown in **Figure 4**. The Communities and Local Government (CLG) index, based on mortgage completion data, was 0.3 per cent lower in July than a year earlier. This was the ninth consecutive month in which the annual rate had fallen. Halifax and Nationwide indices, based on the mortgage approval stage, point to further declines in the CLG index. Construction companies have also suffered from an increase in their funding costs and a reduced availability of debt finance for new and existing construction projects.

Annual growth of construction output has slowed from 3.3 per cent in 2007 Q2 to 2.0 per cent in 2008 Q2 and there was a small fall in output in the second quarter compared with the first. But within the total, the picture is mixed. New private housing construction has declined at a faster rate than other parts of construction and is the main driver of the overall slowdown. In 2008 Q2, new private housing construction was over 16 per cent lower than a year earlier. However, over the same period, new infrastructure and private commercial work expanded by 21 per cent and nearly 3 per cent, respectively, although the latter fell in the second quarter compared with the first quarter. It also needs to be borne in mind that nearly half of construction output is in repair and maintenance, which is less volatile than new work. Repair and maintenance activity increased by 2 per cent in 2008 Q2, more than accounted for by housing, and was over 6 per cent higher than a year earlier. The strength of repair and maintenance work and infrastructure projects, particularly in the public sector, is likely to explain the relative strength of the official data compared with the unofficial business surveys.

Services

As the largest component of GDP, the performance of the services sector is the main contributor to the slowdown in output growth. The latest figures in 2008 Q2 show annual growth of 2.2 per cent compared with 3.5 per cent in 2007 Q2. Current growth is more subdued than in previous slowdowns but not by a significant margin. In 2002 Q1 and 2005 Q2, the respective growth in services output was 2.4 and 2.7 per cent.

Figure 6 displays the changes in output growth for the main components of the services sector compared with the previous year. Within services, the slowdown is fairly broad-based, with all industries except

Box 3

Housing finance

Latest data from the Bank of England show that, in August 2008, there were 135,000 mortgage approvals secured by individuals on dwellings in the UK, 51 per cent lower than in August 2007 and the lowest since January 1999. Numbers of approvals peaked at 374,000 in September 2003. Following this peak, the number of approvals declined to 246,000 in November 2004. From August 2005 until about July 2007, approvals remained fairly constant at around 300,000 per month. Since then, approvals have declined steeply. The fall in approvals has been a lot deeper in this housing downturn than the decline seen after the peak in approvals in September 2003.

Mortgage approval figures are split into three separate categories: for house purchase, remortgaging and other lending on dwellings. The category that has fallen the most is loans to individuals for house purchase, with only 32,000 mortgages approved during August 2008, as shown in **Figure 5**. This is 70

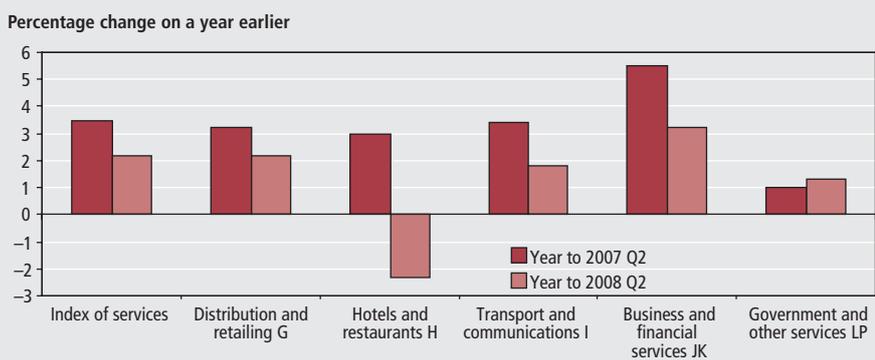
per cent lower than in August 2007 and is the lowest number since reporting began in 1993. Numbers peaked at 130,000 in November 2006 but have been declining since then, the steepest declines having occurred since July 2007, to the low of 32,000 seen in August 2008. However, the fall in approvals to individuals for house purchase is counterbalanced somewhat by borrowers who are remortgaging after an initial deal has come to an end. In this category, the decline has not been as steep. During August 2008, there were 64,000 mortgage approvals for remortgaging, 36 per cent lower than in August 2007 and the lowest since October 2001.

The cost of mortgage finance has also increased. For example, the interest rate for an average two-year fixed-rate mortgage (with 75 per cent loan to value) was 0.5 percentage points above Bank of England base rate in February 2008 but 1.6 percentage points above it in June. Since then, the margin over base rate has fallen slightly to 1.1 percentage points.

Figure 5
Mortgage approvals



Figure 6
Output growth in the service sector



government and other services exhibiting a decline in growth rate. The distribution and retailing industry saw growth fall from 3.2 to 2.2 per cent, and the hotels and restaurants industry saw strong growth of 3.0 per cent become a contraction of 2.3 per cent. Transport and communications output decelerated from 3.4 to 1.8 per cent and, finally, the financial and business services category recorded a fall in the growth rate from 5.5 to 3.2 per cent.

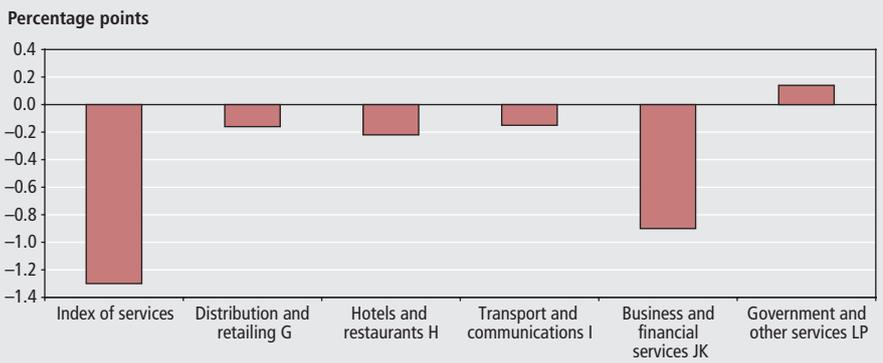
The significance of each of these output movements depends on the respective weight of the industry in the overall index. **Figure 7** breaks down the total 1.3 per cent deceleration into its respective contributions. Financial and business services accounts for the major share, contributing 0.9 percentage points of the fall. Although the hotel and restaurants sector saw the largest deceleration of over 5 percentage points, its contribution

to the slowdown in total service output was little more than 0.2 percentage points, reflecting its relatively small share in the total. The contributions of the other industries were even smaller, with distribution and retailing, and transport and communication each accounting for less than 0.2 percentage points of the slowdown. Government and other services partially offset the decline by 0.1 percentage points.

The contributions to the sharp slowdown in financial and business services output are analysed further in **Figure 8**. Growth in financial and business services in total fell from 5.5 per cent in the year to 2007 Q2 to 3.2 per cent in the year to 2008 Q2. The main contribution to the slowdown is the 'other business activities' component.

This category consists of legal activities, accountancy services, market research, management consultancy, architectural activities and technical consultancy, advertising and other business activities. A clearer view of its contribution to the fall in financial and business services growth is shown in **Figure 9**, where it is seen to account for the majority of the decline in the industry growth rate. This suggests that the impact of the credit crunch, along with uncertainty over demand and rising input prices, might be encouraging firms, particularly those in the finance and construction sectors, to reduce their costs by reducing purchases of services from other firms. Some support can be found for this hypothesis from the expenditure estimates discussed later, which show that falling capital spending is the main contractionary influence. Much of 'other business activities' on the output side is

Figure 7
Contributions to slowdown in service sector output¹



Note:
1 Difference in growth in year to 2008 Q2 and in year to 2007 Q2.

Figure 8
Output growth in business services and finance service sector

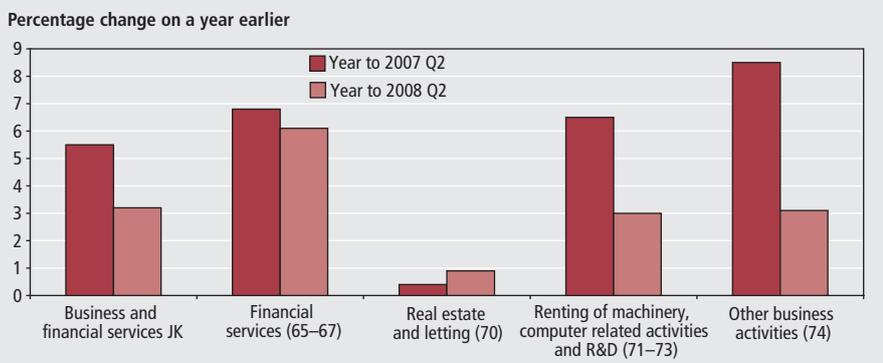
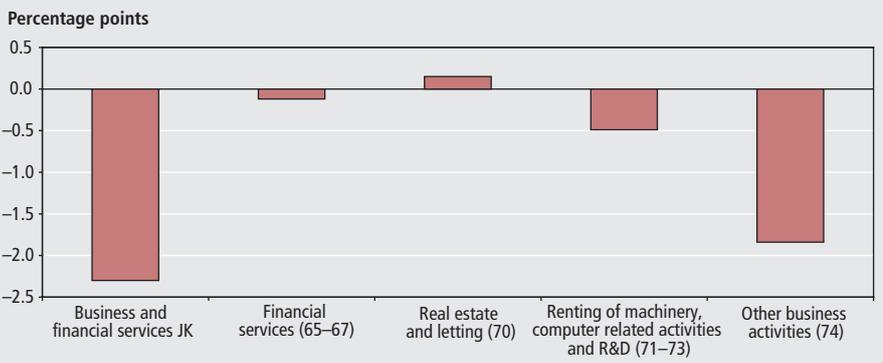
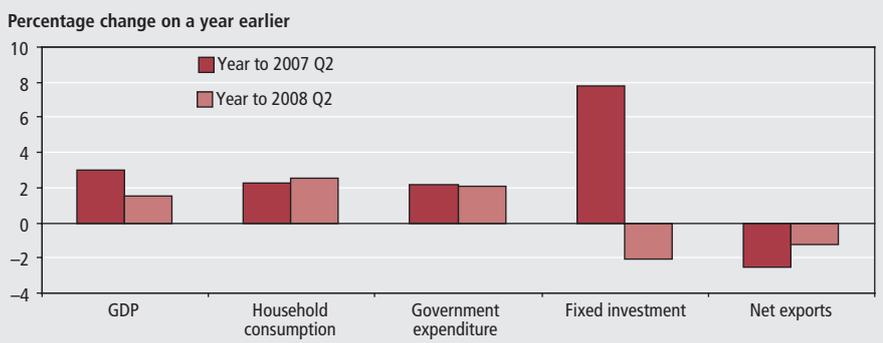


Figure 9
Contributions to slowdown in business services and finance¹



Note:
1 Difference in growth in year to 2008 Q2 and in year to 2007 Q2.

Figure 10
GDP growth: by type of expenditure



likely to be associated with capital projects on the expenditure side.

The positive contribution made by the real estate and letting industry may seem surprising. Lettings, including imputed rents, make up the majority of this component, and this business tends to be quite stable and relatively free of cyclical movements. The annual growth of financial intermediation fell only slightly compared with 2007 Q2 and this makes only a small contribution to the overall slowdown in financial and business services.

Expenditure components

It is also possible to analyse the slowdown from the expenditure side of the economy and compare it with the picture on the output side to see whether it looks consistent. It becomes apparent from **Figure 10** that the main contractionary influence from the expenditure side comes from fixed investment. Fixed investment was growing by around 8 per cent year-on-year in 2007 Q2 and is now contracting at about 2 per cent. Annual growth in household expenditure was marginally stronger in 2008 Q2 than a year earlier, though it has weakened in the last two quarters. Imports are growing more than exports, tending to reduce the growth of GDP, but to a lesser extent than a year ago.

As noted above, the biggest turnaround has come within fixed investment and, as such, it is worth investigating which type of capital investment has contributed the most to this decline. **Figure 11** shows that the main contributions to the 10 percentage point decline in investment growth are distributed fairly evenly between other machinery and equipment, dwellings, and other buildings and structures. Each of these categories contributes around 3 percentage points to the overall slowdown. Transport equipment investment has contributed 0.6 percentage points.

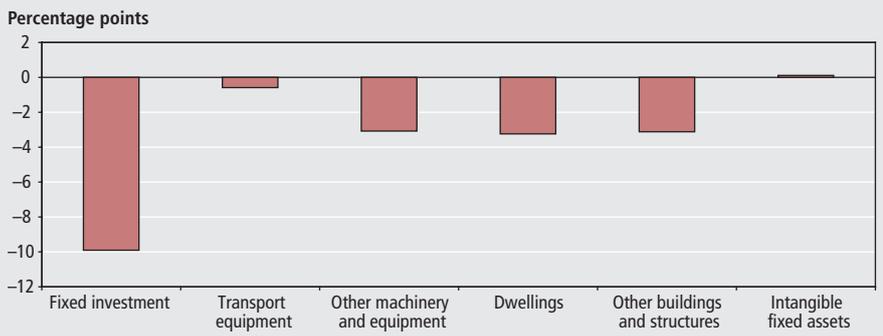
Comparisons with previous slowdowns

This section compares the slowdown in growth over the past year with two earlier slowdowns:

- 2000 Q2 to 2002 Q1, when annual growth slowed from 4.6 to 1.8 per cent, and
- 2003 Q4 to 2005 Q2, when growth slowed from 3.3 to 1.9 per cent

The estimates for the earlier episodes are more mature than those for the current slowdown, which are liable to revision. It

Figure 11
Contributions to slowdown in investment¹



Note:

1 Difference in growth in year to 2008 Q2 and in year to 2007 Q2.

also remains to be seen whether the current slowdown is complete; it is not ONS's role to forecast the future. Nevertheless the comparison is still of some interest.

The 2000 to 2002 slowdown was more pronounced and longer than the 2003 to 2005 downturn and the current downturn to date. Like the current downturn, the 2003 to 2005 episode was associated with a weakening in global economic conditions. In 2000 to 2002, the world economy was recovering from the aftermath of the East Asian and Russian financial crises at the end of the 1990s and was affected first by the collapse of the dot.com bubble, and then by the aftermath of the 11 September attacks in the US.

The 2003 to 2005 slowdown, on the other hand, was not instigated by a global macroeconomic shock, but was a more general 'soft period' of growth resulting from changes in domestic spending. The magnitude and length of this slowdown are reduced by revisions made for *Blue Book 2008*.

The service sector accounts for around three-quarters of the UK economy and, as such, it is not surprising to discover that in each of the three periods covered, the largest sectoral contribution to the overall growth slowdown comes from this sector. Although it is not easy to discern from **Figure 12**, the current slowdown and the 2000 to 2002 slowdown were the most service-driven: around 71 per cent of the decline in GVA is accounted for within this sector on both occasions (with the 2003 to 2005 slowdown contributing 67 per cent). It is also interesting to note that the manufacturing sector has been proportionately less important in the current period than in the two previous slowdowns, accounting for only 19 per cent of the overall change (compared with 31 and 21 per cent in 2000 to 2002 and 2003 to 2005, respectively). Construction has had a negative impact in the most recent periods but was an offsetting positive factor in the 2000 to 2002 slowdown. The 'other' sector has been a small negative

contributor in the most recent slowdown and in 2000 to 2002, but was a positive factor in the 2003 to 2005 period.

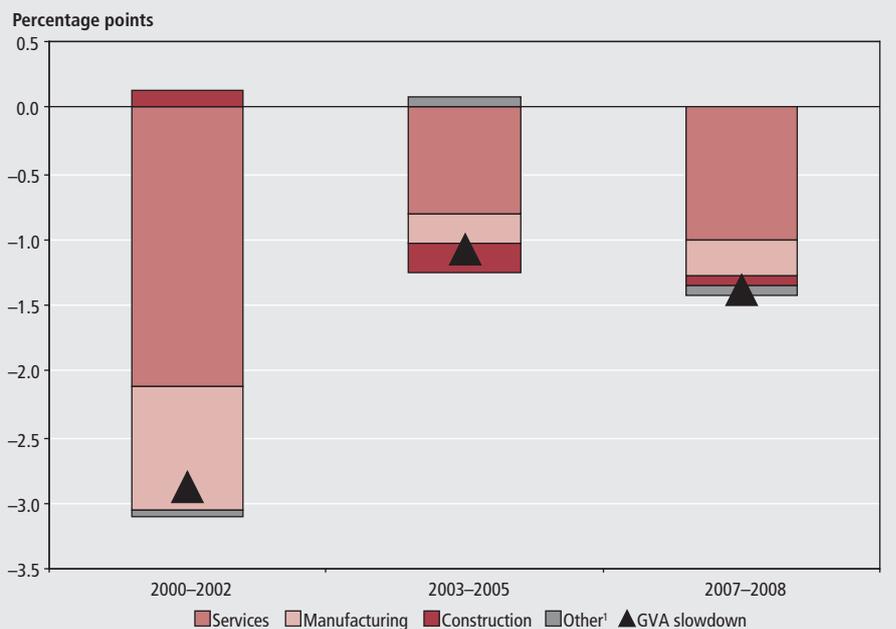
Given its dominant influence, it is interesting to look at the service sector in more detail, as in **Figure 13**. In the 2003 to 2005 slowdown, government and other services was the main contributory factor, followed by distribution, hotels and catering. In the most recent period, and in 2000 to 2002, the vast majority of the service sector slowdown came from business services and finance (accounting for 67 and 89 per cent, respectively). Distribution, hotels and catering has been the other key driver in the current period, as in 2003 to 2005.

Looked at from the expenditure point of view, as in **Figure 14**, the three episodes were very different from each other:

- the largest negative influence in 2000 to 2002 was net exports, consistent with the global nature of slowdown
- in 2003 to 2005 the main negative influences were household and government expenditure, reflecting the domestic nature of this episode, and
- in the current downturn, the main contractionary influence is capital expenditure, arguably associated with tightening credit conditions and corporate fears about future growth

It is immediately apparent from **Figure 14** that fixed investment has been a much greater negative factor during the current slowdown than in the earlier two periods, accounting for virtually all of the slowdown when looking at changes in year-on-year growth rates. Net exports and household consumption have made small positive contributions. However, the picture for household consumption is different looking at the latest quarterly movements: quarter-on-quarter growth fell from 0.8 per cent in 2008 Q1 to -0.1 per cent in Q2. Household expenditure on services fell by around 0.5 per cent in Q2, while expenditure on goods increased by 0.4 per cent, consistent with the profile for retail sales. Within goods, declining expenditure on consumer durables was offset by increasing expenditure on semi- and non-durable goods. As noted earlier however, this is the picture at present and the pattern may well

Figure 12
Contributions to GVA slowdown: by sector over slowdown periods



Note:

1 Other comprises Index of Production excluding manufacturing, and agriculture, forestry and fishing.

Figure 13
Contributions to slowdown in service sector output over slowdown periods

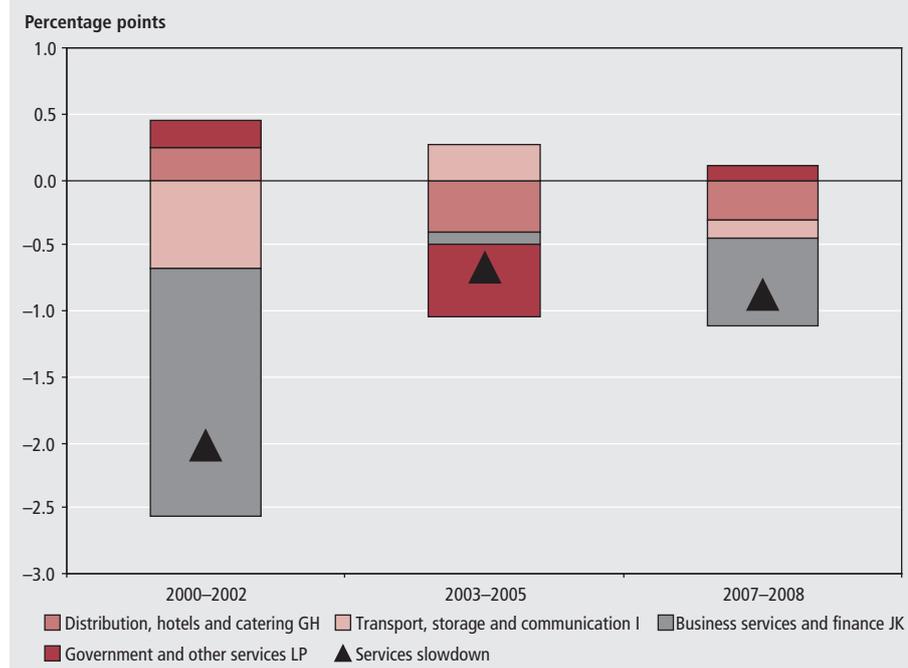
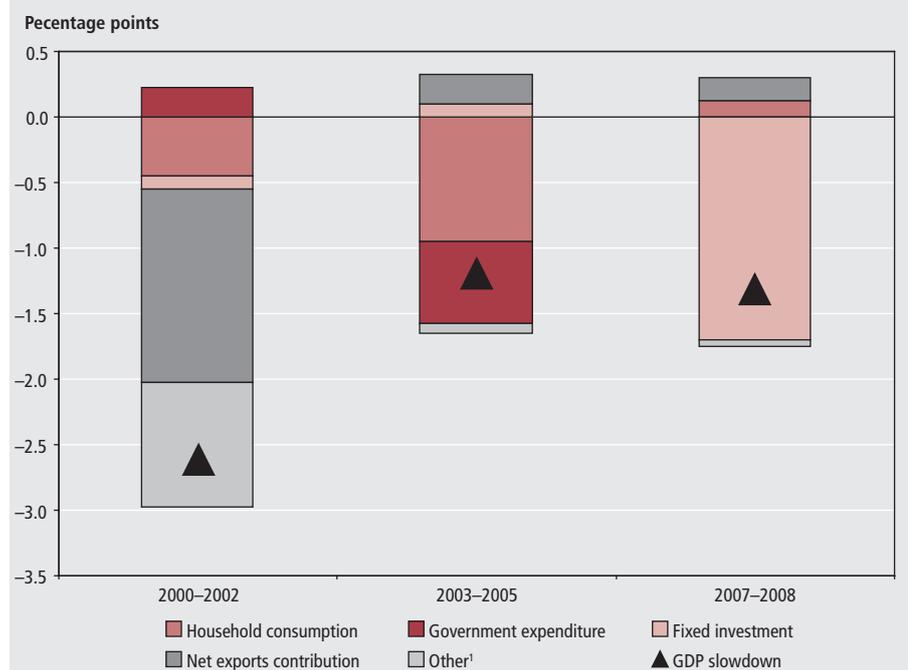


Figure 14
Contributions to slowdown in GDP: by type of expenditure over slowdown periods



Note:

1 Comprises inventories, consumption expenditure of NPISH and acquisitions less disposals of valuables.

alter as the estimates are revised in light of new information.

Labour market

This section first looks briefly at trends in the labour market since 1995, and then considers whether there are signs

of weakening in the labour market more recently and, if so, whether the industrial pattern is similar to that for output.

Trends since 1995

Since 1995, the UK working age population has increased by over 7 per cent, with the

largest increases taking place after 2004. Over the same period, the working-age employment rate has also increased, from 71 per cent in 1995 to above 74 per cent in 1999, where it has remained up to early 2008, as shown in **Figure 15**.

The path of the labour market is confirmed by estimates for working age inactivity and the unemployment rate shown in **Figure 16**. Inactivity rates have fallen by 1 percentage point, from 22 per cent in 1995 to 21 per cent in 2008. However, over the same period, the working-age unemployment rate has also fallen, from 8.8 to 5.5 per cent. The labour market's resistance to periods of weaker output growth in 2000 to 2002 and 2004 to 2005 is shown by a levelling-off in employment and unemployment rates after 2000.

The rising working-age population since 1995 and the rising or steady employment rate are consistent with the increase in the number of people in employment. The numbers of people employed has increased from just under 26 million in 1995 to just under 30 million in 2008, as shown by **Figure 17**. Over the same period, the number of jobs in the economy, as estimated by the Workforce Jobs Series has increased from just under 28 million to almost 32 million. The number of jobs is higher than the number of people employed, primarily because a person can hold more than one job.

