

Measuring the UK economy 2008: the National Statistician's perspective - Karen Dunnell¹

Introduction

1. 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 figures² 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 said³ that this is the "most challenging period since the Monetary Policy Committee was set up in 1997". The current economic conjuncture is a challenge for producers of statistics as well as for policy makers.
2. 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.

Independence of statistics

3. 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 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.
4. 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. I am not suggesting 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 we have 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 their own judgement, as happened recently with retail sales. But if our figures are a surprise we have 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.

5. This is not to say that our 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. We have done a lot in this respect but need, and want, to do more.

The role of ONS statistics in policy

6. 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 MPC. Our 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 over-interpreted, going beyond their design capability or reasonable expectations of quality. Of course there are areas where the Bank and Treasury and others have legitimate expectations that we will improve quality. 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.
7. 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).
8. 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 (see **Box 2**).
9. 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.
10. An example of a response to a key policy need was the introduction of a series for Market Sector GVA – “business output” for short. The Bank'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

11. ONS statistics form the bulk of the statistical evidence base for policy, but the Bank of England and Treasury rightly make use of all the available statistical evidence including that produced by business organisations (such as the Confederation for 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.
12. 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.
13. Generally unofficial surveys and statistics do not fulfil our 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 above all
 - 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. The 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**.

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. This provides 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 and 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, 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.

The challenge for ONS statistics: the economic jigsaw

14. 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.
15. 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.

16. Timeliness and reliability and, the trade-off between them, while important issues, are well trodden territory. I will, therefore, deal with them briefly, discussing the issue of coherence at greater length. ONS's preliminary estimate of quarterly GDP is one of the most timely 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 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.

17. 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 do we not have the picture, the picture itself changes as we compile it. Bits of the jigsaw are changed until we have a picture which makes economic sense.

18. There are a number of levels at which coherence can be assessed. At the highest level does the overall economic picture make sense? I would argue that the picture for the economy as a whole painted by our 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's Productivity Handbook published in 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.

19. 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 we are 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 our understanding of the determinants of productivity have largely resolved the puzzle.

Achieving coherence in the National Accounts: supply and use balancing

20. Achieving coherence within the National accounts is a particular focus of our 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 expenditure, income and production 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 compilation of 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.

BOX 2: BLUE BOOK 2008

The National Income and Expenditure 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 Annual Business Inquiry (ABI) and HMRC estimates of income and profits
- 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 are consumed, through intermediate consumption in the production of the other products, final consumption, capital formation and exports
- additionally the tables show the components of gross value added: compensation of employees; mixed income, gross operating surplus and taxes and subsidies on production

Annual current price supply and use balancing was suspended for the Blue Book 2007. This year's Blue Book saw its reintroduction. This year estimates for 2004-2006 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).

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 eventually
- quarterly balancing to improve the coherence and reliability of the initial quarterly estimates

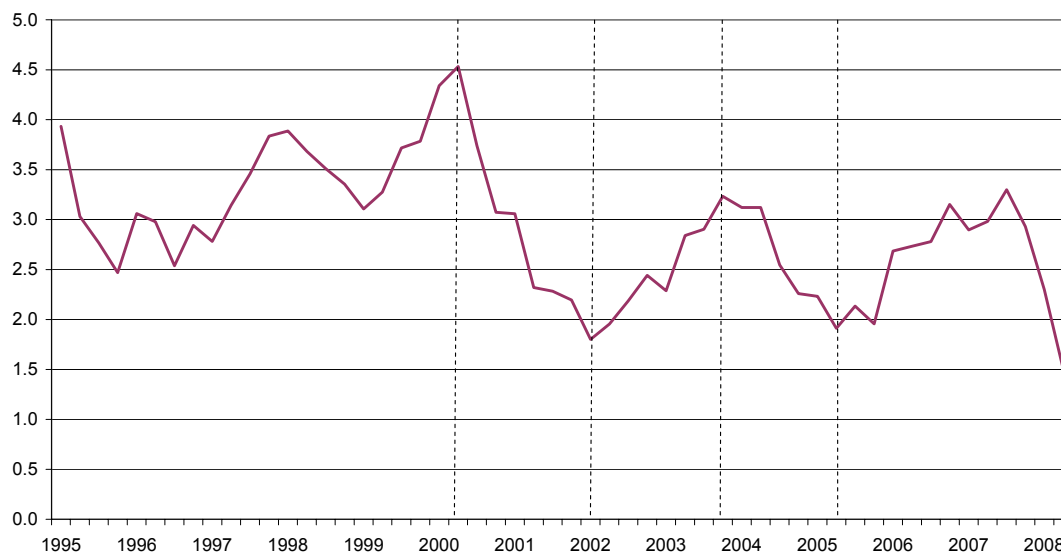
The main methodological change in this year's Blue Book is a new and improved method for banking sector output, known as Financial Intermediation Services Indirectly Measured (FISIM).