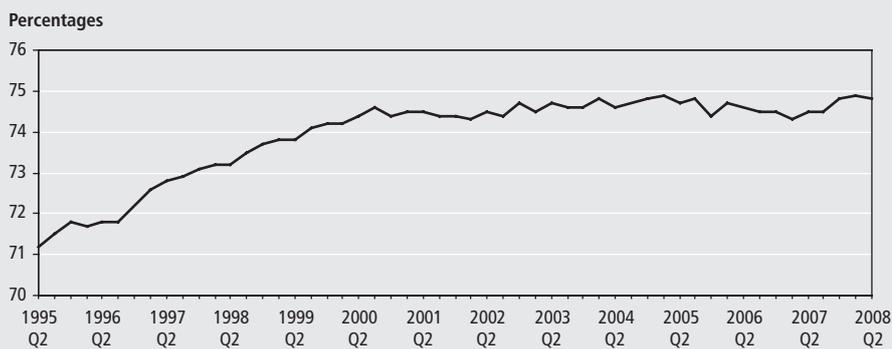
Recent labour market developments

Employment tends to react to changes in output with a lag because of the costs of hiring and firing workers. Therefore it is not surprising that weaker output growth has not yet caused large falls in employment. Moreover, in the first instance, employers can vary labour input through the number of hours worked, rather than laying off workers. This means that it is necessary to look at a broad range of labour market indicators to establish an overall picture.

Total weekly hours worked continued to increase in 2007. The estimate did fall in the most recent period, as shown by **Figure 18**, but this change is not uncharacteristic of other changes in the series. Average hours have fallen from above 33 hours in the mid-1990s to remain close to 32 hours in recent years.

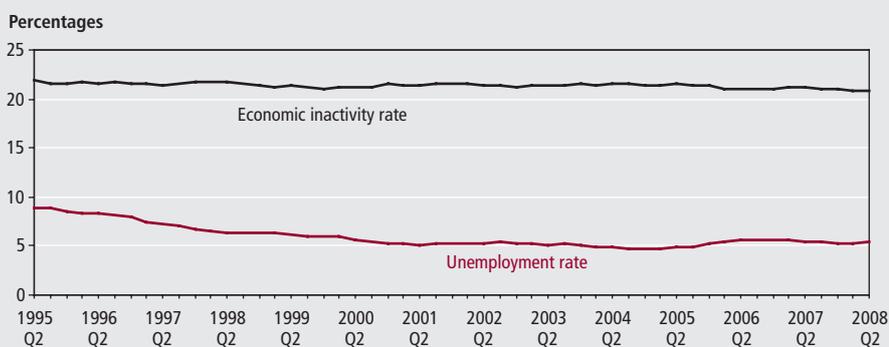
Between the end of 2000 and the beginning of 2006, unemployment levels remained close to 1.5 million, with no noticeable changes because of the output slowdowns previously identified. However, redundancy levels peaked at the beginning

Figure 15
Employment rate of working-age population



Source: Labour Force Survey

Figure 16
Unemployment and inactivity rates of working-age population

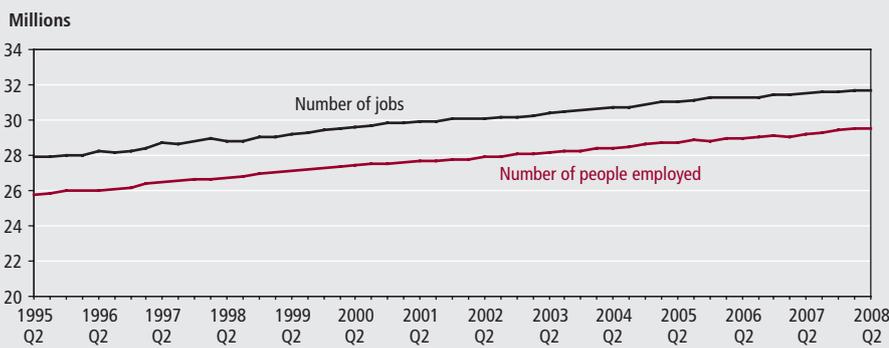


Source: Labour Force Survey

Note:

The working-age employment, unemployment and inactivity rates in Figures 15 and 16 will not add to 100 per cent, as the unemployment rate uses the economically active working-age population as the denominator, whereas the employment and inactivity rates use the working-age population.

Figure 17
Employment rates and jobs



Source: Labour Force Survey and Workforce Jobs Survey

of 1999 and also in 2001, as shown by **Figure 19**. Since 2006 unemployment levels have remained above 1.5 million despite the downward trend in redundancy levels.

In **Figure 20** it can be seen that the growth in total UK workforce jobs to June 2008 is slightly lower in comparison with the previous year. It can also be seen that jobs' growth is different for each sector of the economy. Only two sectors experienced falls in the number of jobs over the year to June 2008: manufacturing and construction. However, jobs' growth was notably lower

for finance and business services, which is an important part of the UK economy, comprising 21 per cent of all jobs in 2008. Sectors showing relatively large growth over the period were energy and water, and transport and communication, but these only account for 1 and 6 per cent of all jobs, respectively. In the latest quarter, there were declines in the number of jobs in manufacturing, construction, and distribution, hotels and restaurants.

Not surprisingly, through most of the period of sustained growth in output,

real earnings have been increasing. For example, growth in average earnings exceeded growth in retail prices by roughly 2 percentage points between 1996 and late-2006, as shown in **Figure 21**. Over the past two years, it can be seen that growth of average earnings has been similar to, or below, the RPI. Average earnings increases have been relatively stable, but the rate of inflation has increased sharply, as discussed in the next section.

Inflation

As GDP growth has fallen over the past year, inflation as measured by ONS's main price indicators has risen sharply, largely reflecting increases in world food and energy prices – see **Figure 22**.

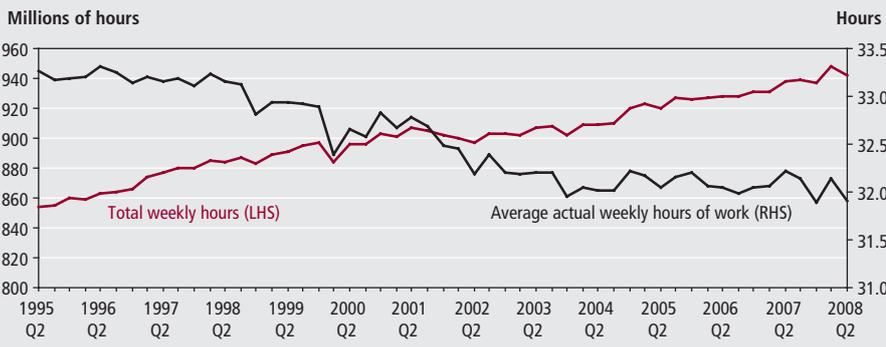
As measured by the CPI, the main measure of consumer price inflation for macroeconomic purposes and now used for the Government's inflation target,⁴ inflation was below 2 per cent between June 1998 and May 2005. Subsequently, the rate rose to a peak of 3.1 per cent in March 2007 before falling to a low of 1.8 per cent in September 2007. Since then, however, it has risen sharply, to a record 4.7 per cent in August 2008. This was the highest rate ever recorded in the official CPI, which began in 1997 and, based on a historical CPI series constructed using RPI data, the highest since early 1992.

On the more long-standing RPI measure, used for a variety of purposes including the indexation of various taxes and the uprating of social benefits, consumer price inflation varied between 0.7 and 4.4 per cent between 1995 and 2006. Since 2006, the RPI has mostly been above 4 per cent, rising to 5.0 per cent in July 2008, the highest rate since July 1991, before falling back to 4.8 per cent in August.

Producer price inflation, which measures the change in the prices of goods sold by manufacturers, has risen even more sharply than consumer price inflation over the latest 12 months, reflecting the greater openness of manufacturing to world cost pressures. In August 2007, the rate was 2.4 per cent, but this rose to 10.3 per cent in July 2008 before falling back slightly to 9.7 per cent in August.

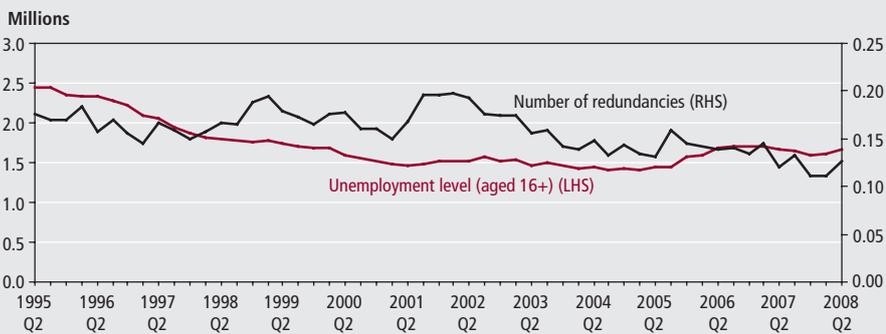
Figure 23 analyses some of the main drivers behind recent movements in the all items RPI. Between 2000 and mid-2007, food inflation varied between -2.1 and 5.6 per cent, but this rose from late-2007 to reach 12.8 per cent by August 2008, the highest rate since May 1980. Some of the main contributions to the August 2008 rate came from items such as bread, biscuits

Figure 18
Hours worked



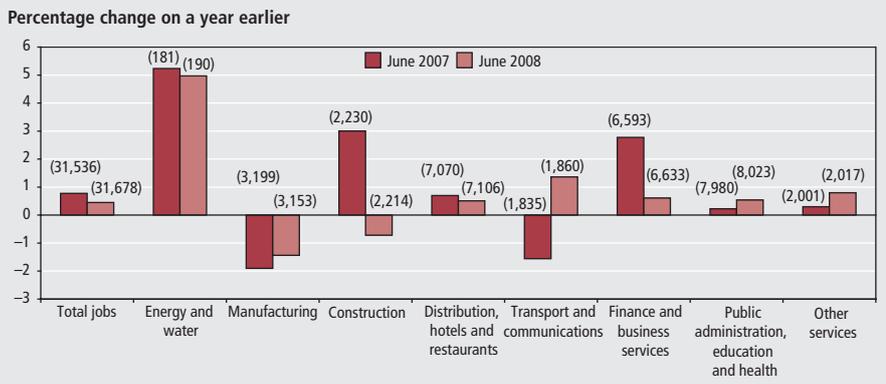
Source: Monthly Wages and Salaries Survey

Figure 19
People out of work



Source: Labour Force Survey

Figure 20
Jobs: by industrial sector



Note:

Thousands of jobs in brackets. Not all sectors are displayed, so sum of sectors does not equal total jobs.

Source: Workforce Jobs Survey

and cakes, milk and meats such as beef. Various economic articles have commented on some of the reasons behind these increases including: increased demand from developing nations, poor harvests resulting from adverse weather, exchange rates, increased distribution costs, and increased use of cereal crops for alternative fuels as oil prices have risen.

As oil prices have risen during 2008, so has the annual rate for motoring prices, which includes vehicle purchase,

maintenance, tax and insurance, in addition to petrol and oil. In July 2008, the annual rate for motoring reached 7.4 per cent, the highest rate since June 1992, before falling back in August to 5.0 per cent. The main driver behind this movement is petrol and oil, with an annual rate of 26.4 per cent in July falling back to 20.8 per cent in August.

Domestic fuels and utility prices have seen major changes over the last few years, again largely driven by world prices of oil and gas. The annual rate of increase for fuel

and light prices rose during 2004 and then again across 2006 to reach 29.7 per cent by December 2006. It fell back during 2007, but started rising again during 2008 as utility bills have increased. All of the major gas and electricity providers raised prices in the first few months of the year and again during the summer.

Conclusion

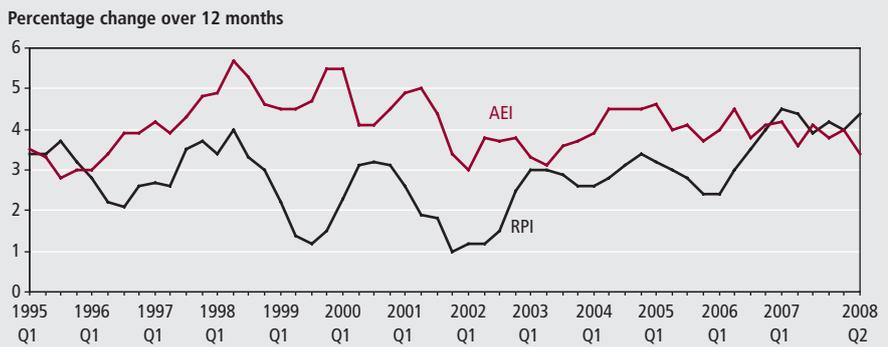
This article has reviewed the importance of a framework for statistics based on statutory independence, which provides added assurance that ONS is producing the best possible objective numbers. It has also explained how policy developments have intensified the demand for good economic statistics and the scrutiny to which they are subject. The need for timely, reliable and coherent official statistics has been shown. It is acknowledged that both official and unofficial statistics have a role in informing economic management, but that official statistics are more comprehensive, representative and consistent.

The task of producing early estimates while trying to achieve statistical coherence is like doing a jigsaw without a picture and without all the pieces; nevertheless, the evidence suggests the picture of the last 15 years painted by final estimates is reasonably coherent. Supply and use balancing of income, expenditure and output in the National Accounts, reintroduced in this year's *Blue Book*, is the main means for achieving coherence in final National Accounts estimates.

Some lack of coherence in early estimates is inevitable but, looking at recent estimates by way of illustration, there is a clear picture of the slowdown in output and information on expenditure is reasonably consistent with the output pattern. Also identified have been both some interesting differences and some similarities between the current slowdown and earlier episodes. However, the picture is bound to evolve as the estimates are revised as new information becomes available and, in due course, as improved methods are introduced.

Given the complexity of the economy and the high expectations of users, ONS has a very difficult job. Its outputs are comprehensive, based on rich data sources and are produced consistent with best statistical practice, in large part set out in international standards. Regular updates are published taking account of new information, new and improved methods are introduced and figures are revised over time. The annual *Blue Book* is a key vehicle for refining the picture of the economy

Figure 21
Retail prices index and Average Earnings Index



Source: ONS Retail Prices Index and Average Earnings Index

Figure 22
Prices

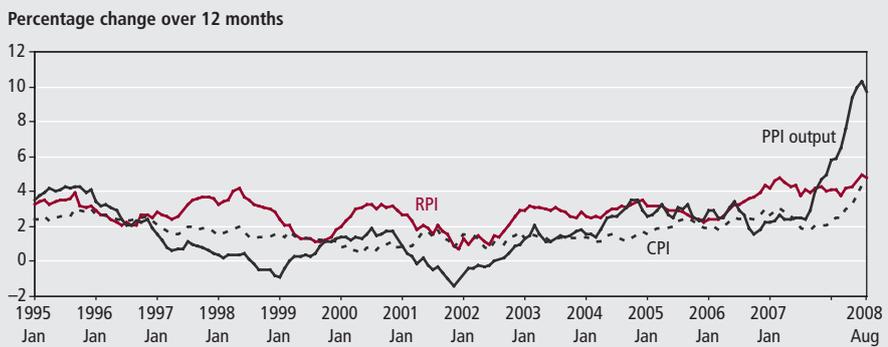
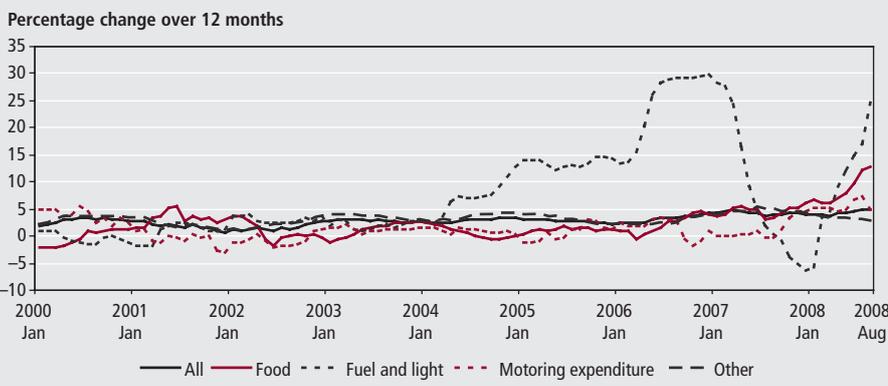


Figure 23
RPI: all items and selected components



to achieve greater coherence. What is done in the UK stands comparison with leading statistical offices in other countries, although improvement is a continuous goal.

Notes

- 1 This article uses figures published up to 30 September 2008, including Quarterly National Accounts consistent with *Blue Book 2008* estimates published on that day. The *Blue Book* itself will be published in electronic form on 24 October and in paper form on 21 November.
- 2 Speech at the Lord Mayor's Banquet for Bankers and Merchants of the City of

London at the Mansion House, 18 June 2008.

- 3 As the analysis is in terms of growth over a full 12 months, the charts relate to the slowdown in annual growth compared with 2007 Q2, even though the peak year-on-year growth in GDP was in 2007 Q3.
- 4 The CPI was adopted as the measure for the inflation target in December 2003. The target was set by the Government at 2 per cent, where it has remained: see Roe and Fenwick (2004) for the statistical background and Pike *et al* (2008) for an explanation of how the RPI is compiled.

ACKNOWLEDGEMENTS

The author is grateful to a number of colleagues in the Government Statistical Service in ONS and the Department for Communities and Local Government for their help in producing this article.

CONTACT

elmr@ons.gsi.gov.uk

REFERENCES

Humphries S (2008) 'Modernisation of the UK's National Accounts: progress and plans for Blue Book and Pink Book 2008', *Economic & Labour Market Review* 2(6), pp 30–2.

Meader R and Tily G (2008) 'Overview of UK National Accounts and Balance of Payments: Blue Book and Pink Book 2008', *Economic & Labour Market Review* 2(10), pp 33–43.

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

Pike R, Marks C and Morgan D (2008), 'Measuring UK inflation', *Economic & Labour Market Review* 2(9), pp 18–25.

Roe D and Fenwick D (2004), 'The new inflation target: the statistical perspective', *Economic Trends* 602, pp 24–46.

Youll R (2008) 'Dealing with potential bias in early estimates of GDP', *Economic & Labour Market Review* 2(7), pp 48–52.

FEATURE

Harry Duff
Office for National Statistics

The effect of bonuses on earnings growth in 2008

SUMMARY

This article examines the effect of bonus payments on the Average Earnings Index (AEI). The AEI is the National Statistic measure of short-term earnings growth. A separate article published last year in *Economic & Labour Market Review* (Duff 2007) describes the relationship between the AEI and the experimental series Average Weekly Earnings (AWE). AWE was the subject of a recent review (Weale 2008) and will remain as an experimental series until the recommendations of the review have been implemented.

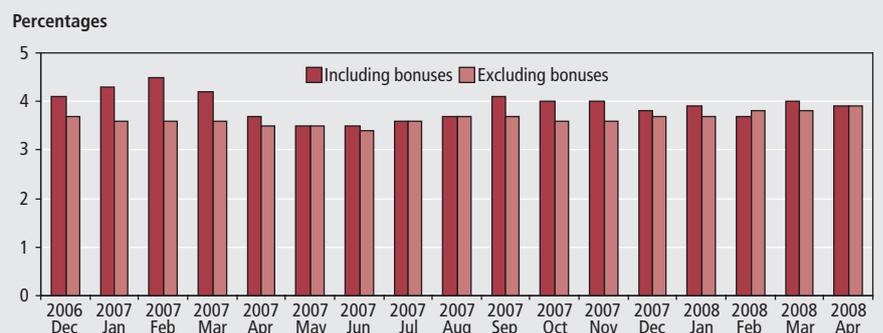
Bonus payments are a major influence on earnings growth as measured by the AEI. Changes in their level or the month in which they are paid can have a significant effect on growth rates. The majority of large bonuses are generally paid in the period December to April each year, and nearly 60 per cent of the total for that period is paid by the financial services sector. This article looks at the impact of bonuses on earnings growth during the period December 2007 to April 2008.

Since 2001, there has been increased interest in how bonus payments have been affecting earnings growth. The Office for National Statistics (ONS) responded to this interest by publishing information on how earnings growth for the whole economy was affected by changes in the level and timing of bonus payments. This information was first published in 2002, covering the period December 2001 to April 2002, when the majority of large annual bonuses were paid. Following feedback from users, ONS improved the format of the information, outlined in Freeman (2002). The information is now available for 2008, and this article looks at what this shows about the effect of bonus payments on the Average Earnings Index (AEI) between December 2007 and April 2008. **Box 1** describes the calculations underlying the AEI.

Bonus effects on AEI

The main measure of earnings growth is based on the seasonally adjusted AEI series and compares average earnings in the latest three months with the same period a year earlier. Calculating growth in this manner removes some of the fluctuations caused by changes in the timing of bonus payments and/or pay settlements. **Figure 1** shows the seasonally adjusted three-month average growth rates, both including and excluding bonuses. To see how individual companies affect growth, though, the non-seasonally adjusted series needs to be considered. From the AEI methodology, it is possible to calculate the approximate effect of a single company on the single-month growth, that is, earnings in the latest month compared with the same month a year ago. **Figure 2** shows the non-seasonally adjusted growth rate for the whole economy, both including and excluding bonuses.

Figure 1
Three-month average earnings growth, including and excluding bonuses, seasonally adjusted



Box 1

How the AEI is calculated

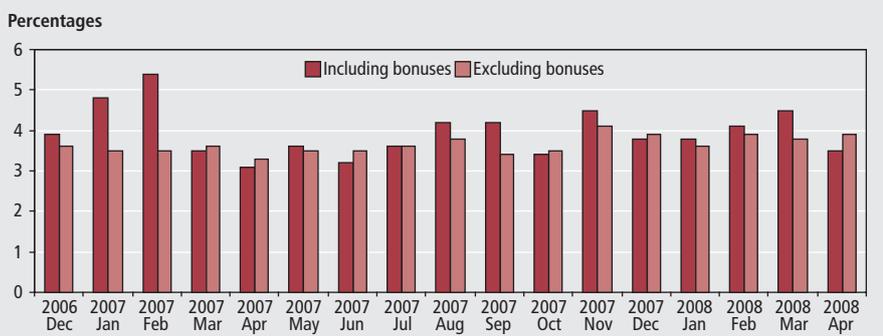
The AEI is the main measure of how levels of pay are changing in the Great Britain economy. Information is collected from a sample of around 8,500 companies each month in the Monthly Wages and Salaries Survey. Data are collected on the number of employees and the total pay bill for the month. Companies are also asked to supply the amount of bonus payments and arrears payments contained in total pay.

To calculate the AEI, the percentage change on the previous month in the average weekly pay per employee is calculated for each company in the sample (for example, the change

from March to April). This means that only companies that have provided data for the current and the previous month are included in the calculation of the AEI. The percentage changes for each company are then weighted together to give a monthly change for the whole economy. The whole economy change is applied to the index value for the previous month to give the latest index value. Separate index values are calculated for pay including and excluding bonus payments, which can indicate if bonus payments are changing at a different rate from other elements of pay.

Figure 2

AEI annual growth, including and excluding bonuses, non-seasonally adjusted



Earnings growth in 2008

Looking at the non-seasonally adjusted figures in Figure 2, for the months from December 2007 to April 2008, there were some quite large fluctuations in earnings growth including bonuses, whereas growth excluding bonuses was more stable. Earnings growth excluding bonuses lies within the range 3.6 to 3.9 per cent, while earnings growth including bonuses fluctuates between 3.5 and 4.5 per cent. This difference is less marked than in previous years but still quite noticeable.

The next section looks at what caused these fluctuations in growth.

Bonus payments in 2007/08

There are three main effects that cause fluctuations in the earnings growth rate including bonuses:

- changes in the level of bonuses paid in the same month as the previous year
- changes in the timing of bonus payments, and
- changes in the level of bonuses paid earlier or later than the previous year

Figure 3 shows how these effects impact on the level and timing of growth rates between December 2007 and April 2008. The biggest effects were on the data for

January, when the level of bonuses was 0.2 percentage points higher than that also paid in January the previous year. Timing effects were, however, much larger, adding 0.7 percentage points to the growth in January, so that the net increase in growth was 0.9 per cent. In contrast, in March, the level of bonuses was 0.5 percentage points higher than that paid in March the previous year, while timing effects reduced growth by 0.2 percentage points, bringing the net increase in growth to 0.3 per cent.

The level of bonuses can be calculated from the AEI annual growth rate (see Freeman 2002). Applying this technique to the latest data, bonuses in the period December 2007 to April 2008 were approximately £1.5 billion higher than in

the same period a year earlier. This growth is somewhat less than in the previous two years, when bonuses grew by around £3 billion.

Looking at the data in more detail, it is important to recognise that not all bonuses are paid in the financial sector (sometimes very loosely described as ‘the City’). As noted previously, bonuses in the financial sector comprised around 60 per cent of total bonuses during December 2007 to April 2008. In terms of growth, the financial sector was broadly flat between the two years, that is, the £1.5 billion growth in total bonuses occurred in other sectors.

Box 2 describes how the supplementary information breaks down the month-on-month effects of bonuses on the AEI growth rate between timing and levels effects.

Figure 3

Contributions to changes in earnings growth, including bonuses



Box 2

Interpreting the data

To produce the bonus analysis, only companies that have a significant effect on the published growth rate for the whole economy are included. Due to the way that the AEI is constructed, it is possible to calculate the contribution of a single company to the whole economy month-to-month growth rate, that is, the percentage growth between two consecutive months. For the purposes of the analyses in this article, a company is included if, when it paid its bonus, it had an effect of more than 0.01 percentage points on the whole economy month-to-month growth rate.

Table 1 shows the aggregate effect of companies that paid large bonuses in the period December 2007 to April 2008 and in the same period 12 months earlier. The figures show the contribution to the AEI month-to-month growth in the months that they paid their bonuses, for example, growth from January to February 2008. Figures in the white areas show effects on the AEI in the 2007/08 period; figures in the shaded areas in brackets show effects on the AEI in the 2006/07 period.

Reading across the rows of the table shows what happened to the companies that paid bonuses in 2006/07. For instance, most of the companies paying bonuses in March 2007 also paid their bonuses in March 2008. Looking at the effects, bonus payments in March 2007 contributed 6.8 percentage points, and

companies also paying their main bonus in March 2008 contributed 5.9 percentage points in March 2008 compared with 5.4 percentage points in March 2007. However, there were some companies paying bonuses in March 2007 that paid their main bonuses in February 2008. The contribution in February 2008 was 0.4 percentage points, compared with 0.5 percentage points (the figure in brackets immediately below the 0.4) in March 2007. Looking at the totals in the final column, companies paying bonuses in March 2007 had an effect of 6.8 percentage points. When they paid their bonuses in 2007/08, they had an effect of 6.9 percentage points, that is, companies paying bonuses in March 2007 paid slightly higher bonuses in 2007/08.

Reading down the columns of the table shows which companies were affecting growth in 2007/08. Looking at the column for March 2008, there were contributions from companies that had previously paid their bonuses in December 2006 (0.2 percentage points compared with 0.1 in 2007), January 2007 (0.3 points compared with zero) and February 2007 (0.4 points compared with 0.2), as well as those that had paid their bonuses in March 2007 and in the same month a year later (5.9 percentage points in 2008 compared with 5.4 in 2007). There was also a contribution from companies that had previously paid their bonuses in April 2007 (0.3 percentage points compared with 0.1 in 2007) and made payments earlier.

Table 1
Bonus matrix for 2007/08

2006/07 annual bonus paid in:	Contributions to month-to-month growth from firms which paid large ¹ bonuses between December 2007 and April 2008								
	Whole economy growth 2006/07	Main bonus contri- butions 2006/07	2007/08 annual bonus paid in:					April 2008	'Like-for- like'
			December 2007	January 2008	February 2008	March 2008	April 2008		
December 2006	3.9	2.4	2.0	0.2	0.1	0.2	0.1	2.6	
			(1.9)	(0.3)	(0.0)	(0.1)	(0.1)	(2.4)	
January 2007	4.1	6.5	0.1	6.6	0.1	0.3	0.0	7.1	
			(0.0)	(6.4)	(0.1)	(0.0)	(0.0)	(6.5)	
February 2007	4.1	9.5	0.3	0.2	9.1	0.4	0.2	10.3	
			(0.1)	(0.3)	(8.9)	(0.2)	(0.1)	(9.5)	
March 2007	-0.7	6.8	0.3	0.2	0.4	5.9	0.1	6.9	
			(0.4)	(0.3)	(0.5)	(5.4)	(0.2)	(6.8)	
April 2007	-7.2	1.2	0.2	0.2	0.2	0.3	0.6	1.5	
			(0.1)	(0.3)	(0.0)	(0.1)	(0.6)	(1.2)	
Total observed			2.9	7.4	10.0	7.1	1.0		
Whole economy growth 2007/08			3.2	3.0	4.4	-0.2	-8.1		

Note:

1 Includes all firms which made a contribution to the month-on-month growth of the AEI of more than 0.01 percentage points between December 2006 and April 2007 or December 2007 and April 2008.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Duff H (2007) 'A preliminary analysis of the difference between AWE and the AEI', *Economic & Labour Market Review* 1(9), pp 40–8.

Freeman D (2002) 'The Impact of Bonus Payments on the Average Earnings Index', *Labour Market Trends* 110(12), pp 667–71.

Weale M (2008) *The Average Earnings Index and Average Weekly Earnings*, National Institute of Social and Economic Research.

FEATURE

Ross Meader and Geoff Tily
Office for National Statistics

Overview of UK National Accounts and Balance of Payments: Blue Book and Pink Book 2008

SUMMARY

The Quarterly National Accounts and Balance of Payments estimates published on 30 September 2008 are consistent with the annual *Blue Book* and *Pink Book*. The data sets reflect the introduction of a new method for measuring financial intermediation, incorporation of annual benchmark survey data and supply-use balancing of 2004 to 2006, and latest quarterly and monthly data for more recent periods. This article was published to coincide with both sets of estimates.

Key points to note as they affect gross domestic product (GDP) are:

- GDP growth in the second quarter of 2008 was zero, unchanged from the previous estimate. Growth in the year to the second quarter is revised up marginally to 1.5 per cent
- the effect of the improved method of measuring financial intermediation is to increase the level of GDP in current prices in all years from 1961, by around 1.5 per cent on average, and by £27 billion in 2007 (1.9 per cent of GDP)
- the effect of supply-use balancing and benchmarking is to reduce the level of current price GDP between 2004 and 2007, partially offsetting the upward effect from financial intermediation
- the aggregate impact of these changes on 2007 is an upward revision of £19.5 billion (1.4 per cent of GDP)
- in real terms, the financial intermediation change generally leads to small upward revisions, with the impact most pronounced in the late 1990s, with GDP growth revised up 0.2 per cent in 1997, 0.3 per cent in 1998 and 0.4 per cent in 1999
- in more recent years, the main effect has come from supply-use balancing: real growth is revised down by 0.5 percentage points in 2004 and 0.1 percentage points in 2006 and 2007; growth is slightly higher in 2005, by 0.3 percentage points
- these changes largely reflect revisions to current price estimates: revisions to deflators are very small. On latest figures, the GDP deflator increased by

2.8 per cent in the year to the second quarter of 2008

For the sector and financial accounts:

- the saving ratio has been revised down to 5.1 per cent from 5.6 per cent in 2005, to 4.2 per cent from 4.8 per cent in 2006 and to 2.5 per cent from 3.1 per cent in 2007
- real household personal disposable income has been revised to 2.8 per cent from 2.9 per cent in 2005, to 1.5 per cent from 0.9 per cent in 2006 and to 0.1 per cent from 1.8 per cent in 2007
- net lending for private non-financial corporations has been revised up to £23.2 billion from £9.3 billion in 2006 and to £20.6 billion from zero in 2007

For the Balance of Payments:

- the current account deficit has been revised to £45.0 billion from £50.7 billion in 2006 and to £52.6 billion from £59.7 billion in 2007

Table 1 summarises all the changes to key National Accounts and Balance of Payments aggregates.

The annual *Blue Book*: background and modernisation

The *Blue Book* and *Pink Book* are the familiar names for the publications containing the Office for National Statistics (ONS) annual assessments of the UK National Accounts and Balance of Payments. The data sets underpinning these publications tend to be released a little

Table 1
Key National Accounts and Balance of Payments aggregates

Level of current price GDP								£ billion
	2000	2001	2002	2003	2004	2005	2006	2007
Previous	958.9	1,003.3	1,055.8	1,118.2	1,184.3	1,234.0	1,303.9	1,381.6
Current	976.5	1,021.8	1,075.6	1,139.7	1,200.6	1,252.5	1,321.9	1,401.0
Revision	17.6	18.5	19.8	21.5	16.3	18.5	17.9	19.5
of which: FISIM	17.6	18.5	19.8	21.5	22.2	22.5	24.3	27.0

Annual growth of GDP in volume terms								Percentages
	2000	2001	2002	2003	2004	2005	2006	2007
Previous	3.8	2.4	2.1	2.8	3.3	1.8	2.9	3.1
Current	3.9	2.5	2.1	2.8	2.8	2.1	2.8	3.0
Revision	0.1	0.1	0.0	0.0	-0.5	0.3	-0.1	-0.1

Quarterly growth of GDP in volume terms								Percentages
	2006Q3	2006Q4	2007Q1	2007Q2	2007Q3	2007Q4	2008Q1	2008Q2
Previous	0.7	0.9	0.8	0.9	0.6	0.6	0.3	0.0
Current	0.5	0.9	0.9	0.8	0.8	0.5	0.3	0.0
Revision	-0.2	0.0	0.1	-0.1	0.2	-0.1	0.0	0.0

Household saving ratio								Percentages
	2000	2001	2002	2003	2004	2005	2006	2007
Previous	5.1	6.4	5.0	4.9	3.7	5.6	4.8	3.1
Current	4.7	6.0	4.8	5.1	4.0	5.1	4.2	2.5
Revision	-0.4	-0.4	-0.2	0.2	0.3	-0.5	-0.6	-0.6

Annual growth of real household personal disposable income								Percentages
	2000	2001	2002	2003	2004	2005	2006	2007
Previous	4.5	4.3	1.7	2.4	1.7	2.9	0.9	1.8
Current	4.2	4.4	2.0	3.0	0.8	2.8	1.5	0.1
Revision	-0.3	0.1	0.3	0.6	-0.9	-0.1	0.6	-1.7

Net borrowing of private non-financial corporations								£ billion
	2000	2001	2002	2003	2004	2005	2006	2007
Previous	-8.5	-10.3	7.6	19.0	26.2	20.5	9.3	0.3
Current	-7.9	-8.6	8.5	18.6	27.2	21.8	23.2	20.6
Revision	0.6	1.7	0.9	-0.4	1.0	1.3	13.9	20.3

Balance of Payments current balance								£ billion
	2000	2001	2002	2003	2004	2005	2006	2007
Previous	-24.8	-21.9	-16.5	-14.9	-19.3	-31.0	-50.7	-59.7
Current	-25.8	-21.1	-18.7	-18.3	-25.2	-32.7	-45.0	-52.6
Revision	-1.0	0.8	-2.2	-3.4	-5.9	-1.7	5.7	7.1

ahead of the publications themselves, as part of the routine quarterly and monthly schedule. This article was published to coincide with the publication of the Quarterly National Accounts and Balance of Payments on 30 September 2008. The expanded *Blue Book* (BB) and *Pink Book* (PB) will be published in electronic form on 24 October and in paper form on 21 November.

The data set published on 30 September is based on current price supply and use balances for the years 2004 to 2006 and, as set out in Humphries (2008), constitutes the first phase of the modernisation of the National Accounts. The input data for these balances have been derived using new methodologies and new systems and

the supply and use balancing process has also been derived on new systems. Benchmark sources, in particular the Annual Business Inquiry (ABI) and HM Revenue & Customs (HMRC) data, have been incorporated through this framework, which ensures the coherence of the three measures of GDP in aggregate and at detailed industry and product level. This is explained in more detail in the section 'The *Blue Book 2008* balance: supply and use methodology'.

The other major improvement introduced in *Blue Book 2008* (BB08) is the introduction of the new treatment of financial intermediation services indirectly measured (FISIM), which is explained in the section of that name. It leads to revisions to GDP in all years back to 1961.

The *Blue Book 2008* balance: supply and use methodology

National Accounts represent a framework for the coherent description of the economy. They do this through a number of dimensions, such as industries, products and sectors. This framework is populated using a multitude of data sources each with its own definitions and quality. However, the National Accounts need to have consistent definitions both within any accounting period and over time.

Achieving consistency at the level of the main economic aggregates is brought about through supply and use tables. These provide a framework with clear accounting relationships. When populated with the raw source data, these accounting relationships are not met. The process of confronting the data in the framework of the supply and use table to make these accounting relations hold true is known as balancing. The framework also permits the incorporation of annual benchmark data sources, in particular the ABI and HMRC data on company and household incomes.

GDP can be compiled using three approaches: the expenditure approach, the production approach and the income approach. Ideally, each approach makes use of data independent of the others and results in three separate measures of GDP. In theory, these three measures of GDP should be the same, but data collection methods, their concepts and quality mean this is not the case. The supply and use framework alongside the process of balancing provides the means by which the three independent measures are reconciled. Balancing involves judgement, in particular about the weight given to individual sources.

Supply and use tables are matrices with an industry and product dimension, describing the domestic production process and the transactions in products of the national economy in great detail. A simplified presentation of the supply and use table framework is set out in **Box 1**.

The UK has compiled annual supply and use tables in current prices for many years, although these were temporarily suspended in 2007 to release resources to create headroom for modernising the National Accounts. Current price annual supply and use tables have been reintroduced this year and used to balance the years 2004 to 2006. Previously, 2004 was provisionally balanced in *Blue Book 2006*, but it is the first balance for 2005 and 2006.

The supply and use tables produced this year will be published on 24 October and

Box 1

Supply and use table framework

Supply						Use									
Product	Industry					Product	Final expenditure							Total use	
	Product breakdown						HH	NPISH	GG	GFCF	Inventories	Valuables	Exports		
		Imports	T&T margins	Taxes on products	Subsidies on products										
	Total supply														
	Total output														
							Total intermediate consumption								
							Compensation of employees								
							Gross operating surplus								
							Taxes on production								
							Subsidies on production								
							GVA								
							Output								

From this framework, two types of accounting relationships hold:

- by industry: output by industry = input by industry. This can be expanded to output = intermediate consumption + value added
- by product: total supply by product = total use by product, which can be expanded to output + imports = intermediate consumption + exports + final consumption expenditure + gross capital formation

These two identities, by industry and product, are those used in balancing to confront the basic data and improve the consistency and completeness of the estimates. There were 123 industries and products identified, the same as in the 2006 and earlier *Blue Books*. It is planned to expand the number of industries and products in the future. For this year's *Blue Book*, a more decentralised approach to balancing has been used. The sources of data used to populate the supply and use framework have not changed significantly, although the computing systems

used to marshal together the data and represent the supply and use framework are new. These new systems are an output from the ONS programme for the modernisation of its statistical systems and processes. The process of balancing was, however, somewhat different from what was done in the past. Balancing no longer relies on a separate team allocated specifically to balancing the supply and use tables. Those involved in balancing are the compilers of the basic data that form the input to the process, which helps deliver more informed judgements. These individuals bring with them an understanding of the data that is being used to populate the supply and use framework. If the supply and use framework is considered as a column (industry) and row (product) matrix, the confrontation of the data can be viewed as a process of separate column, row and column confrontations of the data. Further details on the new methods for compilation and balancing will be presented in a technical article scheduled for release alongside the publication of the new supply and use tables on 24 October.

will appear little different from those of the past, in terms of level of detail and coverage. The fundamental difference is the process and IT systems used to balance the supply and use tables. What is being released this year provides the foundation for further improvements to come. A detailed description of the methods used will be released alongside the tables themselves on 24 October.

Financial intermediation services indirectly measured

The *Blue Book* is also the point at which major methodological changes are incorporated into the National Accounts. This year, the most significant change is the revised method for the allocation of FISIM.

The conceptual reasons for, and impact of, this change are discussed in detail below. Overall, the change has three main strands:

- first, GDP is increased, reflecting the inclusion of final demand for FISIM, mainly on the part of households (with the same impact on all three measures)
- second, a modest revision to the aggregate estimate of FISIM output itself, reflecting improved data sources from the Bank of England, and
- third, changes to the volume indicator, including the removal of the financial services adjustment, changes to industry weights and a change to the output indicator for financial intermediation

In the National Accounts, banking services are subdivided into those that can be measured directly and those that can only be measured indirectly. The former include those services for which explicit charges are made, such as commission on foreign

exchange, account charges and flat-rate fees for overdrafts. However, many services provided by banks are not explicitly charged for, such as:

- taking, managing and transferring deposits
- providing flexible payment mechanisms such as debit cards
- making loans or other investments
- offering financial advice or other business services

Instead, banks recoup the costs of providing these services through the difference between interest receipts and interest payments. Under international rules, the output of these financial intermediation services is based on interest differentials between lending and deposits. Normally, under standard national accounting rules, earnings from interest are a transfer

payment and not part of a corporation's output, value added or gross operating surplus (GOS) and therefore do not contribute to GDP or economic growth. The concept of FISIM was developed as part of the update of the System of National Accounts (SNA93) and the European System of National and Regional Accounts (ESA95) to provide a standard approach for measuring both the supply and use of FISIM services, although the notion of allocating banking costs had been originally introduced in SNA68.

The supply of FISIM, in current prices, is based on total interest receipts and payments. Interest flows are estimated from detailed data on stocks of loans and deposits and associated interest rates, provided by the Bank of England. The calculation also adjusts for a so-called reference rate of interest, which represents 'the pure cost of borrowing funds – that is, a rate from which the risk premium has been eliminated to the greatest extent possible, and that does not include any intermediation services' (*System of National Accounts*, 1993, SNA93, paragraph 6.128). The calculation also includes estimates for other financial intermediaries' production of FISIM, which have become increasingly important over recent years as banks have securitised loans. Akritidis (2007) includes a more detailed discussion of these calculations.

In SNA93, countries were given two options for allocating the use of FISIM, essentially a provisional and a full treatment, which reflected recognition that the full treatment would be difficult to implement in practice. The BB08 changes arise from the UK moving to the full treatment so that FISIM is allocated to final as well as intermediate use, explained in **Box 2**. The effect is to increase GDP. These changes have been discussed in two previous articles by Jenkinson and Tily (2006) and Akritidis (2007) and, since March 2007, ONS has published experimental estimates of FISIM and its impact on current price GDP. Most other EU countries have for some time used the full treatment.

The change in treatment leads to an increase in the level of GDP, reflecting the allocation of FISIM to final demand categories, as well as changes to detailed components of the three measures of GDP (this allocation is discussed in a later section).

FISIM remains work in progress. There are a number of concerns that are the subject of international discussion, especially:

- the non-coverage of central bank lending and deposits as part of the calculation of FISIM output

- complexities in deriving 'reference rates' across loans and deposits of different maturity (for the UK these are based on official discount rates for sterling, the euro and the yen)

Plainly, the impact of both of these factors might be accentuated in the present financial environment. There has been greatly increased central bank intervention in financial markets, and a key feature of the crisis is the increased divergence between market and official rates. The latter suggests that basing reference rates on official rates, as is done in the UK, may be inappropriate (any associated increased risk premium is presently treated as an increase in FISIM output).

The Blue Book 2008 balance: results

The combined effect of supply and use balancing, the take-on of annual survey results and the allocation of FISIM have led to changes to the headline level and growth of GDP from 1961, as well as changes to components of income and expenditure.

Figure 1 and **Figure 2** show changes to the current price level of GDP, from 1961 to 2007. Up to 2003, the increase in the level of GDP is entirely due to the allocation of FISIM to final expenditure categories, and amounts to roughly 1.5 per cent of GDP

Box 2

The allocation of the use of FISIM

FISIM output generated by financial intermediaries (FIs) should be allocated between the users of the services for which no explicit charges are made. SNA93 acknowledged the practical difficulty of developing a method of allocating FISIM between different users in a way that is conceptually satisfactory from an economic viewpoint and for which the required data are available. Hence, SNA permitted one or other of two different approaches.

Approach 1: Allocation of FISIM into a 'nominal' sector

SNA93 permits a simplified approach, where (by convention) FISIM output is not allocated between users but is treated as absorbed by the intermediate consumption of a 'nominal sector'. In consequence, the estimate of FISIM is not allocated into user sectors or industries. In this approach, GDP is not affected by the size of the FISIM output (SNA93, paragraph 6.126). ESA95, as originally published, did not require introducing FISIM allocation in National Accounts, because EU countries had concerns about the availability of source data and the reliability of the methodology. Prior to BB08, this was the approach adopted in the UK.

Approach 2: Allocation of FISIM into user sectors

The recommended approach involves a full allocation of the use of FISIM across relevant sectors and industries.

The purpose of allocation of FISIM by sectors and industries is to identify the purchase of these services explicitly and to classify them as intermediate consumption, final consumption expenditure or exports according to which sector incurs the expenditure. (SNA93, Annex III, paragraph 5)

According to the European Council Regulation, which amended the ESA 1995, the FISIM estimate is allocated into sectors in the National Accounts as follows:

- intermediate consumption for the services attributed to non-financial corporations, other financial corporations, households as owners of dwellings, households as owners of unincorporated enterprises and non-profit institutions serving households (NPISH)
- final consumption expenditure for the services attributed to households for individual consumption and general government
- exports for the services attributed to non-residents

There is also an estimate for imports of FISIM, which is part of the supply of FISIM. In addition, there are technicalities concerning FISIM allocation in National Accounts, for example, treatment of non-market units and producers of housing services (see Akritidis 2007).

Figure 1
Current price GDP

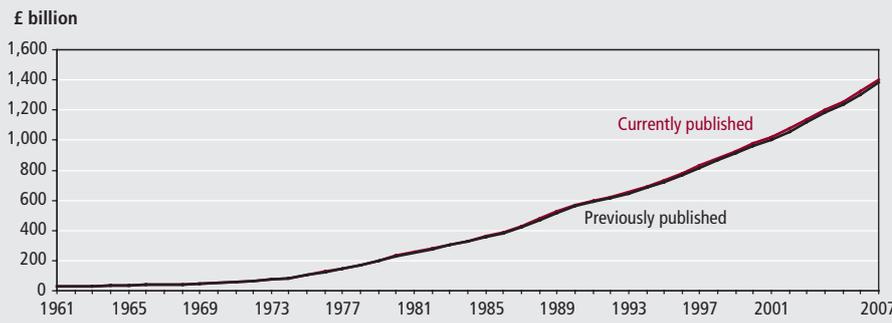
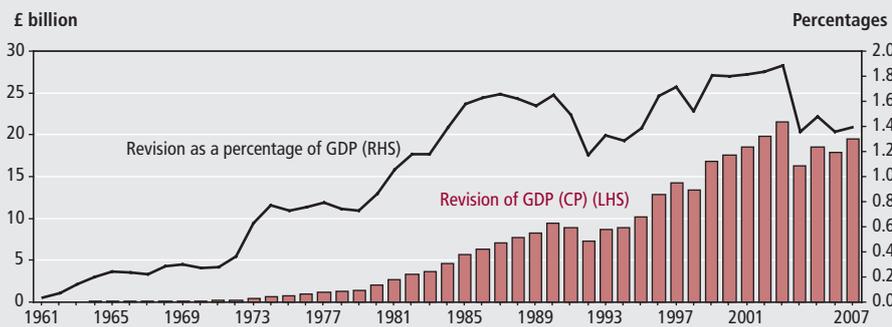


Figure 2
Changes to current price GDP at Blue Book 2008



(taking an average across the whole period). In 2003, the level of GDP was revised up by £21.5 billion, which is equivalent to 1.9 per cent of GDP. As will be discussed later, some periods saw particularly fast FISIM growth and therefore impact on GDP growth in both current prices and volume terms.

From 2004 to 2006, upward revisions to GDP as a result of the FISIM allocation is partly offset by downward revisions to the level of GDP arising from the supply and use balancing process, decomposed in **Table 2**.

Table 2 shows that, for all newly balanced years, the upward revision due to FISIM offsets downward revisions from the new supply and use balance. These changes are discussed in more detail below. The overall effect in 2006 is an upward revision of £17.9 billion to the level of current price GDP, equivalent to 1.4 per cent of GDP.

The year 2007 has not been balanced through the supply use process, and the above change reflects only carrying forward the new annual benchmark totals, so that growths are not distorted.

Many commentators and analysts are, however, more interested in changes to growth measured in volume terms, which are shown in **Figure 3**. For data prior to 2004, the FISIM allocation means that the revisions are upward but of relatively modest size, generally between zero and 0.2 percentage points, though occasionally

negative, and one high outcome of 0.4 percentage points in 1999. The most sustained divergences and hence periods of the strongest growth in the final demand for FISIM are in 1973 to 1974, the 1980s and then the late 1990s. The high FISIM growth in 1999 was bolstered by very strong export growth (net lending by UK

banks to non-residents, which feeds into exports of services).

The changes in growth have generally been upward because the norm has been for the level of household loans and deposits to grow in real terms. The most sustained divergences are when the volume of lending to consumers – and hence stocks of debt as well as deposits – were growing particularly strongly. They coincide with periods of strong expansion to the economy as a whole; equally, differences are smaller when economic growth is smaller.

For the years 2004 to 2006, however, the growth revisions are dominated by the effects of supply-use balancing. **Table 3** shows the precise impacts. The reasons for these changes are discussed in more detail below.

Some users are also interested in the new level of GDP in volume terms and therefore the cumulative effect, and tend to examine matters from the last trend point. The assessment of trend growth and the size of the output gap is not a matter for ONS. But as an illustration of the overall impact, growth between 1997, when HM Treasury assessed the economy to have been on trend, and 2006 has only changed marginally: previously it was 28.5 per cent, now it is 29.2 per cent (or a revised annualised growth of 2.9 per cent per year compared with the previous estimate of 2.8 per cent). The uneven profile of revisions therefore averages out at only a small upward change to the overall level of GDP and GDP growth.