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

Anatomy and coherence of the recent slowdown in the economy

21. Annual growth in GDP has fallen markedly over the past year, from 3.3 per cent at its peak in the third quarter of last year to 1.5 per cent in the second quarter of this year. Quarterly growth was zero in the latest quarter. This section analyses which sectors of the economy the current slowdown has occurred in and whether the estimates of demand, output and labour input give a coherent picture - that is, the state of the economic jigsaw.
22. 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. We can only look at the position to date. It is not ONS's role 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 episodes⁴. 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.

Figure 1
Real GDP growth
Percentage change on year earlier

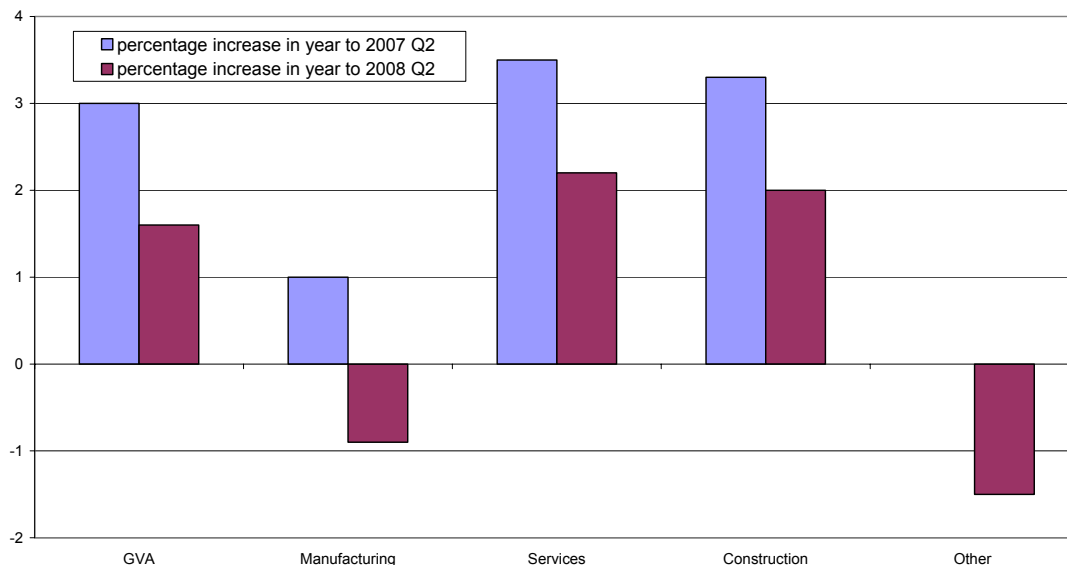


Accounting for the slowdown

23. **Figure 2** attempts to shed some light on the slowdown in growth between 2007Q2 and 2008Q2 by identifying which parts of the economy are driving the downturn. The analysis is in terms of Gross Value Added (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, 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