Table 2
Breakdown of revisions to current price GDP for recent years

Year	Previously published	Currently published	Revision due to FISIM	Revision due to supply and use balancing	Total
2004	1,184.3	1,200.6	22.2	-5.9	16.3
2005	1,234.0	1,252.5	22.5	-4.0	18.5
2006	1,303.9	1,321.9	24.3	-6.3	17.9
2007	1,381.6	1,401.0	27.0	-7.5 ¹	19.5

Note:

1 2007 has not yet been balanced using supply and use.

Figure 3
Changes to GDP growth in volume terms at Blue Book 2008



Table 3
Breakdown of revisions to GDP growth in volume terms for recent years

Year	£ billion				
	Previously published	Currently published	Revision due to FISIM	Revision due to supply and use balancing	Total
2004	3.3	2.8	0.0	-0.5	-0.5
2005	1.8	2.1	0.1	0.2	0.3
2006	2.9	2.8	0.0	-0.1	-0.1
2007	3.1	3.0	0.0	-0.1 ¹	-0.1

Note:

1 2007 has not yet been balanced using supply and use.

Impact of FISIM on GDP and its components

FISIM impacts on most components of the production, expenditure and income measures of GDP. From a supply and use perspective, the financial sector produces, or supplies, FISIM. This is allocated between intermediate uses by other industries (and also by households, for example, for the production of housing services) and final consumption of households, government and overseas; imports of FISIM are also incorporated. As noted above, at the same time, the estimate of FISIM output has been revised down.

In the *Blue Book* publication, there will be a new table that shows the level of FISIM output and allocation to consuming sectors. This section characterises the allocation of FISIM by component of GDP.

Current prices

The production measure is determined as the difference between output and intermediate consumption. The increase follows from the allocation of part of FISIM output to final consumption and exports reducing intermediate consumption. This is partly offset by the reassessment and reduction in the level of FISIM output, following an improved methodology based on more relevant figures for the stocks of loans and deposits.

The changes are illustrated in **Figure 4**. The allocation of intermediate consumption increases most industries' intermediate consumption, and reduces their value added. These changes can only be seen in detailed *Blue Book* tables (for example Table 2.2) and the supply-use tables (to be published on 24 October), but also feed through to the industry weights of the volume measure of GDP(O) – see below.

The expenditure measure shows how the final consumption of FISIM is allocated (**Figure 5**). The majority is allocated to household consumption, reflecting their borrowing and deposits; a small amount is allocated to government, and trade in service flows reflect imports and exports of FISIM (that is, deposits and lending from and to non-residents).

The income measure largely comprises GOS and compensation of employees. Previously, the GOS of financial corporations included FISIM, which was then subtracted from the income total as part of 'other income'. Under the new treatment of FISIM, the allocation of GOS to the sectors of the economy is changed (**Figure 6**) with the following effects:

- financial corporations' GOS is reduced to the extent that the current estimate

of FISIM output differs from the previous one

- private non-financial corporations' GOS is reduced to the extent of their allocated intermediate consumption of FISIM
- households' GOS is reduced likewise (this follows from their treatment as producers of owner-occupier housing services)
- other income is increased following the removal of the adjustment for FISIM

Volume changes

The volume estimate of FISIM has changed following a number of methodological improvements that go beyond those for the current price measure. These include:

- the use of more relevant loan and deposit stock data from the Bank of England
- chain-linking at a greater level of detail

Figure 4
Impact of FISIM changes on the production measure of GDP, current prices

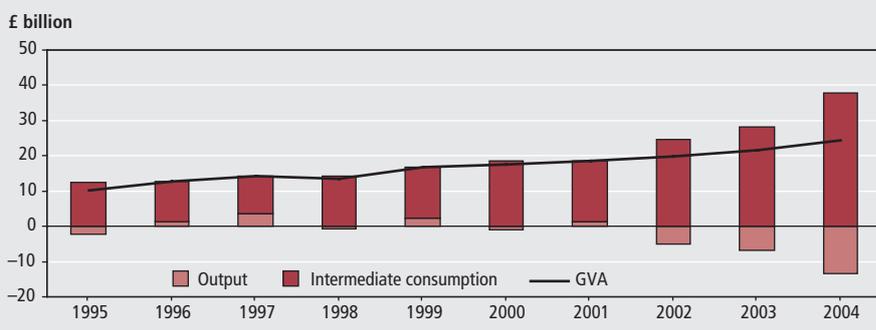


Figure 5
FISIM changes to the expenditure measure of GDP

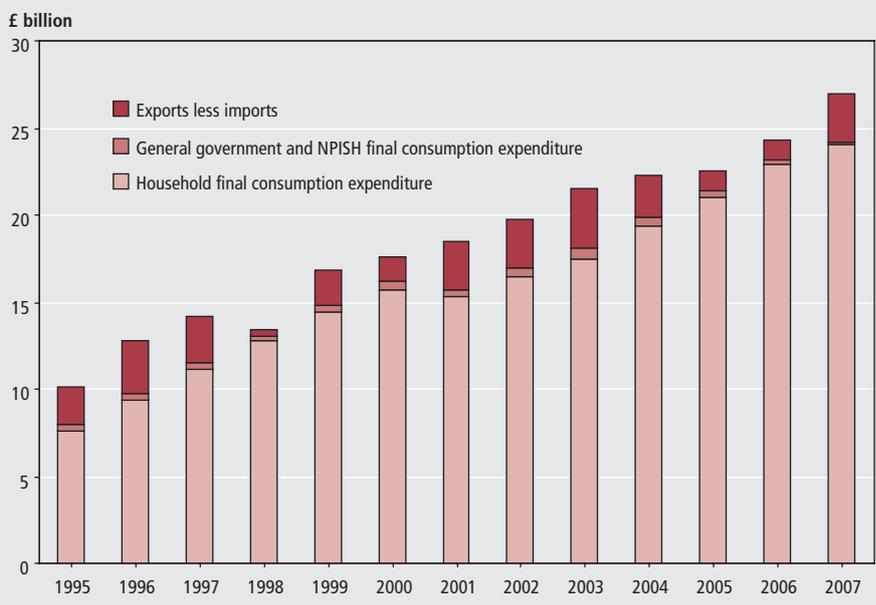


Figure 6
FISIM changes to the income measure of GDP

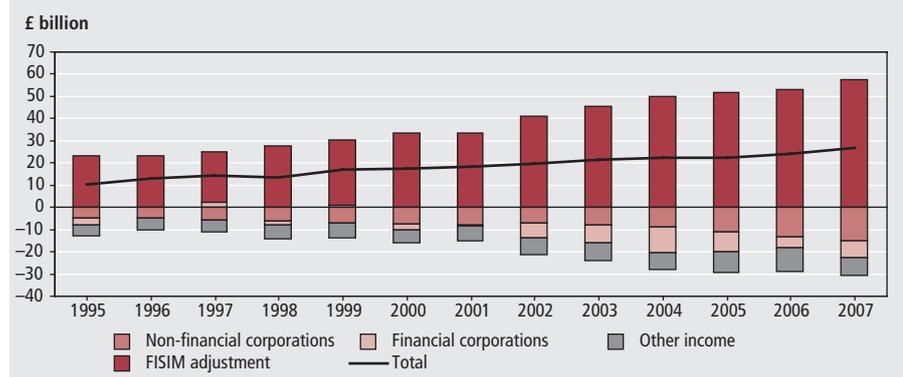
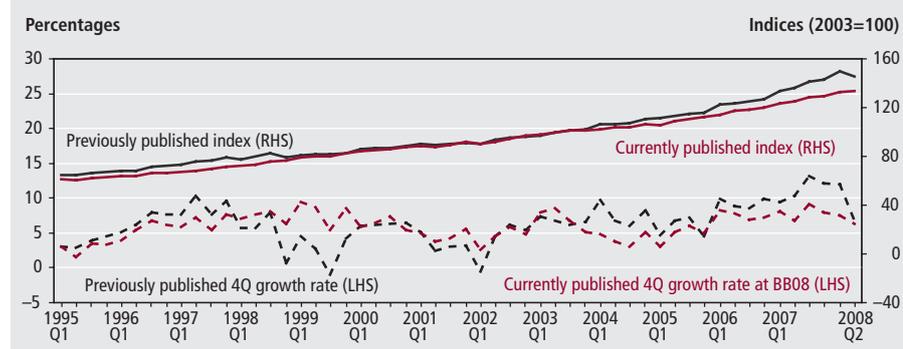


Figure 7
Financial intermediation



- a change in the deflator to the GDP(E) implied deflator
- removal of an indicator for the output of National Savings and Investments

The change in deflator follows EU recommendation. FISIM is deflated to reflect changing margins and to adjust for the changing purchasing power of loans and deposits over time. The revised deflator is appropriate to the final consumption of FISIM and hence expenditure measure of GDP. In the previous deflator, a large estimate was made for currency impacts on foreign lending and deposits, which have a far smaller impact in the new measure.

Overall, these changes have led to substantial changes in the overall output index for financial intermediation, and associated estimates of growth (Figure 7).

The impact on GDP of these changes is not straightforward. The previous treatment ensured that financial intermediation made little impact on the aggregate volume measure of GDP(O), through the financial services adjustment. With the introduction of the new treatment for FISIM, the above revised series has been added to the output measure of GDP. But the actual impact on the calculation of GDP differs as follows:

- for years up to and including 2006, the level of GDP is driven by the supply-use balance and, for these years, the inclusion of the revised profile for financial intermediation and the removal of the financial services adjustment affects only the profile of quarterly growth within years
- for 2007 and 2008, GDP is determined by the output measure. In these years, the GDP profile is altered according to the revised profile for financial intermediation

The allocation of intermediate consumption to industry also leads to revised gross value added weights as well as the removal of the financial services adjustment (which

previously had a negative weight of 46 parts per thousand and was included as part of the 'Business services and finance' industry). The impact these changes have had on the industry weights is shown in Table 4.

Table 5 shows the evolution of industry weights (in parts per thousand) over time. The share of 'Business services and finance' is increased by 2.2 percentage points. The counterpart reduction is spread across other sectors, with the largest increase in 'Government and other services' of 0.5 percentage points. The figures shown for 2000 to 2003 have been updated for *Blue Book 2008*. The biggest changes in recent years have been the growth in 'Business services and finance' at the expense of the manufacturing industry.

The supply-use balance: benchmarking and impact on detailed components

Apart from FISIM, the revisions to the aggregate GDP levels and growth from 2004 to 2006 follow the reintroduction of the supply-use process and the incorporation of annual benchmark survey estimates, especially the ABI. In BB06, 2003 and 2004 were balanced. In BB08, 2004 has been rebalanced and 2005 and 2006 balanced for the first time.

The main change is the reduction in the level of GDP in 2004, though this carries through to all subsequent years. This follows in part from the replacement of the provisional ABI data for 2004 with final estimates. But changes are also driven by the revised assessment of the supply-use balance discussed above. In effect, different weights have been allocated to the three measures of GDP than previously, with income and expenditure sources given a degree more emphasis and less to the production measure. This follows from the detailed balancing at product level, bringing on board more specific commodity expertise.

The figures for 2005 and 2006 reflect the first implementation of balancing and

Table 4
Changes in the weights at *Blue Book 2008*

Industry	Total change in weight	Parts per thousand of which: FISIM
Agriculture, forestry and fishing	-0.52	-0.45
Mining and quarrying	-0.72	-0.57
Manufacturing	-4.25	-4.43
Electricity, gas and water supply	-0.56	-0.57
Construction	-2.09	-1.81
Distribution, hotels and catering	-4.92	-4.81
Transport storage and communication	-2.15	-2.52
Business services and finance	21.99	20.55
Government and other services	-6.78	-5.40

Table 5
Evolution of weights

	Parts per thousand								
	1948	1958	1970	1980	1990	2000	2001	2002	2003
Agriculture, forestry and fishing	61.4	44.4	29.8	22.1	18.6	9.9	9.2	9.4	9.7
Mining and quarrying	36.7	35.0	16.2	63.9	23.6	28.4	25.5	22.9	21.1
Manufacturing	355.7	365.9	326.7	265.3	232.4	173.6	164.4	152.9	142.7
Electricity, gas and water supply	20.3	26.5	31.5	31.3	22.1	18.3	17.3	16.8	16.2
Construction	62.5	61.6	64.1	63.3	72.2	52.8	55.7	57.1	58.6
Distribution, hotels and catering	151.6	144.9	139.4	128.2	142.6	149.3	151.1	148.8	148.4
Transport storage and communication	95.7	88.4	84.6	71.6	83.9	80.1	77.7	76.3	75.5
Business services and finance	53.2	81.5	133.8	143.3	192.8	270.0	277.9	290.7	299.2
Financial intermediation	25.3	39.0	53.0	60.6	71.5	52.1	53.0	66.2	70.4
Real estate, renting and business activities	37.9	73.5	111.3	123.4	172.6	218.0	224.9	224.5	228.7
Government and other services	163.0	151.8	173.9	211.0	211.5	217.7	221.3	225.1	228.6

take-on of annual benchmark sources, and changes are more modest. As shown in Table 2, there is an upward revision to growth in volume terms in 2005 of 0.3 per cent, and downward revision to growth in 2006 of 0.1 per cent.

For all years, from the expenditure perspective, the downward revisions have been driven by downward revisions to household final consumption expenditure and NPISH and gross fixed capital formation (GFCF), offset partly by upward revisions to changes in inventories. On income, downward revisions to the compensation of employees, following incorporation of benchmark data and rebalancing, have been offset by upward revisions to the gross trading profits of corporations. The detailed changes, excluding FISIM, are shown in **Table 6**.

The BB08 balance is not typical in that, on average, growth has tended to be revised upward following the annual benchmarking exercise. However, in the past, there have been occasional years when revisions are downward.

Various benchmark sources have been incorporated for components of the expenditure measure:

- on household final consumption expenditure, ABI data have been used to benchmark components previously based on the Retail Sales Inquiry, and revised Expenditure and Food Survey data have been used
- GFCF data are revised down in 2004, also following fuller incorporation of ABI data
- revisions to 2007 also reflect the take-on of the provisional data from the annual International Trade in Services survey and Chamber of Shipping and Civil Aviation Authority (CAA) surveys
- within trade in goods, oil imports were revised down by around £700 million

in 2006, to reflect later information on goods procured in ports

On the income measure, HMRC benchmark sources for compensation of employees and GOS were used for the confrontation with production sources, though changes from benchmarking have been partly offset by balancing adjustments. These have led in particular to downward revisions from 2005 onwards.

Quality

The implementation of an improved method for measuring financial intermediation, together with the reintroduction of annual supply-use table balancing and incorporation of annual benchmarks, have improved the quality of the National Accounts compared with previous estimates. But production of the *Blue Book* data set is a complex task. At present, the same level of detail is not available from supply-use balances as under the previous system, so some component detail (for example, the sector disaggregation of GOS or the asset breakdown of GFCF) is less well founded than usual. Some caution should therefore be taken with the interpretation of detailed figures and movements, and associated implications for the sector accounts. The expectation is

that the accounts will continue to evolve as ONS develops the approach and methods to compile and balance the accounts, as outlined in Humphries (2008).

Quarterly data

The implementation of annual benchmark sources and other methodological changes has led to changes to quarterly profiles. Annual balancing also requires a reassessment of quarterly profiles so that they are constrained to annual totals from supply-use balancing. The quarterly path within a year remains determined by the production measure of GDP. For *Blue Book 2008*, a number of changes have been made that impact on quarterly paths. The overall effect is shown in **Figure 8**.

Between the first quarter of 1995 and the second quarter of 2008, the quarterly path has been revised. Although the revisions are as much as 0.4 percentage points in some quarters, this is to be expected when introducing major methodological changes. Revised annual totals are implemented in a top-down manner, and it has been long understood that algorithms used to bring quarterly figures into line can cause relatively large revisions. That said, on average, these revisions are smaller than

Table 6
Revisions to expenditure and income components excluding FISIM

	£ billion		
	2004	2005	2006
Household final consumption expenditure and NPISH	-5.0	-3.1	-3.9
Government final consumption expenditure	0.9	-0.3	-0.7
Gross capital formation	-1.7	0.4	-2.0
Exports of goods and services	-0.2	-0.7	0.1
Imports of goods and services	-0.1	-1.0	-2.1
Total expenditure	-5.9	-2.7	-4.4
Compensation of employees	-0.6	-4.6	-7.8
Gross operating surplus of non-financial corporations	-2.1	-0.5	3.7
Gross operating surplus of financial corporations	-3.2	1.3	-3.4
Other	0.0	-0.2	1.2
Total income	-5.9	-4.0	-6.3

Note:

1 Totals differ for 2005 and 2006 because income and expenditure were not previously balanced.

Figure 8
Revisions to quarterly GDP growth at Blue Book 2008

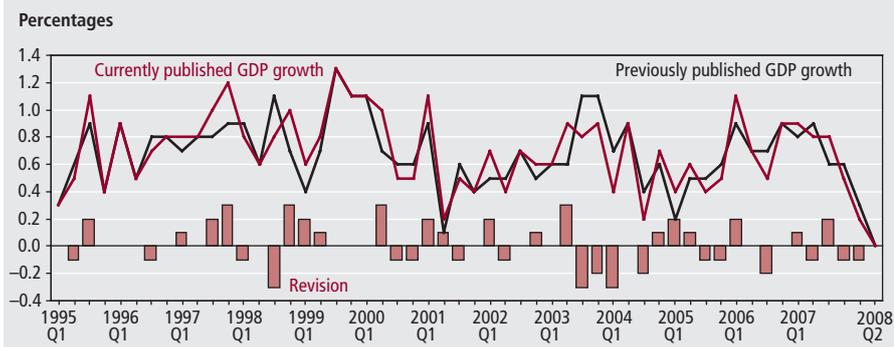
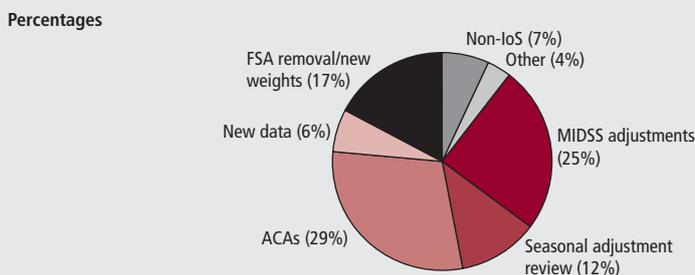


Figure 9
Breakdown of revisions to the quarterly growth of the production measure at Blue Book 2008



those made at *Blue Book 2003*, when annual chain-linking was introduced and *Blue Book 1998*, when new international guidelines (ESA95) were taken on.

Revisions to quarterly data went beyond alignment with annual totals. **Figure 9** shows a breakdown of the various reasons for revision and the relative impact over the period 1995 to 2008 as a whole.

Revisions to GDP(O) were made up of the following:

- as noted, revised annual coherence adjustments for bringing annual totals on the output measure into equality with the expenditure measure (ACAs)
- taking on new data for certain industries, including rebased producer price indices (new data)
- the removal of the financial services adjustment and implementation of the new measure of financial intermediation, as well as the introduction of new weights, as discussed above
- implementing revised seasonal factors following the annual review
- removal of the majority of the adjustments made to data based on the monthly inquiry into the distribution and service sectors (MIDSS adjustments)
- revisions to agriculture and fishing, the Index of Production and construction sources (non-Index of Services).

- small changes made to the system such as correction of errors or small changes to individual deflators (other)

Income and capital account changes

ONS publishes a full set of sector and financial accounts each quarter. The data published on 30 September are consistent with that to be published in BB08. Current price changes to GDP components feed through to the income and capital accounts. In addition, there have been a number of changes to the inter-sectoral transfers on which the rest of the accounts are based.

In the years where only the revised FISIM treatment has been implemented, revisions to the main net lending/borrowing balancing item are relatively small. The exception is the financial corporations

sector, where net lending is lower following the reduction in the estimate of FISIM output, and hence financial corporations' GOS. For other sectors, the allocation of FISIM has merely reallocated revenue and expenditure flows from the income and capital account to the production account, with in theory (though not exactly in practice) no impact in aggregate.

In years beyond 2003, following supply-use balancing as well as other data changes to 2007, there are a number of revisions to main aggregates. In particular, Rest of World and private non-financial corporation net lending have been revised down over 2007 and 2008, as a result of a reassessment of UK borrowing from overseas (see **Box 3**). For example, in 2007, private non-financial corporations' (PNFC) net lending has been revised up, by £17.8 billion, and Rest of World net lending has also been revised down, by £7.0 billion. Time series for these aggregates are shown in **Figure 10** and **Figure 11**.

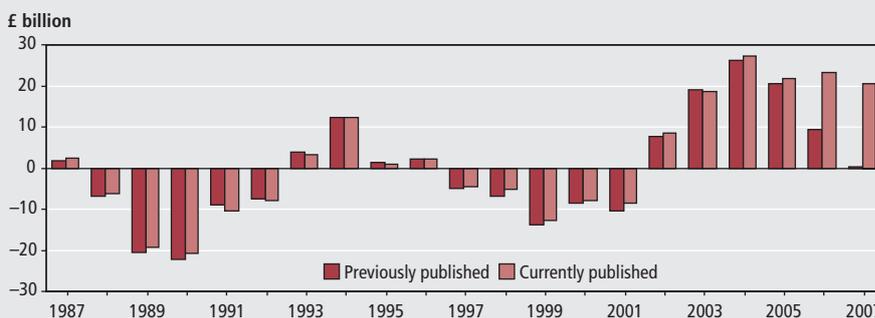
The income and capital account for the household sector has been affected by the downward revision to compensation of employees. There has been an upward revision to the saving ratio of 0.1 in 2006 and a downward revision of 0.6 in 2007 (**Figure 12**). This change, as well as reductions to the estimate of interest receipts, and changes to miscellaneous current transfers, have meant that, in the first quarter of 2008, the ratio was negative, the first time in 50 years. The ratio recovered to 0.4 per cent in the second quarter, as consumers' expenditure slowed and taxes paid on income declined.

It should be noted that the saving ratio is derived as the difference between two very large numbers that can be subject to some revision, and can therefore itself be subject to a good deal of revision.

Pink Book 2008

The *UK Balance of Payments* was also published on 30 September 2008, consistent with this year's *Pink Book*, to be published later. The *Pink Book* has been published

Figure 10
Private non-financial corporations' net lending/borrowing



Box 3

BIS data

Estimates for UK non-bank deposits with and loans from banks abroad are based on information supplied by the Bank for International Settlements (BIS). It has long been recognised that these data include information for securities dealers that is separately collected under the securities dealers' inquiry. BB08/PB08 has provided the opportunity to remove this double counting from the BIS data. The BIS predominantly counterparts to PNFCs (80 per cent), so that the reduction to the BIS deposits and loans has the greatest impact on PNFCs. As loan liabilities exceed deposits, the biggest impact is on the PNFC liability side. These changes to the balance sheet then feed through to the income and capital account as large changes to interest receipts and payments.

Revised information from the securities dealers' inquiry

Throughout 2007, the sector and financial accounts were particularly unbalanced between Rest of World (RoW), PNFCs and financial corporations (FCs) and sizeable coherence adjustments were introduced to help balance the accounts.

It was thought that the RoW sector was missing assets, and adjustments were made to deposits and loans data that increased FC and PNFC liabilities. However, new information from the securities dealers' inquiry shows that securities dealers have far fewer assets held abroad that was originally thought. So, rather than having too few assets, the RoW sector had too many liabilities. As a result of the new securities dealers information, the adjustments to the BIS data were removed, reducing PNFC loan liabilities and therefore their interest payments.

The combined effect is to reduce PNFC liabilities and their associated interest payments to RoW.

The aggregate impact of these changes should be viewed with some caution. The measurement of corporate borrowing from the RoW is a very difficult estimate, and it is also possible that the complex development of financial markets over the last decade have meant certain sources of borrowing are not covered by official surveys.

Figure 11
Rest of World net lending/borrowing

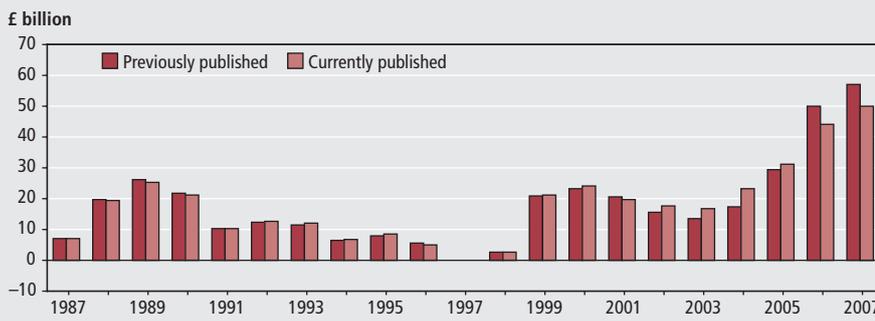


Figure 12
Household saving ratio



annually since 1946 and contains detailed information of the UK's current, capital and financial accounts and the UK's international investment position (the UK's balance sheets). The *Pink Book* also contains a detailed geographical breakdown of the UK's current account and international investment position.

This year's *Pink Book* will include revisions to the UK's current account balance back to 1989. The services and income components of the current

account are revised back to 1971 to incorporate FISIM payments and receipts between the UK and the RoW, but with no net effect on the UK's current account balance. There have been equal and offsetting revisions between trade in services, which now includes FISIM, and investment income, which now excludes FISIM. Other revisions are caused by a combination of new information and methodological improvements; these include:

- improvements to the estimation of UK non-bank loans and deposits with banks abroad to prevent the possible double-counting of securities dealers' loans and deposits (as in Box 3)
- new information from the Bank of England for banks' income payments associated with repurchase agreements and stock-lending activity
- improved estimates for non-resident holdings of UK equity securities from the incorporation of information on securities held with UK custodians
- new information from the ONS securities dealers' inquiry on their holdings of non-resident issued equity and long-term debt securities
- estimates for trade in goods affected by VAT Missing Trader Intra-Community fraud were influenced by the new supply-use balancing process, and
- trade in services estimates for 2007 were revised to take in the initial results of the annual International Trade in Services inquiry and the final results of the annual Chamber of Shipping and CAA surveys

The overall impact of these revisions on the current account deficit is illustrated in **Figure 13**. In 2007, the deficit has been revised to £53 billion from the previous estimate of £60 billion. More detail on these changes is available in the 'UK Balance of Payments': First Release, and *Pink Book*.

The implications for the latest quarterly figures

As is well known, latest figures show a degree of slowdown in the economy, with growth in the latest quarter falling to zero

Figure 13
UK current account balance

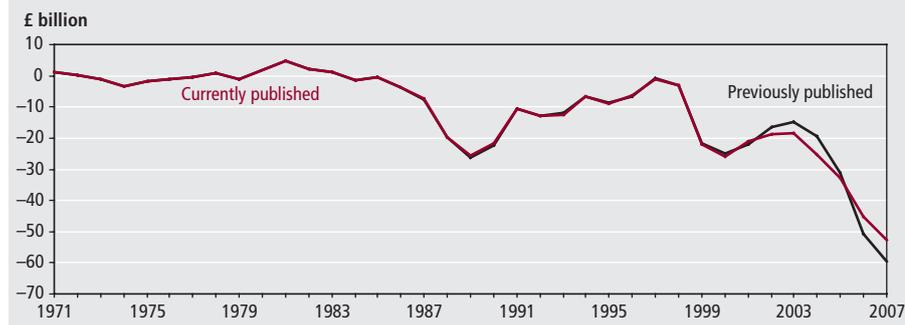


Figure 14
Quarterly and four-quarterly GDP growth rates

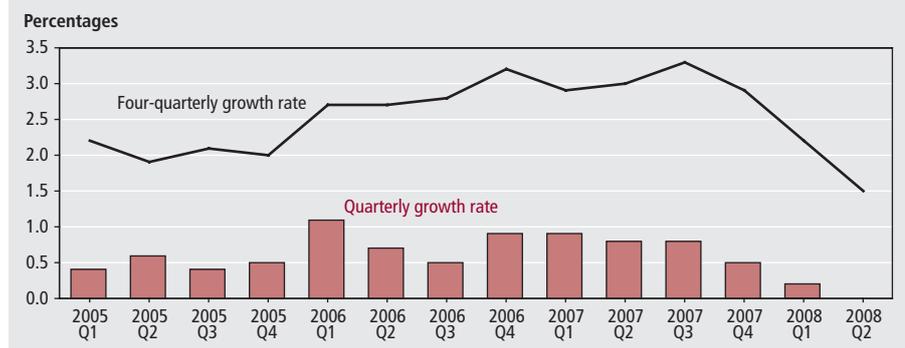
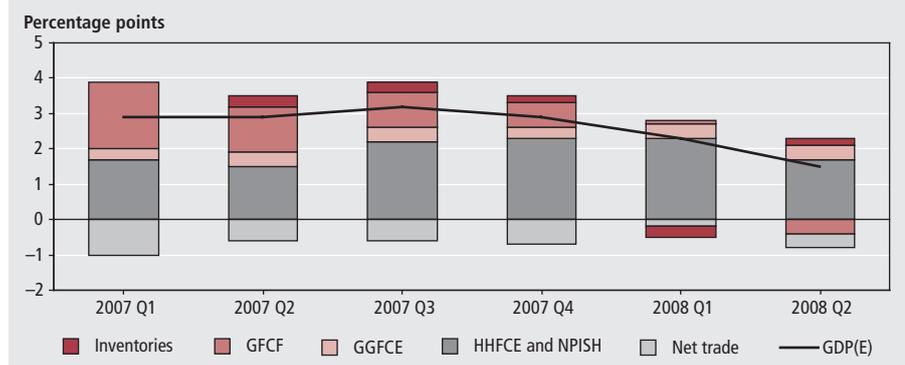


Figure 15
Contributions to four-quarterly growth rates in gross value added



Figure 16
Contributions to four-quarterly growth rates in the expenditure measure of GDP



from 0.3 per cent in the previous quarter. The figure published with the *Blue Book* data set is unrevised from the previous data set.

These figures continue showing a slowdown that has been underway since the final quarter of 2007 (**Figure 14**). Comparing four-quarter growth rates, GDP slowed from 3.3 per cent in the third quarter of 2007 to 1.5 per cent in the latest quarter. **Figure 15** shows how the various main industrial sectors have contributed to this decline.

From a demand perspective, the main source of the slowdown is GFCF, where there are now declines in both business investment and investment in dwellings; household final consumption expenditure has slowed but, on the four-quarter measure, continues to grow at 2.2 per cent (**Figure 16**).

Finally, from the income perspective, weaker GDP is reflected in both weaker compensation of employees and GOS growth.

The *Blue Book* revisions have not had a great deal of impact in the latest quarter, apart from the impact of FISIM. Financial intermediation now contributes to GDP, but growth in the latest quarter was zero. The intermediation figure has been revised from the previous estimate, following the introduction of the new methodology which has resulted in a reduced impact of overseas lending and deposits.

REFERENCES

Akritidis L (2007) 'Improving the measurement of banking services in the UK National Accounts', *Economic & Labour Market Review* 1(5), pp 29–37 and at www.statistics.gov.uk/cci/article.asp?id=1761

Humphries S (2008) 'Modernisation of the UK's National Accounts: progress and plans for Blue Book and Pink Book 2008', *Economic & Labour Market Review* 2(6), pp 30–2 and at www.statistics.gov.uk/cci/article.asp?id=2010

Jenkinson G and Tily G (2006) 'Recording payments for banking services in the UK National Accounts: A progress report' at www.statistics.gov.uk/cci/article.asp?id=1461

Mahajan S (1997) 'Balancing GDP: UK Annual Input-Output Balances', *Economic Trends* No. 519, January 1997

Office for National Statistics (2006) 'United Kingdom Input-Output Analyses, 2006 Edition' at www.statistics.gov.uk/inputoutput

FEATURE

Kathryn Ashton and Katherine Kent
Office for National Statistics

Annual Population Survey household data sets

SUMMARY

The Office for National Statistics has developed new annual local area data sets called the Annual Population Survey (APS) household data sets. They allow for production of family and household labour market statistics at local areas and for small subgroups of the population across the UK.

The aim of this article is to raise awareness of the APS household data sets. The information is presented in two sections: the initial section describes the key features of the APS household data sets, while the second section presents some key results from the data to illustrate the type of analysis that can be produced.

The Annual Population Survey (APS) household data set comes from the Labour Force Survey (LFS) and the APS (person) data set. The former is a quarterly survey of households living at private addresses in the UK. The latter is created by combining individuals in waves one and five from four consecutive LFS quarters with the English, Welsh and Scottish Local Labour Force Surveys. The APS household data sets therefore contain results from four different sources. They cover the period January to December for individual years from 2004.

Sampling and data collection

The LFS consists of a rotating panel design where interviews for individuals in households aged 16 and over take place for five consecutive quarters. The first round of interviews are face to face, with the exception of north of the Caledonian Canal in Scotland, where households are interviewed by telephone. Thereafter, each interview takes place by telephone at quarterly intervals. The household address is the main sampling unit, rather than the people living at that address. Thus, if the occupants change, the address would remain in the sample, and any new occupant(s) interviewed.

The APS household sample is three times the size of the LFS sample. It contains information collected from a sample of around 160,000 households (300,000 people aged 16 or over), whereas the LFS data sets only have a sample size of around 53,000 households (100,000 people aged 16 or

over). The APS aims to get information on a minimum of 510 economically active persons for each local area authority and unitary authority. It is the recommended source for local area data because of the greater sample size. **Table 1** compares the sample sizes of the APS household and LFS household data sets.

However, users should note that, like the LFS, APS household data relate mainly to the population living in private households. The coverage excludes many groups living in communal establishments, except those in NHS housing and students in halls of residence, where inclusion takes place at their parents' address. Members of the armed forces are included if they live in private accommodation, and the economic status of under 16-year-olds is not collected. For further details about methodology, see ONS (2007).

Imputation

For some households taking part in the LFS, one or more household members may have unknown economic activity status, that is, it is not known whether they are employed, unemployed, inactive or a child. These individuals are known as 'non-responders'. This may be because they have either refused to take part in the survey, or were absent, and a proxy interview (that is, where an individual responds for someone else) was unavailable. Removal of non-responders takes place in the person data sets and weighting compensates for this. For the APS household data set, non-responders are necessary to identify

Table 1
Sample size of APS household and LFS household data sets

	Numbers					
	APS			LFS ¹		
	Sample size	Number of households	People aged 16 and over	Sample size	Number of households	People aged 16 and over
2004	387,026	163,803	306,982	128,524	54,037	101,654
2005	383,771	162,771	305,393	126,587	53,275	100,389
2006	362,901	154,504	289,019	124,108	52,398	98,858
2007	365,926	156,141	292,997	123,715	52,202	98,327

Note:

1 Using April to June quarter data sets.

relationships between household members, assign them to complete family units within the household, and derive family and household variables. To ensure that the economic status of all individuals within a household is known, a method of 'donor' imputation takes place for those with a missing economic activity status, allowing for analysis of the combined economic status of households.

Donor imputation on the APS household data sets uses the CANadian Edit and Imputation System (CANCEIS) software, developed by Statistics Canada. It uses include imputing many variables into the 2001 Canadian Census and the imputation process of several Office for National Statistics (ONS) surveys. The procedure for imputing the APS household data set is based on the initial imputation of the variable for economic activity, which has the four categories described earlier. Non-responders under the age of 16 are coded as 'child'; the remaining non-responders are imputed using the donor imputation method. Donors for cases with no economic activity status are identified using several matching variables. These are age, sex, relationship to household reference person, household type and the economic status from the previous interview. Imputation takes place for non-responders using individuals with similar matching variables, likened to a 'nearest neighbour' form of imputation. The suitability of the imputation process is checked by comparing the distributions for key variables before and after imputation.

Weighting

Weighting of data in the APS household data sets ensures that the estimates are representative of the whole population. The weighting calibrates the survey estimates on five-year age groups by gender, and separately on unitary authority and local authority population totals. The method counts the number of individuals within each household in each of these groups,

Source: APS household and LFS household data sets

and uses a least-squares method to derive household weights.

The weighting procedure used in producing the APS household data sets is generalised regression estimation, which uses the Generalised Estimation System computer software package. The starting point is the file of household-level records and the data are then put under the weighting procedure. This procedure assumes that the corresponding APS person data set, which is used to derive the population totals using the final calibrated weight, exists. The household-file design weights are rescaled so that they sum to the total UK population size.

Unlike in the person data sets, weights for each person in the same household are equal. This ensures that weighted estimates at the household level are consistent. For example, the number of married men living in a household type would equal the number of married women. Note that although the weighting method forces agreement with population figures at the person level, it does not fix the weighted number of families or households. In other words, the total number of households may not equal the actual number of households in the population. A different sample would produce different estimates of the total number of families and households.

Household/family-level variables

The APS household data sets include all the variables on the LFS and APS person data sets, except for the income variables. They also include key family and household-level derived variables. These variables allow for an analysis of the combined economic activity status of the family or household. A full list of the household and family variables available on the data set is given in the Appendix.

Uses

The APS household data set provides improved data on key family and

household-level variables that can inform against agreed Public Service Agreement targets. There is, for example, a growing demand for statistics on workless households and lone-parent employment rates for unitary and local authority districts and for parliamentary constituency areas. Besides better local authority-level data, the increased sample size available from the APS shown in Table 1 brings better national estimates.

ONS already publishes statistics on workless households, and on working-age people and children living in workless households, by region and ethnicity; it also publishes statistics on lone-parent employment rates for the UK as whole. These are produced from the LFS household data sets and are published in the annual 'Work and Worklessness among Households': First Release.

Equivalent figures for lower-level geographies are not published regularly because of the smaller LFS sample sizes, which result in wide margins of uncertainty. Sometimes it is not possible to publish estimates because the LFS sample is too small and the estimates are potentially disclosive (that is, it may be possible to identify an individual respondent).

Another reason affecting the quality of LFS-based family and household statistics is that figures for subgroups cannot be adjusted to compensate for people, families and households with unknown economic activity status. The LFS figures for regions, local areas and other subgroups may therefore underestimate the numbers of people, families and households in each economic activity status category.

Users should note that APS household data sets are only available from 2004 onwards and therefore do not permit long-run trend analysis. Also, because the APS is an annual data set which is published six months after the end of the annual period, the estimates are less timely than those for the quarterly LFS. However, by covering a whole year, the APS household data set overcomes seasonality.

Results

The following section gives an outline of the types of household and family analysis available, using the January to December 2007 APS household data set. The results are restricted to working-age households, where at least one person in the household is of working age (16 to 64 for men and 16 to 59 for women). This is comparable with the 'Work and Worklessness among Households': First Release, which uses LFS

household data for April to June of each year. These estimates will differ because of the imputation for unknown economic status on the APS household and the fact that it covers January to December of each year.

Sampling variability

Like all sample surveys, estimates from the APS household are subject to sampling variability. The smaller the group whose size is being estimated, the less precise that estimate is. One estimate of the variability among the estimates from all possible samples is the relative standard error (RSE). The RSE represents the standard error as a percentage of the quantity being estimated. As the RSE increases, the estimate itself becomes less reliable. Results are presented with the RSE associated with each estimate. Those estimates which have a relative standard error of 20 per cent or more are not considered reliable for practical purposes. In other words, if a different sample is taken from the same population, it is likely that the estimate may differ greatly from the estimate of the current sample.

Working and workless households

A 'working' household is one where all adults of working-age are in employment. A 'workless' household is one where none of the working-age adults are in employment. The latter includes households where all adults are unemployed, those where all adults are economically inactive, and a mixture of both economic statuses. There are also households containing a mixture of adults defined as working and workless, known as mixed households.

Table 2 shows that, of the 19.34 million working-age households in the UK in 2007, 57.2 per cent (11.06 million) were working households, 27.2 per cent (5.26 million) were mixed households and 15.6 per cent (3.02 million) were workless. Among the regions, Inner London had the highest percentage of workless households, at 21.8 per cent (0.24 million). The South East region had the lowest percentage of workless households, at 10.9 per cent (0.28 million), and the highest percentage of households in which all adults were working, at 61.9 per cent (1.55 million). Northern Ireland had the lowest percentage of working households, where just under half of households contained adults who were all working.

Within each region, there are wide variations in the percentage of workless households. **Map 1** shows the percentages

for each region of Great Britain in 2007. Wales contained local authorities with some of the highest percentages of workless households (in Merthyr Tydfil and Neath Port Talbot approximately one-quarter of households were workless), but also contained Monmouthshire, which had a low percentage (12.4 per cent).

However, when picking out individual local authorities, the data should be considered along with sampling errors since, as with any sample survey, estimates are subject to a margin of uncertainty. Of the 408 local authorities in the UK, 226 (55.4 per cent) had an RSE of greater than 20 per cent for the percentage of workless households. The full list is available on the ONS website.¹

Children in workless households

Table 3 shows the number and percentage of children living in working, mixed and workless households by Government Office Region. Of children living in the UK in 2007, 52.7 per cent (6.05 million) lived in working households, 32.0 per cent (3.67 million) in mixed households and the remaining 15.3 per cent (1.76 million) in workless households. Among the regions, Inner London had the highest percentage of children in workless households, at 28.7 per cent (0.17 million), and the South East the lowest, at 9.6 per cent (0.15 million).

Workless households by ethnic group

As well as being more suitable for local area analysis, the APS household data sets provide more robust estimates for small subgroups such as ethnicity. **Table 4** shows working, mixed and workless households by ethnic origin of the household reference person. The household reference person covers individuals such as those who own the accommodation or are legally responsible for the rent. In 2007, Indian households had the lowest percentage of workless households, at 10.6 per cent (0.04 million). 'Other Black' had the highest percentage of workless households, at 31.0 per cent (0.01 million). However, the 'Other Black' ethnic group had a large RSE and is an unreliable estimate. White households had the highest percentage of working households, at 58.8 per cent (10.26 million), and Pakistani/Bangladeshi households had the lowest, at 18.8 per cent (0.06 million).

Dissemination and disclosure

The APS household microdata will be available through the UK Data Archive at Essex University, where it can be accessed by academic institutions and members of

the public. More detail is available on the Data Archive website.² Access to the data is through a special licence file which, while limiting user access, allows for household variables to remain on the data set, and for lower geographical coding and no age banding.

Statistical disclosure control methodology is applied to the APS household data. This ensures that information attributable to an individual is not disclosed in any publication.³

A user guide will illustrate background to the data sets and the uses of the data, demonstrating basic household level analyses; this will be available from October 2008.⁴

Between October 2008 and February 2009, a consultation on the content of the 'Work and Worklessness among Households': First Release, which uses LFS household data, will take place. The consultation will consider moving the source of the annual release over to the APS household data sets and allow for a review of the content of the release.

Notes

- 1 See www.statistics.gov.uk/statbase/product.asp?vlnk=15150
- 2 See www.data-archive.ac.uk
- 3 For more information on ONS statistical disclosure control methodology, see www.statistics.gov.uk/about/data/methodology/general_methodology/sdc.asp
- 4 See www.statistics.gov.uk/statbase/product.asp?vlnk=1537

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Office for National Statistics (2004) 'Statistical Disclosure Control' at www.statistics.gov.uk/about/data/methodology/general_methodology

Office for National Statistics (2007) 'Labour Force Survey User Guide Volume 1: Background and Methodology' at www.statistics.gov.uk/downloads/theme_labour/lfsug_vol1_2007.pdf

Table 2

Working-age households:¹ by combined economic activity status of household and region, January to December 2007

Government Office Region	Working households ²		Households containing both working and workless members		Workless households ³		Total	
	Level	Relative standard error ⁴	Level	Relative standard error ⁴	Level	Relative standard error ⁴	Level	Relative standard error ⁴
Thousands								
England	9,298	0.4	4,427	0.6	2,454	0.9	16,179	0.2
North East	435	1.5	227	2.1	153	2.9	815	0.7
North West	1,216	1.1	572	1.5	404	2.1	2,192	0.5
Yorkshire and The Humber	930	1.3	447	1.8	273	2.8	1,650	0.6
East Midlands	816	1.4	380	2.2	193	3.5	1,389	0.7
West Midlands	913	1.3	481	1.8	266	2.9	1,659	0.6
East of England	1,067	1.3	481	2.0	218	3.5	1,766	0.6
London	1,358	1.2	728	1.5	460	2.2	2,546	0.5
Inner London	597	1.8	271	2.4	242	3.0	1,109	0.8
Outer London	762	1.6	457	1.9	218	3.4	1,437	0.7
South East	1,594	1.0	702	1.6	280	2.9	2,576	0.5
South West	968	1.3	408	2.0	209	3.3	1,585	0.6
Wales	479	1.2	266	1.5	169	2.2	914	0.5
Scotland	1,018	1.0	399	1.6	287	2.3	1,703	0.5
Great Britain	10,794	0.3	5,092	0.5	2,910	0.8	18,796	0.1
Northern Ireland	267	2.5	169	2.9	106	4.7	542	1.1
United Kingdom	11,061	0.3	5,260	0.5	3,016	0.8	19,337	0.1
Percentages								
England	57.5	0.3	27.4	0.6	15.2	0.9	100.0	
North East	53.4	1.3	27.9	2.2	18.7	2.7	100.0	
North West	55.5	0.9	26.1	1.6	18.4	2.0	100.0	
Yorkshire and The Humber	56.4	1.0	27.1	1.9	16.5	2.6	100.0	
East Midlands	58.8	1.2	27.3	2.3	13.9	3.3	100.0	
West Midlands	55.0	1.1	29.0	1.9	16.0	2.7	100.0	
East of England	60.4	1.0	27.2	2.1	12.4	3.4	100.0	
London	53.3	0.9	28.6	1.6	18.1	2.1	100.0	
Inner London	53.8	1.4	24.4	2.6	21.8	2.8	100.0	
Outer London	53.0	1.3	31.8	2.0	15.2	3.2	100.0	
South East	61.9	0.8	27.3	1.6	10.9	2.8	100.0	
South West	61.1	1.0	25.8	2.1	13.2	3.2	100.0	
Wales	52.4	0.9	29.1	1.6	18.5	2.1	100.0	
Scotland	59.8	0.8	23.4	1.7	16.8	2.1	100.0	
Great Britain	57.4	0.3	27.1	0.6	15.5	0.8	100.0	
Northern Ireland	49.3	2.2	31.1	3.2	19.6	4.3	100.0	
United Kingdom	57.2	0.3	27.2	0.5	15.6	0.8	100.0	

Notes:

Source: APS household data sets

1 A household that includes at least one person of working age (man aged 16 to 64 or woman aged 16 to 59).

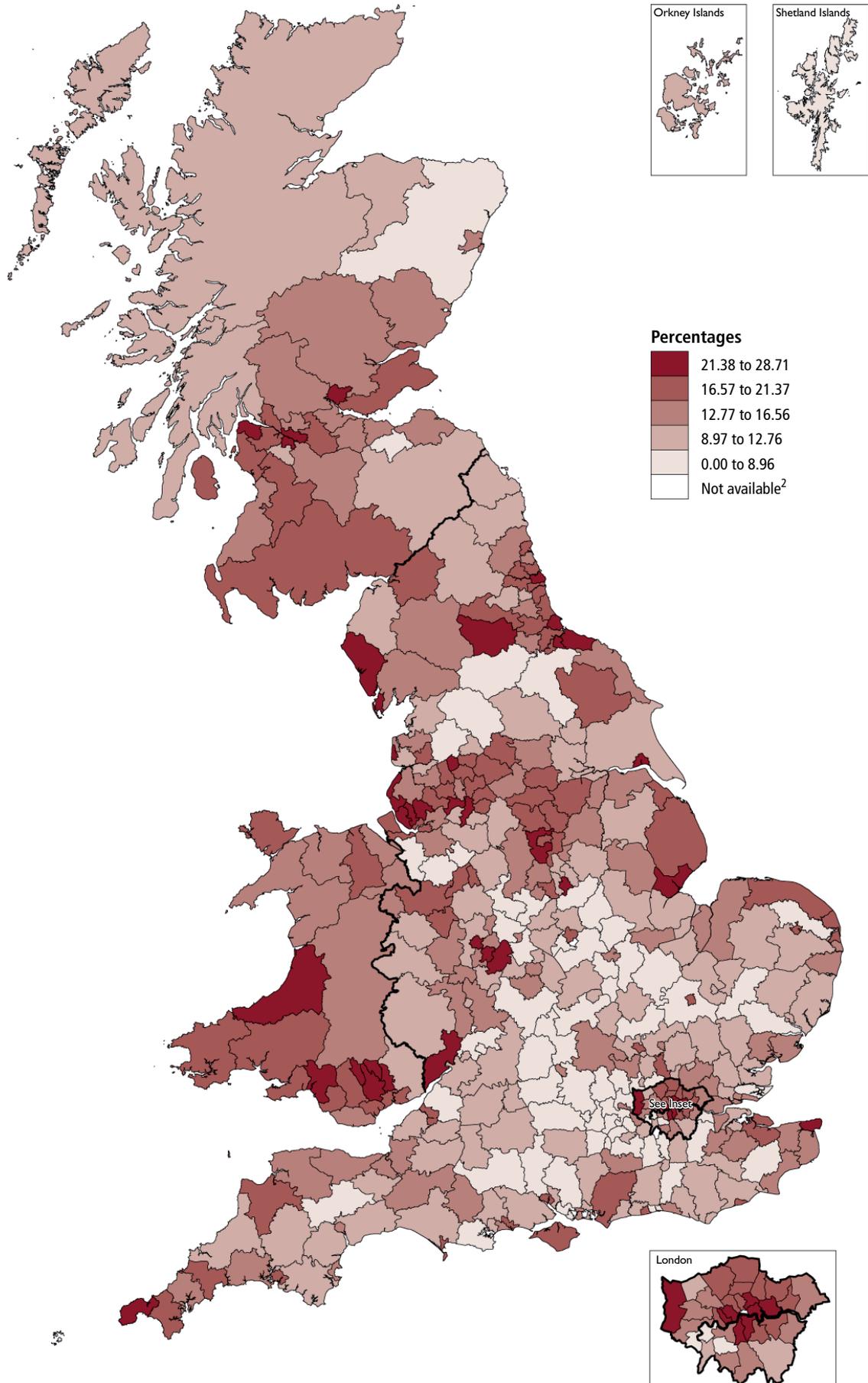
2 A working-age household where all members aged 16 or over are in employment.