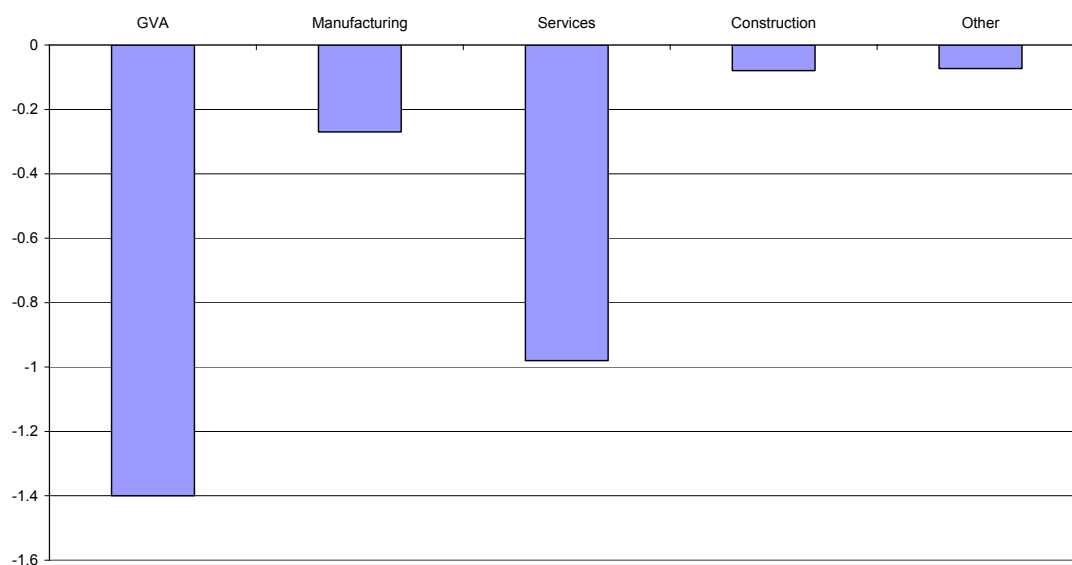
“other” category was -1.5 per cent in 2008 Q2, reflecting a fall in oil and gas extraction. Construction activity saw annual output growth of 2.0 per cent compared with 3.3 per cent a year earlier. The service sector is the largest part of the economy, and here annual growth of 2.2 per cent in 2008Q2 was down from 3.5 per cent in the same quarter of 2007.

Figure 2
GVA growth by sector
 Percentage change on year earlier



24. That annual growth in all the major sectors of the UK economy was lower in 2008Q2 than 2007Q2 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 3
Contributions to GVA slowdown by sector
 Contributions in percentage points to difference in GVA growth in year to 2008 Q2 and in year to 2007 Q2



25. 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.

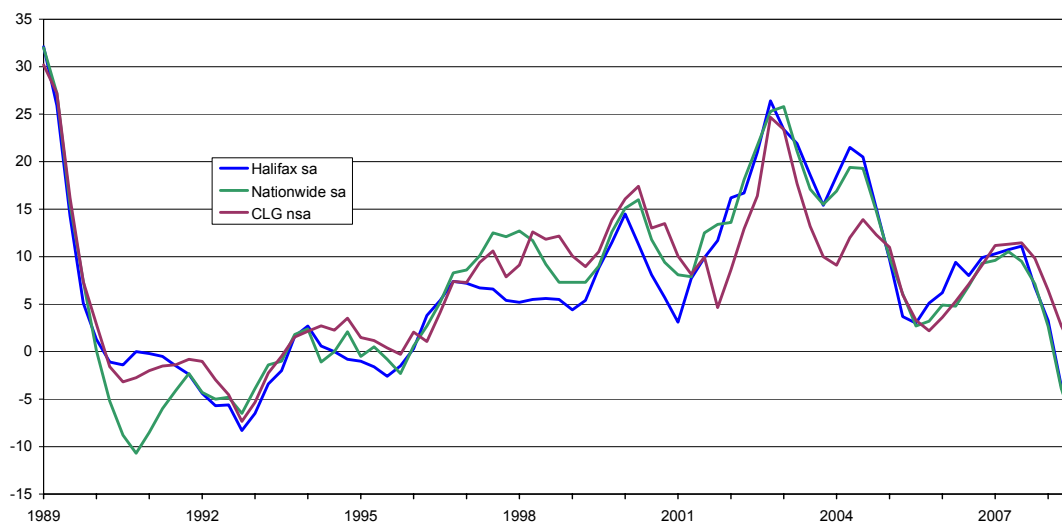
Manufacturing

26. 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 shown in **Figure 9**.

Construction

27. The construction sector is particularly vulnerable to the credit squeeze, particularly commercial construction and private housing which accounted for around 35 per cent 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.