3 A working-age household where no one aged 16 or over is in employment.

4 0≤RSE<5: estimates are considered precise; 5≤RSE<10: estimates are considered reasonably precise; 10≤RSE<20: estimates are considered acceptable; RSE≥20: estimates are not considered reliable for practical purposes.

Map 1

Percentage of workless households¹ in Great Britain: by local authority, 2007



1 A workless household is a working-age household where no one aged 16 or over is in employment.
 2 Sample size is too small to provide an estimate for City of London, Isles of Scilly, Epsom and Ewell and Oadby and Wigston.

Table 3

Children¹ living in working-age households: by combined economic activity status of household and region, January to December 2007

Government Office Region	Working households ²		Households containing both working and workless members		Workless households ³		Total	
	Level	Relative standard error ⁴	Level	Relative standard error ⁴	Level	Relative standard error ⁴	Level	Relative standard error ⁴
Thousands								
England	5,050	0.7	3,145	1.0	1,479	1.7	9,674	0.2
North East	238	2.9	129	4.2	81	5.7	448	1.8
North West	694	1.9	368	3.1	232	3.9	1,294	1.2
Yorkshire and The Humber	514	2.4	315	3.5	156	5.5	985	1.5
East Midlands	466	2.7	257	4.2	101	6.7	825	1.7
West Midlands	532	2.4	338	3.5	186	5.3	1,056	1.4
East of England	574	2.6	361	3.7	122	6.9	1,057	1.6
London	586	2.5	580	2.6	350	3.7	1,516	1.2
Inner London	183	4.4	232	4.1	167	5.2	582	2.0
Outer London	403	3.0	348	3.4	183	5.4	934	1.6
South East	902	1.9	535	2.8	153	5.8	1,590	1.2
South West	543	2.4	262	4.0	98	6.9	903	1.6
Wales	288	2.1	163	3.1	101	4.3	552	1.3
Scotland	520	1.8	232	3.2	132	4.7	884	1.2
Great Britain	5,859	0.6	3,540	0.9	1,712	1.5	11,110	0.1
Northern Ireland	186	4.4	135	5.5	47	9.9	368	2.5
United Kingdom	6,045	0.6	3,674	0.9	1,759	1.5	11,478	0.0
Percentages								
England	52.2	0.6	32.5	1.0	15.3	1.7	100.0	
North East	53.1	2.3	28.8	4.2	18.1	5.3	100.0	
North West	53.6	1.6	28.4	3.1	17.9	3.7	100.0	
Yorkshire and The Humber	52.2	2.0	31.9	3.5	15.9	5.1	100.0	
East Midlands	56.6	2.2	31.2	4.2	12.3	6.4	100.0	
West Midlands	50.4	2.1	32.0	3.5	17.6	4.9	100.0	
East of England	54.3	2.1	34.1	3.7	11.6	6.6	100.0	
London	38.6	2.2	38.3	2.6	23.1	3.4	100.0	
Inner London	31.5	4.1	39.9	4.1	28.7	4.6	100.0	
Outer London	43.1	2.7	37.3	3.4	19.6	5.0	100.0	
South East	56.7	1.5	33.6	2.8	9.6	5.6	100.0	
South West	60.1	1.9	29.0	4.0	10.8	6.6	100.0	
Wales	52.2	1.7	29.5	3.1	18.3	3.9	100.0	
Scotland	58.9	1.4	26.2	3.2	14.9	4.4	100.0	
Great Britain	52.7	0.6	31.9	0.9	15.4	1.5	100.0	
Northern Ireland	50.6	3.6	36.6	5.5	12.8	9.5	100.0	
United Kingdom	52.7	0.6	32.0	0.9	15.3	1.5	100.0	

Notes:

Source: APS household data sets

1 Children refers to children under 16.

2 A working-age household where all members aged 16 or over are in employment.

3 A working-age household where no one aged 16 or over is in employment.

4 0≤RSE<5: estimates are considered precise; 5≤RSE<10: estimates are considered reasonably precise; 10≤RSE<20: estimates are considered acceptable; RSE≥20: estimates are not considered reliable for practical purposes.

Table 4

Working-age households:¹ by ethnic origin of household reference person and combined economic activity status of household, January to December 2007

Ethnic origin of household reference person	Working households ²		Households containing both working and workless members		Workless households ³		Total	
	Level	Relative standard error ⁴	Level	Relative standard error ⁴	Level	Relative standard error ⁴	Level	Relative standard error ⁴
Thousands								
White	10,264	0.3	4,593	0.6	2,612	0.9	17,469	0.2
All other ethnic groups	793	1.8	664	1.8	402	2.4	1,859	1.0
Mixed	73	6.0	24	10.1	34	8.6	130	4.4
Asian	280	3.0	389	2.3	141	4.1	809	1.6
Indian	164	3.9	161	3.7	39	7.8	363	2.5
Pakistani/Bangladeshi	57	6.7	174	3.5	74	5.5	306	2.6
Other Asian	59	6.6	54	6.6	28	9.8	140	4.2
Black	265	3.1	130	4.3	130	4.3	524	2.1
Black Caribbean	126	4.5	58	6.6	57	6.6	241	3.2
Black African	131	4.4	66	5.9	66	6.0	263	3.0
Other Black	8	18.1	6	22.3	6	19.8	20	11.5
Chinese	47	7.6	25	9.8	18	12.1	91	5.4
Other	129	4.6	96	5.0	80	5.4	305	2.8
Total ⁵	11,061	0.3	5,260	0.5	3,016	0.8	19,337	0.1
Percentages								
White	58.8	0.3	26.3	0.6	15.0	0.6	100.0	
All other ethnic groups	42.7	1.3	35.7	1.5	21.6	1.5	100.0	
Mixed	56.0	3.9	18.1	9.2	25.9	9.2	100.0	
Asian	34.6	2.4	48.0	1.8	17.4	1.8	100.0	
Indian	45.0	2.9	44.4	2.9	10.6	2.9	100.0	
Pakistani/Bangladeshi	18.8	6.0	56.9	2.4	24.3	2.4	100.0	
Other Asian	41.9	5.0	38.3	5.3	19.8	5.3	100.0	
Black	50.5	2.2	24.8	3.8	24.7	3.8	100.0	
Black Caribbean	52.2	3.1	24.2	5.8	23.6	5.8	100.0	
Black African	49.7	3.1	25.1	5.2	25.2	5.2	100.0	
Other Black	40.9	13.8	28.1	18.7	31.0	18.7	100.0	
Chinese	51.6	5.2	28.1	8.4	20.2	8.4	100.0	
Other	42.3	3.4	31.6	4.2	26.1	4.2	100.0	
Total ⁵	57.2	0.3	27.2	0.5	15.6	0.8	100.0	

Notes:

Source: APS household data sets

1 A household that includes at least one person of working age (man aged 16 to 64 or woman aged 16 to 59).

2 A working-age household where all members aged 16 or over are in employment.

3 A working-age household where no one aged 16 or over is in employment.

4 $0 \leq \text{RSE} < 5$: estimates are considered precise; $5 \leq \text{RSE} < 10$: estimates are considered reasonably precise; $10 \leq \text{RSE} < 20$: estimates are considered acceptable; $\text{RSE} \geq 20$: estimates are not considered reliable for practical purposes.

5 Total includes people with unknown ethnic origin.

Appendix

APS household and family-derived variables

Variable name	Description
AOFL16	Age of oldest dependent child in family unit aged under 16
AOFL19	Age of oldest dependent child in family unit aged under 19
AOHL16	Age of oldest dependent child in household aged under 16
AOHL19	Age of oldest dependent child in household aged under 19
AYFL19	Age of youngest dependent child in family unit aged under 19
AYHL19	Age of youngest dependent child in household aged under 19
CAIND	Child/adult indicator
EXTFU	Extended family unit
FDPCH15	Number of dependent children in family aged between 10 and 15
FDPCH16	Number of dependent children in family aged under 16
FDPCH19	Number of dependent children in family aged under 19
FDPCH2	Number of dependent children in family aged under 2
FDPCH4	Number of dependent children in family aged between 2 and 4
FDPCH9	Number of dependent children in family aged between 5 and 9
FMDP	Number of family units in household with dependent children only
FMNDP	Number of family units in household with non-dependent children only
FMPUS	Total number of family units in household with more than one person
FUTYPE6	Type of family unit
HDC515	Number of children in household aged between 5 and 15 years
HDPCH4	Number of children in household aged 4 years or less
HDPCH18	Number of children in household aged between 16 and 18 years
HDPCH19	Number of dependent children in household aged under 19
HEACOMB	Household economic activity
HEAHEAD	Economic activity of head of family unit
HEAWIFE	Economic activity of wife family unit
HHTYPE6	Type of household
HLDCMP6	Composition of household
HNDK	Number of people in household where basic economic activity is not known
HNEMP	Number of people in household who are unemployed
HNFTIME	Number of people in household who are working full-time
HNFTSTUD	Number of people in household who are full-time students
HNINAC05	Number of people in household who are inactive
HNIWDSK	Number of people in household who are inactive and would like work but discouraged from seeking work
HNWIFAM	Number of people in household who are inactive, would like work but looking after family/home
HNWISKD	Number of people in household who are inactive, would like work but currently sick/injured/disabled
HNWSTU	Number of people in household who are inactive, would like work but currently students
HNNOWK05	Number of people in household who are inactive and do not want work
HNOSTUD	Number of people in household who are not full-time students
HNPEN	Number of people in household who are of pensionable age
HNPTIME	Number of people in household who are working part-time
HNUNEMP	Number of people in household who are unemployed
HNWKAGE	Number of people in household who are of working age
HNWOTH05	Number of people in household who are inactive for other reasons but would like to work
HOHID	Head of household identification
RELH06	Relationship to head of household
RELHFU	Relationship to head of family
RELHRP6	Relationship to household reference person
SMSXFU	Same sex family unit
TOTFU	Total number of family units in household
TOTNUM	Total number of eligible people in household
TOTXFU	Total number of extended families in household
XFMDC	Total number of extended family units in household with dependent children only
XFMNDC	Total number of extended family units in household with non-dependent children only

FEATURE

Graeme Chamberlin
Office for National Statistics

Supply-side estimates of UK investment

SUMMARY

The UK is unusual among member countries of the Organisation for Economic Co-operation and Development in using business surveys on investment expenditure to estimate almost all non-residential investment: a demand-side approach. More commonly, estimates of investment (or more precisely, gross fixed capital formation) are generated using available data on the supply of capital goods to the economy – a commodity flow model. This article describes how the commodity flow model can be used to form supply-side estimates of UK investment and discusses some of the advantages and disadvantages of this approach.

National Statistics Institutions (NSIs) around the world typically use three main approaches to measure gross fixed capital formation (GFCF):

- asking capital goods producers what they produced – many NSIs find this to be an efficient approach for collecting information on large and easily identifiable investment projects. Typically these include residential construction, factories and commercial buildings, roads, bridges, railways, and other large engineering works. Data collection is usually by means of surveys on construction activity. However, in the area of residential construction, administrative data sources can provide information on the number of starts or known time to completion. These volume indicators can then be supplemented with average unit costs, to generate investment series
- asking capital goods purchasers what they purchased – business surveys are administered to collect information on firms' capital expenditure. Despite being a direct and true expenditure-based approach, it is not common practice throughout the Organisation for Economic Co-operation and Development (OECD). The UK is in a minority by using this approach to calculate nearly all investment expenditure other than residential investment, and
- calculating the total supply of capital goods to the domestic economy – this is often referred to as a commodity flow model (CFM) estimate. CFMs are used by many NSIs to monitor and reconcile

imbalances between the demand (expenditure) and supply (output) sides of the economy and are a useful tool in producing a single measure of gross domestic product (GDP). Because they relate the supply of commodities to the components of demand, such as GFCF, information on the former can then be used to construct estimates of the latter. This approach is implemented by the majority of OECD member countries to estimate expenditure on machinery and equipment

Various other methods are used for calculating specific parts of GFCF in the National Accounts. The most common is the use of registration documents for road transport equipment. Construction estimates are often based on indicators approximating the volume of work undertaken. These might include labour inputs, indices of construction output, and the supply of construction materials.

Table 1, which is reproduced from Table 6 in OECD (2001), summarises how these different methods are used for a number of OECD countries.

It is clear from Table 1 that supply-side methods dominate cross-country practices, whether this is directly through surveys of capital goods producers, or indirectly through a CFM. The demand-side approach, by conducting (business) surveys on investment expenditure, is rarely used, with the UK a notable exception. This article investigates the impact of using a commodity flow method to produce estimates of GFCF for the UK. A number of possible advantages could result.

Table 1
OECD country practices in the measurement of gross fixed capital formation

Country	Value/volume of work done by capital goods producers	Capital outlays by purchasers of capital goods	Commodity flow/supply statistics	Other methods and description
Canada	Construction of dwellings	–	Machinery and equipment other than road transport equipment	Construction other than dwellings: labour inputs in physical terms and labour costs, materials supplied and material costs, investment intentions, oil and gas drilling Road transport equipment: estimated commercial share of dealers' sales
United States	Construction (dwellings and other not elsewhere specified)	Improvements to dwellings	Appliances and home furnishings Machinery and equipment	Brokers' commissions on sale of new and existing dwellings: numbers of units sold Construction by non-communications utilities: trend extrapolation Oil and gas well-drilling: footage drilled
Japan	Construction of dwellings, public and unincorporated sectors, other construction	Corporate sector and other construction; corporate sector machinery and equipment	–	Machinery and equipment not elsewhere specified: average purchases by farms and unincorporated businesses with estimated numbers of farms/unincorporated businesses
Australia	Construction (dwellings and other)	Transportation machinery and equipment	Machinery and equipment	–
New Zealand	Construction of dwellings and other buildings	Other construction	Machinery and equipment other than road transport equipment	Road transport equipment: registration records
Austria	Construction (dwellings and other)	–	Machinery and equipment other than road transport equipment	Road transport equipment: registration records
Denmark	Construction (private)	Construction (public)	Machinery and equipment other than road transport equipment	Road transport equipment: registration records
Finland	–	–	Machinery and equipment other than road transport equipment	Road transport equipment: registration records Construction of dwellings and other buildings: index of construction output Other construction: assumed to move in line with value added
France	Construction of dwellings (excluding dwellings not sold and major repairs and alterations to dwellings); other construction	–	Machinery and equipment other than road transport equipment	Road transport equipment: registration records Major repairs and alterations to dwellings: trend extrapolation
Germany	Construction	–	Machinery and equipment	–
Italy	Construction	–	Machinery and equipment not elsewhere specified	Road transport equipment: registration records Machinery and equipment produced by the primary, leather goods and footwear industries: trend extrapolation
Netherlands	–	Ships	Machinery and equipment other than ships	Construction: productive hours worked and number of employees in construction
Norway	–	Construction not elsewhere specified, machinery not elsewhere specified	Ships	Road transport equipment: registration records Construction by non-transport and communication services: buildings started Machinery and equipment by non-transport and communication services: assumed to move with gross output
Spain	–	Construction	Machinery and equipment	–
Sweden	Construction of dwellings other than secondary dwellings Construction other than dwellings Construction for agriculture and forestry Machinery and equipment other than road transport equipment	–	–	Road transport equipment: registration records Construction for agriculture: trend extrapolation Land improvement for forestry: trend extrapolation Secondary dwellings: trend extrapolation
Switzerland	–	–	Machinery and equipment	Construction: regression model using deliveries of construction materials, employment in construction, etc.
Turkey	Construction	–	Machinery and equipment	–
United Kingdom	Construction of dwellings	Construction other than dwellings and for agriculture, machinery and equipment	–	Construction for agriculture: government investment grants

Source: OECD (2001)

First, in the short run, more data are available in the UK for the output measure of GDP (GDP(O)) than for the expenditure measure (GDP(E)). Therefore, a CFM may deliver more timely estimates and, as Lynch and Caplan (1991) suggest, the approach could be particularly useful for picking up investment in parts of the economy where survey coverage is generally weak.

Second, there are gains in basing expenditure and output measures on the same sources. Resource cost savings result from not having to administer and process short-run (quarterly) investment surveys. Also, a CFM approach is convenient; it implicitly helps to balance the National Accounts because there is less difficulty in reconciling data on demand and supply in the economy.

Third and finally, concerns may exist over the capability of quarterly investment surveys to accurately capture companies' investment spending. Misreporting could occur because firms face difficulty in both recognising and recording their own expenditure. Firms may not fully understand how investment is defined in the National Accounts and are therefore unsure of which expenditure is current and which is capital. Measurement problems will also be more acute in the short run, due to limited information. For example, firms will typically have access to their full-year accounts when completing annual business surveys, but not to their quarterly ones.

The estimation of own-account software expenditure in the UK National Accounts offers a good example of the limitations of business surveys in recording capital expenditure (see Chamberlin, Clayton and Farooqui 2007 for more background). Once it was decided to classify software as a capital good in the 1993 System of National Accounts, it was obvious that there would have to be a consistent treatment of software that firms purchased and that produced in-house, known as own-account (after all, they are two means to the same end). While it was relatively easy to capture expenditure on purchased software, it was difficult to identify and value the resources used in the development of own-account software. Problems were compounded by the tax system offering encouragement to treat these outlays as current expenditure, creating a discrepancy between the treatment in company financial accounts and in the National Accounts. In telephone interviews of respondents to its quarterly investment inquiry, the Office for National Statistics (ONS) found that only 20 per cent of firms were correctly recording own-account software expenditure in their survey returns.

Despite these problems, the demand-side approach offers some distinct advantages. A CFM measures capital expenditure indirectly so can only proxy the true target. Business investment surveys would provide an independent source of information and, even though this would require the reconciliation of alternative data sources, a more accurate description of investment trends might result. By directly asking firms about their investment expenditure, surveys may be more successful in picking up new shifts in activity. One of the main conclusions of this article is that the CFM approach relies heavily on fixed ratios that may well become outdated, leading to a structural bias in the results. For example, this appears to be the case where CFM-based investment measures are slow to pick up on fundamental shifts in investment, such as the ICT boom in the late 1990s.

Commodity flow model

The supply-side approach to estimating investment is a two-stage process. First, the total supply of goods and services is calculated using data on domestic output and imports. The second stage is to then allocate supply between the different components of demand, including GFCF.

The CFM is essentially a tool designed to analyse the imbalances between demand and supply data, that is, to reconcile the expenditure and output measures of GDP. Burnett (2001) gives a good description of how the model is used by ONS to assist in the quarterly balancing of GDP. However, it can easily be adapted to provide estimates of the demand side if there are complete data on the supply side and some knowledge of how supply is allocated between the demand components.

Central to the operation of the CFM are the annual input-output supply and use tables (SUTs) published by ONS. These show demand and supply data at a 123-industry and 123-product level of detail, as shown in **Figure 1**. In producing these tables, all the data are benchmarked to annual surveys and data from administrative sources, and fully balanced, resulting in uniform income, expenditure and output measures of GDP.

From **Figure 1**, the total supply of each of 123 products in current market prices for a particular year can be expressed as:

$$\text{domestic output} + \text{imports} + \text{trade margins} + \text{net taxes} = \text{total supply}$$

The domestic output of each commodity can be calculated by extrapolating the latest

figures in the SUTs with industry-output growth rates published by ONS in the Index of Production and GDP(O) for the non-production sectors. Here, a simplified assumption is made to deal with the issue of one industry producing multiple products, that is, all the products produced by a certain industry are tied to the same growth rate. For example, the agricultural industry may generate an output of agricultural products and also tourist services but, in this framework, the domestic output of both products will grow at the same rate as the overall industry.

Import statistics of each of the 123 product groups can be deduced from the trade in goods and trade in services data. Trade margins and net taxes for each product are assumed at the same rate as in the most recent SUT.

Once the total supply of each product has been calculated, it is necessary to determine what proportion should be allocated to investment as opposed to the other components of demand. This is shown in the right-hand side of the SUT framework in **Figure 1** where:

$$\begin{aligned} &\text{intermediate consumption} + \text{household} \\ &\text{consumption} + \text{non-profit institutions} \\ &\text{serving households} + \text{GFCF} + \text{valuables} + \\ &\text{inventories} + \text{exports} = \text{total demand} \end{aligned}$$

Because export data are available from the same sources as import data, an estimate of this part of final demand can be produced and subtracted from total supply. The resulting problem is now one of allocating net domestic supply, which can be achieved by using the proportions in the latest SUT. Finally, an in-built spline function in the CFM allows the production of quarterly estimates based on annual SUT data.

The CFM approach based on extrapolating the most recent SUT data is prone to a number of problems. The most significant is that SUTs are produced with a lag of around two years, reflecting the timeliness of certain annual surveys and important administrative data such as that from HM Revenue & Customs, as well as the time required to fully balance the three GDP measures. Therefore, if the economy undergoes an important structural change in this time, the ratios can become outdated and impart a bias on the results. A second consideration is that recent estimates of net domestic supply are generated using relatively new and unrevised output and trade data. Therefore, the CFM estimates of investment will not be immune to revision, and will be revised in line with the source data.

Figure 1
The input-output supply and use framework

Supply				Use																	
Industry				Final demand at purchasers' prices																	
Product	Domestic supply at basic prices	Imports – goods and services	Distributors' trading margins	Taxes less subsidies on products	Total supply	Product	Intermediate demand at purchasers' prices	Total intermediate consumption	Households	Non-profit institutions serving households	General government	Valuables	Change in inventories	Exports - goods and services	Total demand						
	Note: supply table industry/product detail is not available due to disclosure rules																				
	Total output																				

Supply-side estimates of UK GFCF

The latest SUTs were published in autumn 2006 and cover the period 1992 to 2004. Hence, these data could be used to produce estimates of GFCF from 2006Q3 onwards. The results from the CFM estimates, along with the published data, are displayed in **Figure 2**.

Annual CFM estimates for 2004 should correspond with those published in the National Accounts. One thing to note here is that the published data have been adjusted to exclude the effects of the own-account software revision made in the reduced-scope *Blue Book 2007* for which no corresponding SUTs were provided. The data have been backcast by four years to 2000 so as to provide sufficient observations for the spline function to work and provide a quarterly path of the data.

Estimates after 2004 reflect the workings of the CFM in extrapolating the net domestic supply of all 123 products and allocating by product to each component of demand, based on the SUT 2004 ratios. Of course, if this method were being used in real time, the first GFCF supply-side estimate would be 2006Q3. Estimates for 2005Q3 to 2006Q2 would need to come from extrapolating the 2003 SUT published in autumn 2005, and so on.

There are two noticeable features of the data. First, the CFM estimates tend to be relatively smooth compared with the published data. Second, the CFM estimates appear quite poor in that they badly underestimate the path of UK investment after 2004. Here, they are failing to pick up the strong rise in construction investment over the period.

This is also demonstrated in **Figure 3**, which plots the growth rates of the investment measures in Figure 2 along with the CFM estimate of total economy net supply (that is, all 123 products). Unsurprisingly, the growth rates of the CFM measure and that of total net supply are similar, but both are much less volatile than the published National Accounts investment series.

It seems that a general disadvantage of the CFM is that it fails to generate sufficient volatility in the investment data. It is not immediately obvious why this should be, since a large increase in the net supply of products largely classified as investment should be reflected in the estimates. It seems, therefore, that the fixed ratios implemented in the CFM may be to blame. In other words, the CFM applies a constant proportion of the total net supply of each product to GFCF, based on the ratio in the most recent SUT. Changes in this ratio over time, that is, the intensity of GFCF in total supply, would generate additional volatility.

Figure 4 plots the ratio of GFCF to total supply for the latest set of SUTs (1992 to 2004) published alongside *Blue Book 2006*. The ratio is not constant: there is an evident spike between 1998 and 2000 coinciding with a period of relatively strong investment growth in the UK economy. High investment growth rates at the end of the 1990s were the product of strong growth in the supply of certain products, coupled with an increased proportion represented by GFCF, particularly in construction, motor vehicles and office machinery products.

The pick-up in investment intensity of the construction, motor vehicles and office

machinery products after 2001 was largely driven by construction and may account for the recent poor performance of CFM estimates in Figure 2. The whole economy ratio over this period, though, has remained fairly stable due to offsetting effects on the ratio from other machinery and software, where investment has grown at a slower rate than total supply.