Figure 4
Change in house prices
Annual rate of change (per cent)



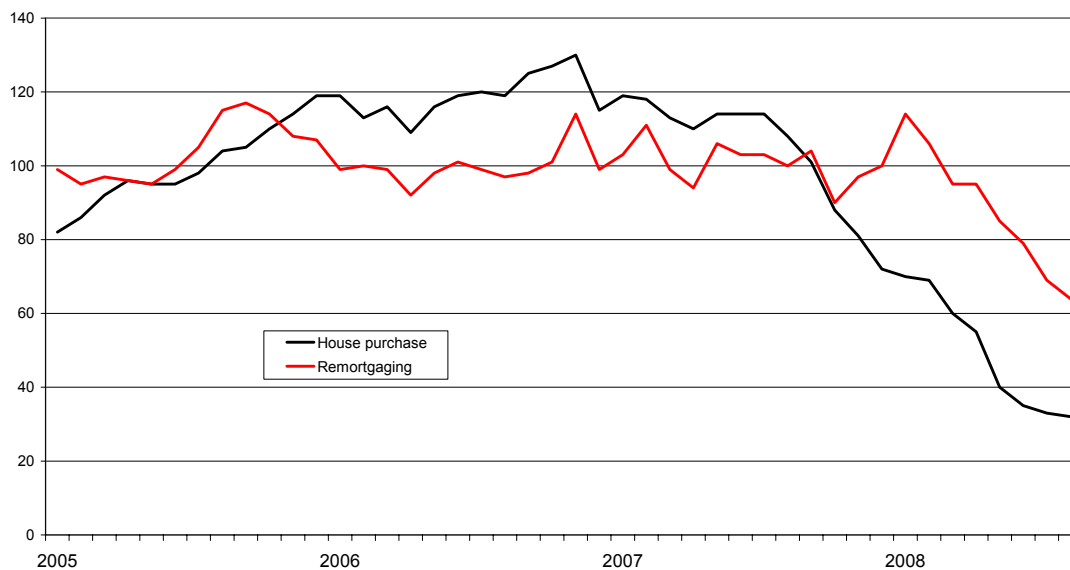
1. Figures for the latest quarter reflect estimates for July only

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, re-mortgaging 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 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 re-mortgaging 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 re-mortgaging, 36 per cent lower than in August 2007 and the lowest since October 2001.

Figure 5
Mortgage approvals
Thousands



The cost of **mortgage finance** has also increased. For example the interest rate for an average 2 year fixed mortgage (with 75 per cent loan to value) was half a percentage point above Bank of England base rate in February 2008 but was 1.6 percentage points above it in June. Since then the margin over base rate has fallen slightly to 1.1 percentage points

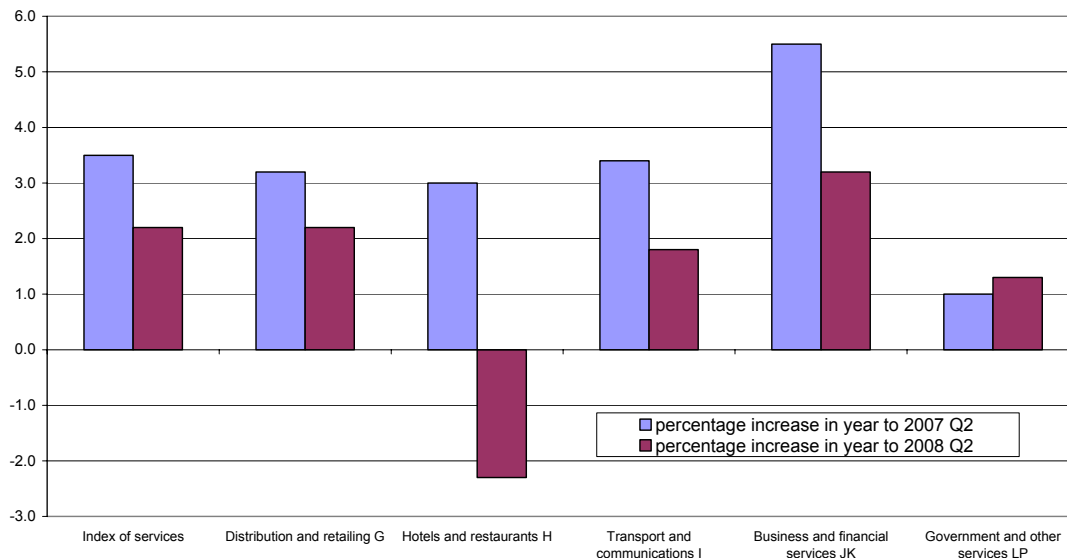
28. Annual growth of construction output has slowed from 3.3 per cent in 2007Q2 to 2.0 per cent in 2008Q2 and there was a small fall in output in the second quarter compared with the first. But within the total the picture is mixed. New private housing construction has declined at a faster rate than 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. It also needs to be borne in mind that nearly half of construction output is in repairs and maintenance, which is less volatile than new work. Repair and maintenance activity increased by 2 per cent in the second quarter of 2008, 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