Recursive CFM estimates are presented in **Figure 5**. Here, successive annual SUT data (1992 to 2003) are used to generate real-time investment estimates, with the results plotted against the published National Accounts figures. Clearly, the investment boom between 1998 and 1999 was not fully accounted for by the CFM approach, which would have been calculated using the ratios prevailing in the 1996 and 1997 SUTs. Looking at Figure 4, it is obvious that these ratios were too conservative. CFM estimates are then seen to jump in 2000 to 2001, as the 1997 ratios are replaced with the 1998 ratios. However, the CFM approach does seem to work reasonably well in the short run and where the ratio of GFCF to supply is relatively constant.

Conclusion

Using a CFM to derive estimates of investment is akin to forecasting, albeit using relevant information on the supply side of the economy as indicators. Hence these estimates are prone to the same problems encountered when forecasting, that is, structural changes in the economy that render the particular model obsolete. CFM-based estimates of investment do tend to work reasonably well over short periods of time when the economy is more stable.

Figure 2
Supply-side estimates of GFCF

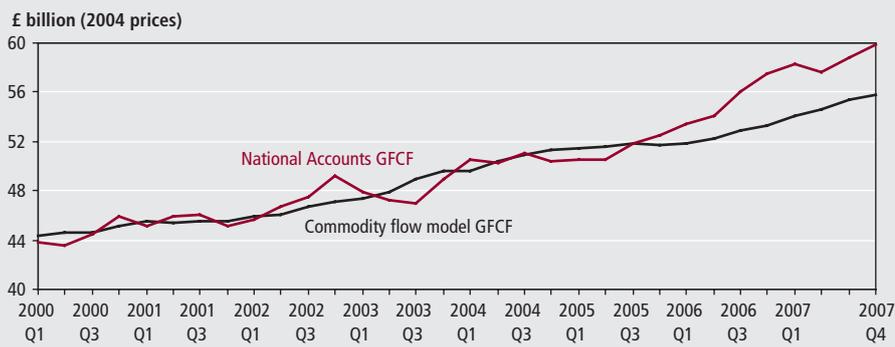


Figure 3
GFCF growth rates

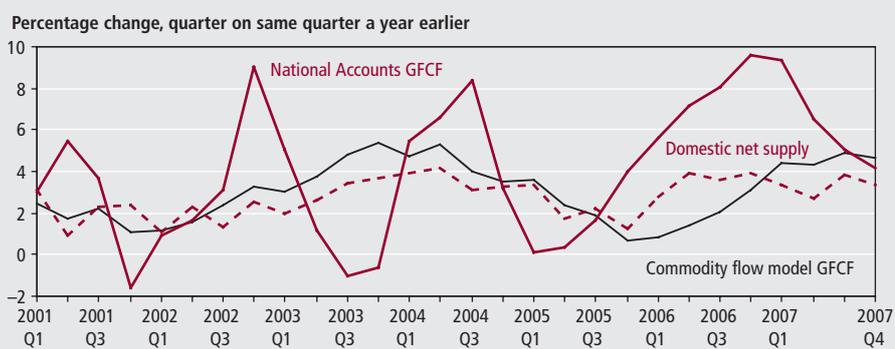


Figure 4
GFCF as a proportion of total supply, as at Blue Book 2006

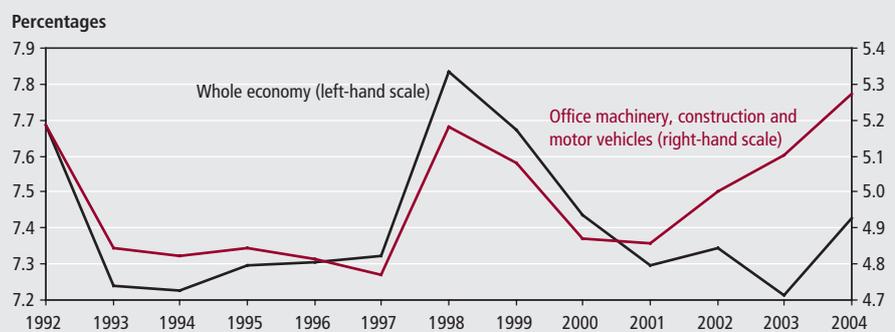
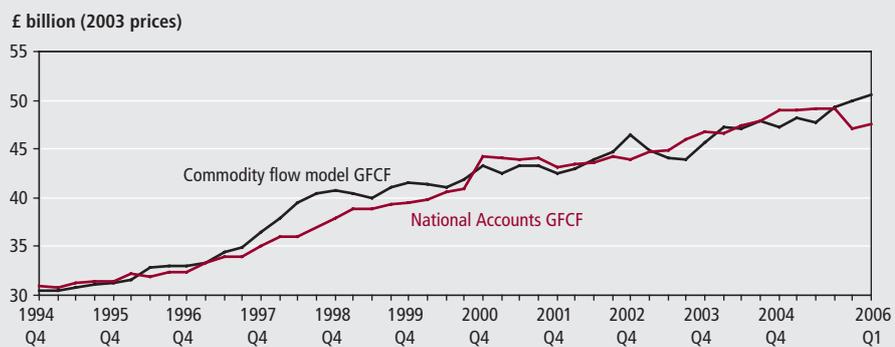


Figure 5
Recursive CFM estimates



If net supply is allocated between intermediate and final demand on the basis of existing ratios, then CFM measures are prone to that ratio changing. For

example, in the late 1990s, there was a large increase in the UK net supply of computers and other office machinery which was wholly accounted for by GFCF.

The process of allocating based on past ratios would see too much of that increase in net supply allocated to intermediate consumption or other parts of final demand. This demonstrates the potential importance of firm surveys, whether they are asking capital goods producers what they produced or capital goods purchasers what they purchased, as an alternative and independent source of information.

A potentially useful refinement of the CFM is to use information on the other components of demand to improve the measure of investment. For example, if ONS were reasonably confident about the quality of its household consumption and government spending data, it could subtract this as well as exports from estimates of total supply. So, if it were found that the total net supply of certain products grew at a faster rate, but that there was no corresponding pick up in household or government demand, then it would implicitly suggest that investment was also growing at a faster rate. The disadvantage of this approach is that investment estimates tend to become a residual, that is, the part of total supply not already accounted for by other factors. As a result, any errors in the estimates of these components of demand will feed directly into investment estimates.

In conclusion, it should be noted that the CFM gives a relatively timely and detailed product breakdown of investment expenditure and is particularly useful where the coverage of conventional business surveys is weak. Given the problems often encountered with short-term (quarterly) investment surveys, the CFM could still be useful as an indicator of investment trends.

CONTACT

✉ elmr@ons.gsi.gov.uk

REFERENCES

Burnett M (2001) 'Commodity flow analysis in quarterly balancing of GDP', *Economic Trends* 566, pp 33–7.

Chamberlin G, Clayton T and Farooqui S (2007) 'New measures of UK private sector software investment', *Economic & Labour Market Review* 1(5), pp 17–28.

Lynch R and Caplan D (1991) 'The use of supply-side estimates in the national accounts', *Economic Trends* 458, pp 93–7.

OECD (2001) 'Quarterly National Accounts: Sources and Methods Used by OECD Member Countries'.

FEATURE

Ian Richardson
Office for National Statistics

Services producer price index (experimental) – second quarter 2008

SUMMARY

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

Prices of business-to-business services rose by 3.8 per cent in the year to the second quarter of 2008. This is based on a comparison of the change in the top-level services producer price index (SPPI) on a net sector basis (see technical note 2).

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

The top-level results, on both gross and net sector bases, are shown in Table 1. In 2008 Q2, the top-level SPPI (net sector) rose by 1.5 per cent compared with the previous quarter.

Figure 2 depicts the SPPI annual growths for both net and gross sector time series. The annual growth for the SPPI net sector rose to 3.8 per cent in 2008 Q2, up from 3.6 per cent in 2008 Q1. The gross SPPI annual growth of 2.8 per cent in 2008 Q2 was down from 3.2 per cent in the previous quarter.

Industry-specific indices

Tables available on the ONS website contain the data for the 33 industries for which indices of services producer prices are currently available. The weights for each industry index are shown at both gross and net sector levels. Comparing 2008 Q2 with 2007 Q2, some key points to note are:

- freight transport by road rose 7.2 per cent, largely due to the rising cost of fuel
- freight forwarding rose by 12.1 per cent, largely due to the rising cost of fuel
- property rentals rose by 2.8 per cent, due to sustained growth within the sector as reported by the Investment Property Databank

Next results

The next set of SPPI results will be rebased to 2005=100 and published on 26 November 2008 on the ONS website at: www.statistics.gov.uk/sppi

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

Percentage change, quarter on same quarter a year earlier

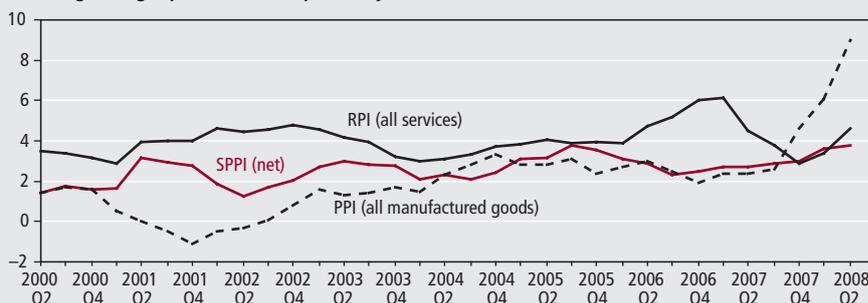
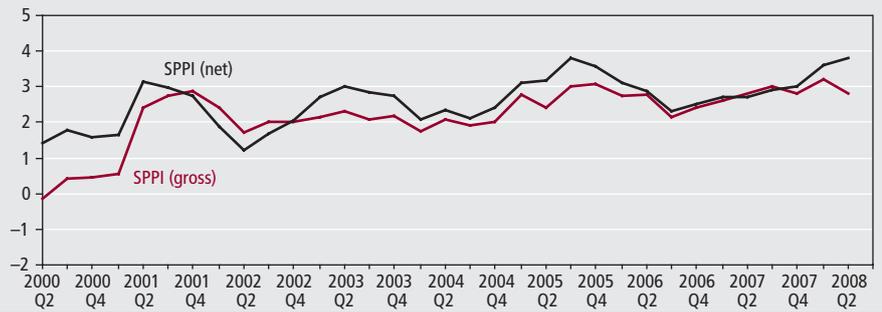


Figure 2
Experimental gross and net sector top-level SPPI

Percentage change, quarter on same quarter a year earlier



Further information

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

www.statistics.gov.uk/sppi

A Summary Quality Report for the SPPI can be found at:

www.statistics.gov.uk/about/data/methodology/quality/information_business_statistics.asp

Table 1
SPPI results

	SPPI quarterly index values, 2000=100		Percentage change, quarter on same quarter a year earlier	
	Gross sector	Net sector	Gross sector	Net sector
2000 Q1	100.1	99.7	-0.8	1.0
2000 Q2	99.9	99.8	-0.1	1.4
2000 Q3	99.9	100.1	0.4	1.8
2000 Q4	100.1	100.5	0.5	1.6
2001 Q1	100.6	101.3	0.5	1.6
2001 Q2	102.3	102.9	2.4	3.1
2001 Q3	102.7	103.1	2.8	3.0
2001 Q4	102.9	103.2	2.8	2.7
2002 Q1	103.1	103.2	2.5	1.9
2002 Q2	104.1	104.2	1.8	1.3
2002 Q3	104.8	104.8	2.0	1.6
2002 Q4	105.0	105.3	2.0	2.0
2003 Q1	105.3	106.0	2.1	2.7
2003 Q2	106.5	107.3	2.3	3.0
2003 Q3	106.9	107.8	2.0	2.9
2003 Q4	107.3	108.2	2.2	2.8
2004 Q1	107.1	108.2	1.7	2.1
2004 Q2	108.7	109.8	2.1	2.3
2004 Q3	108.9	110.1	1.9	2.1
2004 Q4	109.4	110.8	2.0	2.4
2005 Q1	110.1	111.6	2.8	3.1
2005 Q2	111.3	113.3	2.4	3.2
2005 Q3	112.2	114.3	3.0	3.8
2005 Q4	112.8	114.8	3.1	3.6
2006 Q1	113.1	115.1	2.7	3.1
2006 Q2	114.4	116.6	2.8	2.9
2006 Q3	114.7	116.9	2.2	2.3
2006 Q4	115.5	117.7	2.4	2.5
2007 Q1	116.0	118.2	2.6	2.7
2007 Q2	117.6	119.7	2.8	2.7
2007 Q3	118.1	120.3	3.0	2.9
2007 Q4	118.7	121.2	2.8	3.0
2008 Q1	119.7	122.4	3.2	3.6
2008 Q2	120.9	124.2	2.8	3.8

CONTACT

✉ elmr@ons.gsi.gov.uk

TECHNICAL NOTE

- 1 The experimental services producer price index (SPPI) replaced the former corporate services price index (CSPI). It measures movements in prices charged for services supplied by businesses to other businesses and to local and national government. It is not classified as a National Statistic.
- 2 Unless otherwise stated, index numbers shown in the main text are on a net sector basis. These relate only to transactions between the corporate services sector and other sectors. Detailed tables available on the ONS website also contain gross sector indices, which include transactions within the corporate services sector.
- 3 Indices relate to average prices per quarter. The full effect of a price change occurring within a quarter will only be reflected in the index for the following quarter. All index numbers exclude VAT and are not seasonally adjusted.
- 4 SPPI inflation is the percentage change in the net sector index for the latest quarter compared with the corresponding quarter in the previous year.
- 5 Grants from the European Commission helped ONS to begin developing the SPPI. Funding of approximately 600,000 euros was awarded between 2002 and 2005. This has now ceased.
- 6 A number of external data sources are currently used in the compilation of the SPPI, as follows:
 - Investment Property Database (IPD) – property rental payments
 - Office of Communications (Ofcom) – business telecommunications
 - Office of Rail Regulation (ORR) – business rail fares
 - Office of Water Services (OFWAT) – sewerage services
 - Parcelforce – national post parcels
- 7 From the next release on 26 November 2008, the SPPI will be rebased to 2005=100. Further details will be provided with this release.

Key time series

1 National accounts aggregates

Last updated: 30/09/08

Seasonally adjusted

	£ million		Indices (2003 = 100)						
	At current prices		Value indices at current prices		Chained volume indices			Implied deflators ³	
	Gross domestic product (GDP) at market prices	Gross value added (GVA) at basic prices	GDP at market prices ¹	GVA at basic prices	Gross national disposable income at market prices ²	GDP at market prices	GVA at basic prices	GDP at market prices	GVA at basic prices
	YBHA	ABML	YBEU	YBEX	YBFP	YBEZ	CGCE	YBGB	CGBV
2002	1,075,564	957,094	94.4	94.3	97.1	97.3	97.2	97.0	97.0
2003	1,139,746	1,015,008	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004	1,200,595	1,068,574	105.3	105.3	102.8	102.8	102.7	102.5	102.5
2005	1,252,505	1,115,121	109.9	109.9	104.2	104.9	104.9	104.8	104.7
2006	1,321,860	1,177,232	116.0	116.0	106.1	107.8	107.8	107.5	107.5
2007	1,401,042	1,247,721	122.9	122.9	109.6	111.1	111.1	110.6	110.6
2002 Q1	263,968	234,651	92.6	92.5	96.1	96.5	96.5	96.0	95.8
2002 Q2	267,473	238,071	93.9	93.8	96.2	96.9	96.8	96.9	96.9
2002 Q3	270,655	240,922	95.0	94.9	98.2	97.5	97.5	97.4	97.4
2002 Q4	273,468	243,450	96.0	95.9	98.1	98.1	98.1	97.8	97.8
2003 Q1	278,207	247,866	97.6	97.7	99.4	98.7	98.7	98.9	98.9
2003 Q2	283,305	252,613	99.4	99.6	99.2	99.6	99.6	99.8	99.9
2003 Q3	287,130	255,626	100.8	100.7	99.8	100.4	100.3	100.4	100.4
2003 Q4	291,104	258,903	102.2	102.0	101.6	101.3	101.3	100.8	100.7
2004 Q1	293,234	260,813	102.9	102.8	101.8	101.8	101.7	101.1	101.1
2004 Q2	299,120	266,134	105.0	104.9	102.5	102.7	102.7	102.2	102.1
2004 Q3	301,608	268,390	105.9	105.8	102.2	102.9	102.9	102.8	102.8
2004 Q4	306,633	273,237	107.6	107.7	104.5	103.6	103.6	103.9	103.9
2005 Q1	308,895	274,979	108.4	108.4	104.2	104.0	104.0	104.2	104.2
2005 Q2	313,126	278,928	109.9	109.9	105.6	104.7	104.7	105.0	104.9
2005 Q3	313,026	278,181	109.9	109.6	103.3	105.1	105.1	104.5	104.3
2005 Q4	317,458	283,033	111.4	111.5	103.9	105.6	105.7	105.5	105.5
2006 Q1	324,523	289,466	113.9	114.1	105.2	106.8	106.9	106.6	106.7
2006 Q2	326,609	290,681	114.6	114.6	106.1	107.6	107.7	106.6	106.4
2006 Q3	332,954	296,264	116.9	116.8	106.4	108.0	108.1	108.2	108.0
2006 Q4	337,774	300,821	118.5	118.5	106.9	109.0	109.0	108.8	108.7
2007 Q1	342,597	304,405	120.2	120.0	107.5	109.9	110.0	109.4	109.1
2007 Q2	348,439	310,094	122.3	122.2	108.9	110.8	110.8	110.4	110.3
2007 Q3	353,386	314,835	124.0	124.1	109.6	111.6	111.7	111.1	111.1
2007 Q4	356,620	318,387	125.2	125.5	112.5	112.2	112.2	111.6	111.9
2008 Q1	362,212	323,349	127.1	127.4	113.6	112.5	112.5	113.0	113.3
2008 Q2	363,719	324,403	127.6	127.8	111.9	112.5	112.5	113.5	113.6

Percentage change, quarter on corresponding quarter of previous year

	IHYO	ABML ⁴	YBGO ⁴	IHYR	ABMM ⁴	IHYU	ABML/ABMM ⁴
2002 Q1	4.4	4.5	4.4	1.8	1.4	2.5	3.1
2002 Q2	5.1	5.5	5.1	2.0	1.5	3.1	3.8
2002 Q3	5.9	6.0	5.9	2.2	1.9	3.6	4.1
2002 Q4	5.7	5.8	5.7	2.4	2.4	3.2	3.3
2003 Q1	5.4	5.6	5.4	2.3	2.3	3.0	3.3
2003 Q2	5.9	6.1	5.9	2.8	2.9	3.0	3.1
2003 Q3	6.1	6.1	6.1	2.9	2.9	3.1	3.1
2003 Q4	6.4	6.3	6.4	3.2	3.3	3.1	3.0
2004 Q1	5.4	5.2	5.4	3.1	3.0	2.2	2.2
2004 Q2	5.6	5.4	5.6	3.1	3.1	2.4	2.2
2004 Q3	5.0	5.0	5.0	2.4	2.6	2.4	2.4
2004 Q4	5.3	5.5	5.3	2.9	2.3	3.0	3.2
2005 Q1	5.3	5.4	5.3	2.2	2.3	3.0	3.1
2005 Q2	4.7	4.8	4.7	1.9	2.0	2.7	2.7
2005 Q3	3.8	3.6	3.8	2.1	2.2	1.6	1.4
2005 Q4	3.5	3.6	3.5	2.0	2.0	1.5	1.5
2006 Q1	5.1	5.3	5.1	2.7	2.8	2.3	2.4
2006 Q2	4.3	4.2	4.3	2.7	2.8	1.5	1.4
2006 Q3	6.4	6.5	6.4	2.8	2.8	3.5	3.6
2006 Q4	6.4	6.3	6.4	2.9	3.1	3.1	3.0
2007 Q1	5.6	5.2	5.6	2.9	2.8	2.6	2.3
2007 Q2	6.7	6.7	6.7	3.0	2.9	3.6	3.7
2007 Q3	6.1	6.3	6.1	3.3	3.3	2.7	2.9
2007 Q4	5.6	5.8	5.6	2.9	2.9	2.6	2.9
2008 Q1	5.7	6.2	5.7	2.3	2.3	3.3	3.8
2008 Q2	4.4	4.6	4.4	1.5	1.6	2.8	3.0

Notes:

1 "Money GDP".

2 This series is only updated once a quarter, in line with the full quarterly national accounts data set.

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

4 Derived from these identification (CDID) codes.

Source: Office for National Statistics

2 Gross domestic product: by category of expenditure

Last updated: 30/09/08

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

	Domestic expenditure on goods and services at market prices											Gross domestic at product market prices	
	Final consumption expenditure			Gross capital formation					Exports of goods and services	Gross final expenditure	less imports of goods and services		Statistical discrepancy (expenditure)
	Households	Non-profit institutions ¹	General government	Gross fixed capital formation	Changes in inventories ²	Acquisitions less disposals of valuables	Total						
ABJR	HAYO	NMRY	NPQT	CAFU	NPJR	YBIM	IKBK	ABMG	IKBL	GIXS	ABMI		
2002	693,124	27,576	224,973	184,701	2,289	183	1,133,077	285,433	1,418,531	309,982	0	1,108,508	
2003	714,608	27,668	232,819	186,700	3,983	-37	1,165,741	290,677	1,456,418	316,672	0	1,139,746	
2004	736,857	27,198	240,672	195,782	4,371	-42	1,204,838	304,699	1,509,537	338,359	0	1,171,178	
2005	751,288	27,212	244,850	200,187	4,814	-354	1,227,997	329,491	1,557,487	362,211	0	1,195,276	
2006	766,378	28,289	248,776	212,146	4,575	290	1,260,454	365,818	1,626,272	397,076	0	1,229,196	
2007	789,163	29,269	253,200	227,188	6,849	535	1,306,204	349,290	1,655,493	389,724	628	1,266,397	
2002 Q1	171,546	6,871	55,781	44,562	1,372	66	280,217	70,659	350,877	76,009	0	274,918	
2002 Q2	172,790	6,867	56,313	45,610	367	48	289,605	72,740	354,783	78,682	0	276,010	
2002 Q3	173,839	6,907	56,455	46,422	287	62	284,033	72,259	356,315	78,344	0	277,923	
2002 Q4	174,949	6,931	56,424	48,107	263	7	286,822	69,775	356,556	76,947	0	279,657	
2003 Q1	176,080	6,949	57,130	46,805	-647	-8	286,469	73,942	360,416	79,207	0	281,208	
2003 Q2	178,451	6,889	57,711	46,131	190	94	289,609	71,934	361,538	77,711	0	283,851	
2003 Q3	179,545	6,913	58,472	45,964	2,065	-68	292,894	71,671	364,561	78,577	0	285,990	
2003 Q4	180,532	6,917	59,506	47,800	2,375	-55	296,769	73,130	369,903	81,177	0	288,697	
2004 Q1	182,394	6,950	60,023	48,869	-684	112	297,664	74,062	371,726	81,742	0	289,984	
2004 Q2	184,099	6,823	59,806	49,385	603	-90	300,625	75,645	376,270	83,564	0	292,706	
2004 Q3	184,893	6,760	60,210	49,061	936	-96	301,763	76,739	378,502	85,230	0	293,272	
2004 Q4	185,471	6,665	60,633	48,467	3,516	32	304,786	78,253	383,039	87,823	0	295,216	
2005 Q1	186,342	6,867	60,787	48,845	3,151	-158	305,833	77,173	383,006	86,553	0	296,453	
2005 Q2	187,191	6,806	61,208	49,264	1,895	86	306,448	80,809	387,257	88,955	0	298,302	
2005 Q3	188,172	6,784	61,370	51,286	187	-201	307,597	84,033	391,629	92,100	0	299,529	
2005 Q4	189,583	6,755	61,485	50,792	-419	-81	308,119	87,476	395,595	94,603	0	300,992	
2006 Q1	189,581	6,945	61,989	50,715	1,593	101	310,924	96,005	406,929	102,518	0	304,412	
2006 Q2	192,015	7,037	61,854	52,139	-153	229	313,121	98,339	411,460	105,003	0	306,456	
2006 Q3	191,988	7,120	62,329	53,681	1,844	-28	316,934	85,722	402,656	94,804	0	307,853	
2006 Q4	192,794	7,187	62,604	55,611	1,291	-12	319,475	85,752	405,227	94,751	0	310,475	
2007 Q1	194,532	7,243	62,927	56,457	1,449	73	322,682	86,055	408,737	95,628	122	313,232	
2007 Q2	196,339	7,260	63,193	56,209	623	329	323,953	86,847	410,800	95,360	151	315,591	
2007 Q3	198,538	7,314	63,468	56,764	2,744	44	328,872	88,508	417,380	99,549	173	318,004	
2007 Q4	199,754	7,452	63,612	57,758	2,033	89	330,697	87,880	418,576	99,187	182	319,570	
2008 Q1	201,446	7,602	64,227	56,609	485	205	330,573	88,535	419,108	98,860	203	320,452	
2008 Q2	201,195	7,728	64,544	55,031	1,163	429	330,089	88,493	418,583	98,333	203	320,453	

Percentage change, quarter on corresponding quarter of previous year

2002 Q1	4.0	-1.4	4.0	0.9		3.3	-2.6	2.0	2.6		1.8
2002 Q2	4.1	-0.4	4.4	1.6		2.8	3.1	2.9	6.0		2.0
2002 Q3	3.4	0.6	3.3	3.1		2.8	4.5	3.2	6.5		2.2
2002 Q4	3.2	1.4	2.1	9.0		3.9	-0.8	2.9	4.5		2.4
2003 Q1	2.6	1.1	2.4	5.0		2.2	4.6	2.7	4.2		2.3
2003 Q2	3.3	0.3	2.5	1.1		2.7	-1.1	1.9	-1.2		2.8
2003 Q3	3.3	0.1	3.6	-1.0		3.1	-0.8	2.3	0.3		2.9
2003 Q4	3.2	-0.2	5.5	-0.6		3.5	4.8	3.7	5.5		3.2
2004 Q1	3.6	0.0	5.1	4.4		3.9	0.2	3.1	3.2		3.1
2004 Q2	3.2	-1.0	3.6	7.1		3.8	5.2	4.1	7.5		3.1
2004 Q3	3.0	-2.2	3.0	6.7		3.0	7.1	3.8	8.5		2.5
2004 Q4	2.7	-3.6	1.9	1.4		2.7	7.0	3.6	8.2		2.3
2005 Q1	2.2	-1.2	1.3	0.0		2.7	4.2	3.0	5.9		2.2
2005 Q2	1.7	-0.2	2.3	-0.2		1.9	6.8	2.9	6.5		1.9
2005 Q3	1.8	0.4	1.9	4.5		1.9	9.5	3.5	8.1		2.1
2005 Q4	2.2	1.4	1.4	4.8		1.1	11.8	3.3	7.7		2.0
2006 Q1	1.7	1.1	2.0	3.8		1.7	24.4	6.2	18.4		2.7
2006 Q2	2.6	3.4	1.1	5.8		2.2	21.7	6.2	18.0		2.7
2006 Q3	2.0	5.0	1.6	4.7		3.0	2.0	2.8	2.9		2.8
2006 Q4	1.7	6.4	1.8	9.5		3.7	-2.0	2.4	0.2		3.2
2007 Q1	2.6	4.3	1.5	11.3		3.8	-10.4	0.4	-6.7		2.9
2007 Q2	2.3	3.2	2.2	7.8		3.5	-11.7	-0.2	-9.2		3.0
2007 Q3	3.4	2.7	1.8	5.7		3.8	3.3	3.7	5.0		3.3
2007 Q4	3.6	3.7	1.6	3.9		3.5	2.5	3.3	4.7		2.9
2008 Q1	3.6	5.0	2.1	0.3		2.4	2.9	2.5	3.4		2.3
2008 Q2	2.5	6.4	2.1	-2.1		1.9	1.9	1.9	3.1		1.5

Notes:

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

Source: Office for National Statistics

3 Labour market summary

Last updated: 17/09/08

United Kingdom (thousands) seasonally adjusted

All aged 16 and over									
	All	Total economically active	Total in employment	Unemployed	Economically inactive	Economic activity rate (%)	Employment rate (%)	Unemployment rate (%)	Economic inactivity rate (%)
	1	2	3	4	5	6	7	8	9
All persons	MGSL	MGSF	MGRZ	MGSC	MGSI	MGWG	MGSR	MGSX	YBTC
May-Jul 2006	48,249	30,733	29,029	1,704	17,516	63.7	60.2	5.5	36.3
May-Jul 2007	48,659	30,858	29,205	1,652	17,801	63.4	60.0	5.4	36.6
Aug-Oct 2007	48,766	30,954	29,317	1,637	17,812	63.5	60.1	5.3	36.5
Nov-Jan 2008	48,875	31,083	29,478	1,605	17,792	63.6	60.3	5.2	36.4
Feb-Apr 2008	48,983	31,197	29,554	1,643	17,786	63.7	60.3	5.3	36.3
May-Jul 2008	49,092	31,262	29,538	1,724	17,829	63.7	60.2	5.5	36.3
Male	MGSM	MGSJ	MGSA	MGSD	MGSJ	MGWH	MGSS	MGSY	YBTD
May-Jul 2006	23,427	16,639	15,656	984	6,788	71.0	66.8	5.9	29.0
May-Jul 2007	23,657	16,751	15,804	947	6,906	70.8	66.8	5.7	29.2
Aug-Oct 2007	23,716	16,779	15,852	927	6,936	70.8	66.8	5.5	29.2
Nov-Jan 2008	23,775	16,848	15,923	925	6,927	70.9	67.0	5.5	29.1
Feb-Apr 2008	23,834	16,918	15,980	938	6,915	71.0	67.0	5.5	29.0
May-Jul 2008	23,892	16,951	15,935	1,015	6,941	70.9	66.7	6.0	29.1
Female	MGSN	MGSJ	MGSB	MGSE	MGSK	MGWI	MGST	MGSZ	YBTE
May-Jul 2006	24,822	14,094	13,374	720	10,728	56.8	53.9	5.1	43.2
May-Jul 2007	25,002	14,107	13,401	706	10,895	56.4	53.6	5.0	43.6
Aug-Oct 2007	25,051	14,175	13,465	710	10,876	56.6	53.7	5.0	43.4
Nov-Jan 2008	25,100	14,235	13,556	680	10,865	56.7	54.0	4.8	43.3
Feb-Apr 2008	25,150	14,279	13,574	704	10,871	56.8	54.0	4.9	43.2
May-Jul 2008	25,199	14,312	13,603	709	10,888	56.8	54.0	5.0	43.2
All Aged 16 to 59/64									
	All	Total economically active	Total in employment	Unemployed	Economically inactive	Economic activity rate (%)	Employment rate (%)	Unemployment rate (%)	Economic inactivity rate (%)
	10	11	12	13	14	15	16	17	18
All persons	YBTF	YBSK	YBSE	YBSH	YBSN	MGSO	MGSU	YBTI	YBTL
May-Jul 2006	37,366	29,552	27,875	1,677	7,814	79.1	74.6	5.7	20.9
May-Jul 2007	37,574	29,614	27,988	1,626	7,961	78.8	74.5	5.5	21.2
Aug-Oct 2007	37,624	29,681	28,069	1,613	7,943	78.9	74.6	5.4	21.1
Nov-Jan 2008	37,674	29,792	28,205	1,587	7,882	79.1	74.9	5.3	20.9
Feb-Apr 2008	37,724	29,865	28,246	1,619	7,859	79.2	74.9	5.4	20.8
May-Jul 2008	37,774	29,911	28,209	1,702	7,863	79.2	74.7	5.7	20.8
Male	YBTG	YBSL	YBSF	YBSI	YBSO	MGSP	MGSV	YBTJ	YBTM
May-Jul 2006	19,373	16,248	15,276	972	3,125	83.9	78.9	6.0	16.1
May-Jul 2007	19,549	16,331	15,394	937	3,218	83.5	78.7	5.7	16.5
Aug-Oct 2007	19,584	16,359	15,442	917	3,225	83.5	78.8	5.6	16.5
Nov-Jan 2008	19,620	16,414	15,497	917	3,206	83.7	79.0	5.6	16.3
Feb-Apr 2008	19,655	16,462	15,535	927	3,193	83.8	79.0	5.6	16.2
May-Jul 2008	19,690	16,496	15,489	1,006	3,195	83.8	78.7	6.1	16.2
Female	YBTH	YBSM	YBSG	YBSJ	YBSP	MGSQ	MGSW	YBTK	YBTN
May-Jul 2006	17,993	13,304	12,599	705	4,689	73.9	70.0	5.3	26.1
May-Jul 2007	18,025	13,283	12,593	690	4,742	73.7	69.9	5.2	26.3
Aug-Oct 2007	18,040	13,322	12,627	695	4,718	73.8	70.0	5.2	26.2
Nov-Jan 2008	18,055	13,378	12,708	670	4,676	74.1	70.4	5.0	25.9
Feb-Apr 2008	18,069	13,403	12,712	692	4,666	74.2	70.4	5.2	25.8
May-Jul 2008	18,084	13,415	12,720	696	4,669	74.2	70.3	5.2	25.8

Notes:

Relationship between columns: 1 = 2 + 5; 2 = 3 + 4; 6 = 2/1; 7 = 3/1; 8 = 4/2; 9 = 5/1; 10 = 11 + 14; 11 = 12 + 13; 15 = 11/10; 16 = 12/10; 17 = 13/11; 18 = 14/10
The Labour Force Survey is a survey of the population of private households, student halls of residence and NHS accommodation.

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

4 Prices

Last updated: 16/09/08

Percentage change over 12 months

	Consumer prices						Not seasonally adjusted, except for series PLLW, RNPE and RNPF			
	Consumer prices index (CPI)			Retail prices index (RPI)			Output prices		Input prices	
	All items	CPI excluding indirect taxes (CPIY) ¹	CPI at constant tax rates (CPI-CT)	All items	All items excluding mortgage interest payments (RPIX)	All items excluding mortgage interest payments and indirect taxes (RPIY) ²	All manufactured products	Excluding food, beverages, tobacco and petroleum products	Materials and fuels purchased by manufacturing industry	Excluding food, beverages, tobacco and petroleum products
2004 Jan	1.4	1.5	1.3	2.6	2.4	2.0	1.6	1.4	-0.3	0.0
2004 Feb	1.3	1.3	1.1	2.5	2.3	1.9	1.6	1.5	-0.8	-0.4
2004 Mar	1.1	1.1	1.0	2.6	2.1	1.7	1.4	1.5	0.8	-0.1
2004 Apr	1.1	1.1	1.0	2.5	2.0	1.8	1.8	1.3	2.9	-0.1
2004 May	1.5	1.4	1.3	2.8	2.3	2.2	2.5	1.4	5.6	0.6
2004 Jun	1.6	1.5	1.4	3.0	2.3	2.3	2.6	1.4	3.8	1.3
2004 Jul	1.4	1.4	1.2	3.0	2.2	2.0	2.6	1.7	3.9	1.8
2004 Aug	1.3	1.3	1.1	3.2	2.2	2.0	2.8	2.2	4.6	2.4
2004 Sep	1.1	1.0	0.9	3.1	1.9	1.7	3.1	2.3	8.1	3.6
2004 Oct	1.2	1.2	1.1	3.3	2.1	2.0	3.5	2.9	9.0	4.6
2004 Nov	1.5	1.4	1.4	3.4	2.2	2.2	3.5	3.0	6.4	4.5
2004 Dec	1.7	1.7	1.6	3.5	2.5	2.5	2.9	2.5	4.0	4.0
2005 Jan	1.6	1.7	1.5	3.2	2.1	2.0	2.6	2.6	9.7	7.5
2005 Feb	1.7	1.7	1.6	3.2	2.1	2.0	2.7	2.5	11.0	8.2
2005 Mar	1.9	2.0	1.8	3.2	2.4	2.3	2.9	2.4	11.1	7.4
2005 Apr	1.9	2.0	1.9	3.2	2.3	2.3	3.3	2.6	10.1	7.0
2005 May	1.9	2.0	1.8	2.9	2.1	2.2	2.7	2.5	7.6	6.7
2005 Jun	2.0	2.2	1.9	2.9	2.2	2.2	2.5	2.2	11.8	7.4
2005 Jul	2.3	2.5	2.3	2.9	2.4	2.5	3.1	2.2	14.1	8.7
2005 Aug	2.4	2.6	2.3	2.8	2.3	2.3	3.0	1.9	13.0	7.6
2005 Sep	2.5	2.6	2.4	2.7	2.5	2.5	3.3	2.1	10.6	5.6
2005 Oct	2.3	2.5	2.3	2.5	2.4	2.3	2.6	1.4	8.8	7.0
2005 Nov	2.1	2.3	2.1	2.4	2.3	2.3	2.3	1.3	13.5	9.6
2005 Dec	1.9	2.1	1.8	2.2	2.0	2.0	2.4	1.8	17.9	12.0
2006 Jan	1.9	2.1	1.9	2.4	2.3	2.3	2.9	1.7	15.8	10.2
2006 Feb	2.0	2.1	2.0	2.4	2.3	2.3	2.9	1.7	15.0	10.6
2006 Mar	1.8	1.9	1.7	2.4	2.1	2.2	2.5	1.9	13.0	10.0
2006 Apr	2.0	2.1	2.0	2.6	2.4	2.3	2.5	2.2	15.3	10.0
2006 May	2.2	2.3	2.2	3.0	2.9	2.8	3.1	2.4	13.6	8.6
2006 Jun	2.5	2.6	2.4	3.3	3.1	3.2	3.4	2.9	11.1	8.7
2006 Jul	2.4	2.4	2.3	3.3	3.1	3.2	2.9	2.5	10.6	8.3
2006 Aug	2.5	2.6	2.4	3.4	3.3	3.4	2.7	2.3	8.0	7.9
2006 Sep	2.4	2.6	2.3	3.6	3.2	3.3	1.9	2.2	5.4	7.4
2006 Oct	2.4	2.7	2.3	3.7	3.2	3.3	1.6	2.6	4.6	6.3
2006 Nov	2.7	3.0	2.6	3.9	3.4	3.6	1.8	2.5	3.4	4.9
2006 Dec	3.0	3.2	2.9	4.4	3.8	3.9	2.2	2.4	2.1	3.0
2007 Jan	2.7	2.9	2.6	4.2	3.5	3.7	2.2	2.5	-2.8	1.5
2007 Feb	2.8	2.9	2.6	4.6	3.7	3.9	2.3	2.7	-1.7	1.0
2007 Mar	3.1	3.1	2.9	4.8	3.9	4.0	2.7	2.7	0.2	2.0
2007 Apr	2.8	2.9	2.6	4.5	3.6	3.7	2.4	2.3	-1.5	1.4
2007 May	2.5	2.6	2.3	4.3	3.3	3.4	2.4	2.2	0.6	3.1
2007 Jun	2.4	2.5	2.2	4.4	3.3	3.3	2.5	2.0	1.6	2.7
2007 Jul	1.9	2.0	1.7	3.8	2.7	2.6	2.5	2.1	-0.3	1.1
2007 Aug	1.8	1.9	1.6	4.1	2.7	2.6	2.4	2.2	1.3	1.9
2007 Sep	1.8	1.7	1.6	3.9	2.8	2.8	2.9	2.3	7.5	3.7
2007 Oct	2.1	1.9	1.8	4.2	3.1	3.0	4.0	2.4	9.7	3.2
2007 Nov	2.1	1.9	1.8	4.3	3.2	3.0	4.7	2.4	11.5	2.7
2007 Dec	2.1	2.0	1.9	4.0	3.1	3.1	5.0	2.7	13.0	4.5
2008 Jan	2.2	2.1	2.0	4.1	3.4	3.3	5.8	3.5	19.8	7.6
2008 Feb	2.5	2.5	2.3	4.1	3.7	3.6	5.9	3.5	21.1	9.4
2008 Mar	2.5	2.6	2.3	3.8	3.5	3.6	6.5	3.6	21.4	10.2
2008 Apr	3.0	3.0	2.7	4.2	4.0	3.9	7.6	4.7	24.8	13.5
2008 May	3.3	3.3	3.1	4.3	4.4	4.4	9.4	5.9	28.0	14.4
2008 Jun	3.8	3.9	3.6	4.6	4.8	4.9	10.0	6.4	30.5	15.8
2008 Jul	4.4	4.5	4.2	5.0	5.3	5.4	10.3	6.6	28.7	16.8
2008 Aug	4.7	4.9	4.5	4.8	5.2	5.4	9.7	6.3	26.2	16.4

Notes:

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

Source: Office for National Statistics

NOTES TO TABLES

Identification (CDID) codes

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

Conventions

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

The following standard symbols are used:

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

CONCEPTS AND DEFINITIONS

Labour Force Survey 'monthly' estimates

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

Labour market summary**Economically active**

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

Economically inactive

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

Employment and jobs

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

Unemployment

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

Unemployed people:

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

Other key indicators**Claimant count**

The number of people claiming Jobseeker's Allowance benefits.

Earnings

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

Productivity

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

Redundancies

The number of people who:

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

plus the number of people who:

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

Unit wage costs

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

Vacancies

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

Directory of online tables

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

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

Weblink: www.statistics.gov.uk/elmr/10_08/data_page.asp

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

Selected labour market statistics

2.01 Summary of Labour Force Survey data	M	✓
2.02 Employment by age	M	✓
2.03 Full-time, part-time and temporary workers	M	✓
2.04 Public and private sector employment	Q	✓
2.05 Workforce jobs	Q	✓
2.06 Workforce jobs by industry	Q	✓
2.07 Actual weekly hours of work	M	✓
2.08 Usual weekly hours of work	M	✓
2.09 Unemployment by age and duration	M	✓
2.10 Claimant count levels and rates	M	✓
2.11 Claimant count by age and duration	M	✓
2.12 Economic activity by age	M	✓
2.13 Economic inactivity by age	M	✓
2.14 Economic inactivity: reasons	M	✓
2.15 Educational status, economic activity and inactivity of young people	M	✓
2.16 Average earnings – including bonuses	M	✓
2.17 Average earnings – excluding bonuses	M	✓
2.18 Productivity and unit wage costs	M	✓
2.19 Regional labour market summary	M	✓

Weblink: www.statistics.gov.uk/elmr/10_08/data_page.asp

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

Prices

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

Selected output and demand indicators

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

Selected financial statistics

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

Further labour market statistics

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

Weblink: www.statistics.gov.uk/elmr/10_08/data_page.asp

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

Notes

A Annually
Q Quarterly
M Monthly

More information

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

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

Labour Force Survey tables are available from www.statistics.gov.uk/statbase/Product.asp?vlnk=14365

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

Contact points

Recorded announcement of latest RPI

☎ 01633 456961
✉ rpi@ons.gsi.gov.uk

Labour Market Statistics Helpline

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

Earnings Customer Helpline

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

National Statistics Customer Contact Centre

☎ 0845 601 3034
✉ info@statistics.gsi.gov.uk

Skills and Education Network

☎ 024 7682 3439
✉ senet@isc.gov.uk

Department for Children, Schools and Families Public Enquiry Unit

☎ 0870 000 2288

For statistical information on

Average Earnings Index (monthly)

☎ 01633 819024

Claimant count

☎ 01633 456901

Consumer Prices Index

☎ 01633 456900
✉ cpi@ons.gsi.gov.uk

Earnings

Annual Survey of Hours and Earnings
☎ 01633 456120

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

☎ 01633 819008

Low-paid workers

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

Labour Force Survey

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

Economic activity and inactivity

☎ 01633 456901

Employment

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

Employee jobs by industry

☎ 01633 456776

Total workforce hours worked per week

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

Workforce jobs series – short-term estimates

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

Labour costs

☎ 01633 819024

Labour disputes

☎ 01633 456721

Labour Force Survey

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

Labour Force Survey Data Service

☎ 01633 455732
✉ lfs.dataservice@ons.gsi.gov.uk

New Deal

☎ 0114 209 8228

Productivity and unit wage costs

☎ 01633 456720

Public sector employment

General enquiries
☎ 01633 455889

Source and methodology enquiries

☎ 01633 812865

Qualifications (Department for Children, Schools and Families)

☎ 0870 000 2288

Redundancy statistics

☎ 01633 456901

Retail Prices Index

☎ 01633 456900
✉ rpi@ons.gsi.gov.uk

Skills (Department for Innovation, Universities & Skills)

☎ 0870 001 0336

Skill needs surveys and research into skill shortages

☎ 0870 001 0336

Small firms (BERR)

Enterprise Directorate
☎ 0114 279 4439

Subregional estimates

☎ 01633 812038

Annual employment statistics

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

Annual Population Survey, local area statistics

☎ 01633 455070

Trade unions (BERR) Employment relations

☎ 020 7215 5934

Training

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

Employer-provided training (Department for Innovation, Universities & Skills)

☎ 0870 001 0336

Travel-to-Work Areas Composition and review

☎ 01329 813054

Unemployment

☎ 01633 456901

Vacancies

Vacancy Survey: total stocks of vacancies
☎ 01633 455070

ONS economic and labour market publications

ANNUAL

Financial Statistics Explanatory Handbook

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

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

Foreign Direct Investment (MA4)

2006 edition

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

Input-Output analyses for the United Kingdom

2006 edition

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

Research and development in UK businesses (MA14)

2006 edition

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

Share Ownership

2006 edition

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

United Kingdom Balance of Payments (Pink Book)

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

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

United Kingdom National Accounts (Blue Book)

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

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

First releases

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

QUARTERLY

Consumer Trends

2008 quarter 1

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

United Kingdom Economic Accounts

2008 quarter 1. Palgrave Macmillan, ISBN 978-0-230-21759-1. Price £35.

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

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

2008 quarter 1

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

First releases

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

MONTHLY

Financial Statistics

July 2008. Palgrave Macmillan, ISBN 978-0-230-21741-6. Price £47.50.

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

Focus on Consumer Price Indices

June 2008

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

Monthly review of external trade statistics (MM24)

May 2008

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

Producer Price Indices (MM22)

June 2008

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

First releases

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

OTHER

The ONS Productivity Handbook: a statistical overview and guide

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

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

Labour Market Review

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

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

National Accounts Concepts, Sources and Methods

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

Sector classification guide (MA23)

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

Recent articles

APRIL 2008

- The gender pay gap in the UK
Debra Leaker
- CPI and RPI: the 2008 basket of goods and services
Damon Wingfield and Philip Gooding
- International comparisons of labour disputes in 2006
Dominic Hale
- New historical data for assets and liabilities in the UK
Teresa Sbrano
- First findings from the UK Innovation Survey 2007
Stephanie Robson and Greg Haigh
- Services producer price index (experimental) – fourth quarter 2007
Ian Richardson

MAY 2008

- Comparisons between unemployment and the claimant count: 1971 to 2007
Richard Clegg
- Private Finance Initiative and public debt
Martin Kellaway
- Monitoring the coherence of ONS and Purchasing Managers' Index data
Graeme Chamberlin
- Secure access to confidential microdata: four years of the Virtual Microdata Laboratory
Felix Ritchie
- Decomposing the Retail Sales Index implied price deflator and the CPI
Richard McCrae, Craig H McLaren, John Wood and Robin Youll
- Regional economic indicators, May 2008, with a focus on differences in sub-regional economic performances
Birgit Wosnitza and Martin Walker

JUNE 2008

- Labour disputes in 2007
Dominic Hale
- Modernisation of the UK's National Accounts: progress and plans for Blue Book and Pink Book 2008
Simon Humphries
- Labour Force Survey: reweighting and seasonal adjustment review 2008
Nicholas Palmer and Matthew Hughes
- Impact of methodological changes to the Index of Production
Andrew Walton, Robin Youll and Chris Hunt
- Review of Labour Statistics for the United Nations Statistical Commission
Catherine Barham
- Methods explained: the GDP implied deflator
Anis Chowdhury

JULY 2008

- Employment of foreign workers in the UK: 1997 to 2008
Gareth Clancy
- Regional analysis of public sector employment
Andrew Barnard
- The effects of taxes and benefits on household income, 2006/07
Francis Jones
- Dealing with potential bias in early estimates of GDP
Robin Youll
- Recent trends in corporate net lending
Graeme Chamberlin
- Measuring inflation
Rob Pike
- Services producer price index (experimental) – first quarter 2008
Ian Richardson

AUGUST 2008

- Modelling the gender pay gap in the UK: 1998 to 2006
Andrew Barnard
- Inventories: a cross-country comparison of behaviour and methodology
Barry Williams
- Regional gross disposable household income
Eddie Holmes
- SIC 2007: implementation in ONS
John C Hughes
- Measuring the quality of the producer price index – an update
Joanna Woods
- Regional economic indicators, August 2008, with a focus on household income
Birgit Wosnitza and Martin Walker

SEPTEMBER 2008

- Measuring UK inflation
Rob Pike, Catherine Marks and Darren Morgan
- Command GDP: the purchasing power of UK output
Graeme Chamberlin
- The impact of the 2006 National Minimum Wage rise on employment
Ian Mulheirn
- The preliminary R&D satellite account for the UK: a sensitivity analysis
Peter Evans, Michael Hatcher and Damian Whittard
- Job separations in the UK
Katherine Kent
- Methods explained: perpetual inventory method
Sumit Dey-Chowdhury

Future articles

List is provisional and subject to change.

NOVEMBER 2008

- Migrant workers
- Sickness absence from work in the UK
- PPI rebasing
- An analytical example using the new EUKLEMS database: international trade and productivity
- Coherence between annual and monthly indicators