29. 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 per cent and 2.7 per cent.

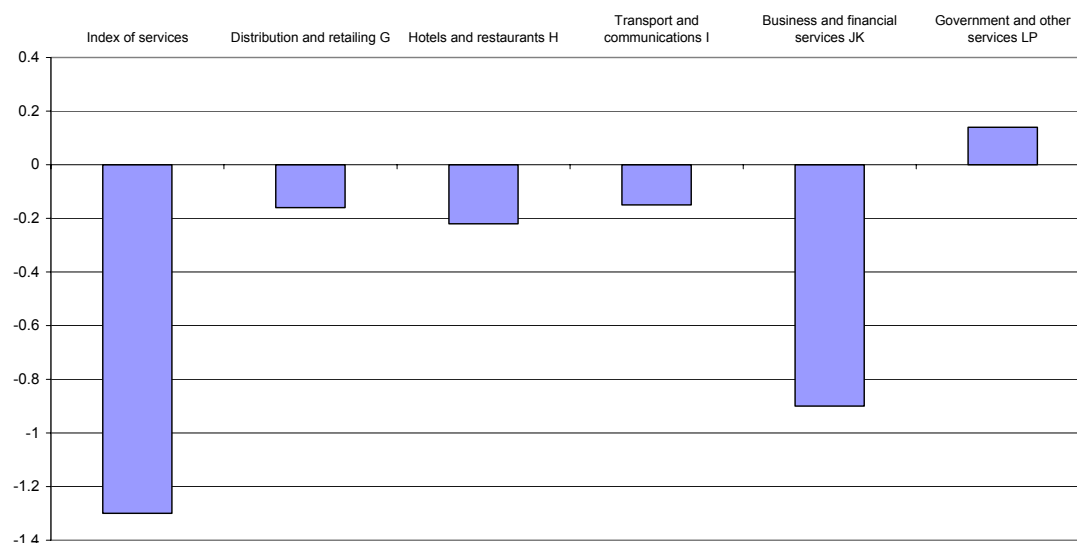
30. **Figure 6** displays the changes in output growth for the main components of the services sector compared with the previous year. Within services the slowdown is fairly broad-based with all industries except government and other services exhibiting a decline in growth rate. The distribution and retailing industry saw growth fall from 3.2 per cent 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 per cent to 1.8 per cent, and finally the financial and business services category recorded a fall in the growth rate from 5.5 per cent to 3.2 per cent.

Figure 6
Output growth in service sector
 Percentage change on year earlier



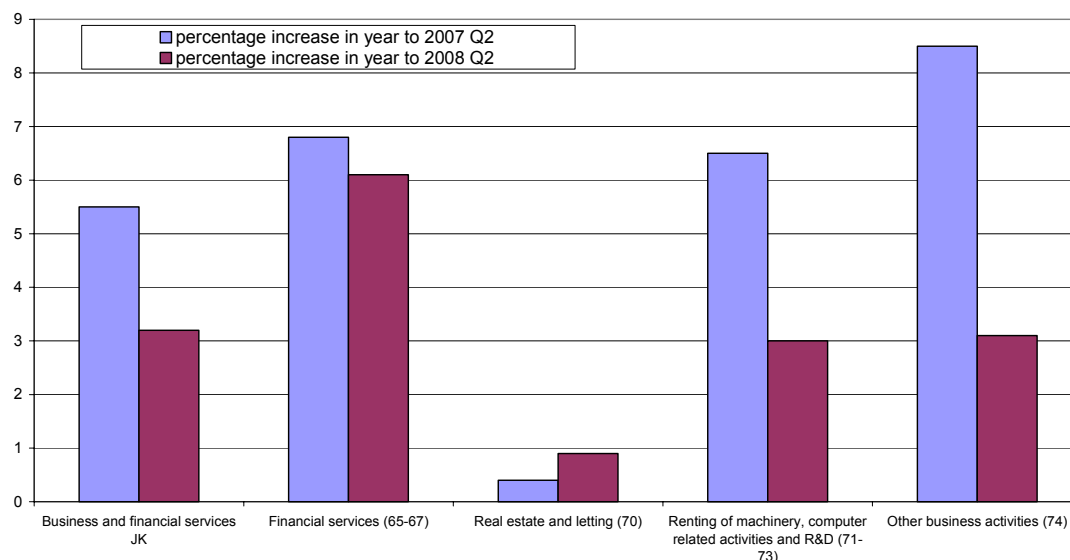
31. The significance of each of these output movements depends on the respective weight of the industry in the overall index. **Figure 7** breaks down the total 1.3 per cent deceleration into its respective contributions. Financial and business services accounts for the major share, contributing 0.9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

Figure 7
Contributions to slowdown in service sector output
 Contributions in percentage points to difference in growth of service sector output in year to 2008 Q2 and in year to 2007 Q2



32. The contributions to the sharp slowdown in financial and business services output can be analysed further as 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.

Figure 8
Output growth in business services and finance service sector
 Percentage change on year earlier

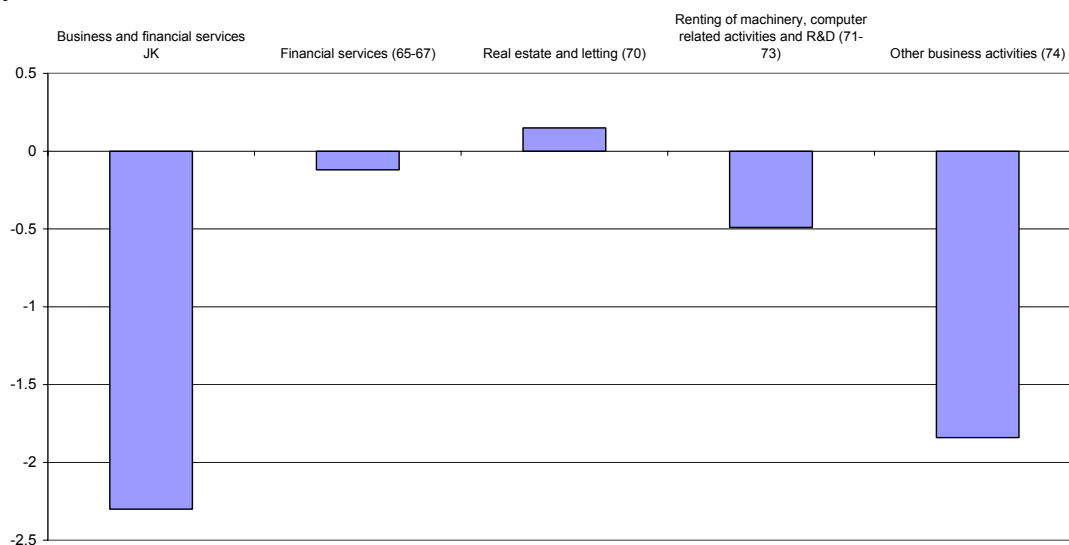


33. This category consists of legal activities, accountancy services, market research, management consultancy, architectural activities and technical consultancy, advertising and other business activities. A clearer view of its contribution to the fall in financial and business services growth is shown 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 likely to be associated with capital projects on the expenditure side.

Figure 9

Contributions to slowdown in business services and finance

Contributions in percentage points to difference in growth of business services and finance in year to 2008 Q2 and in year to 2007 Q2

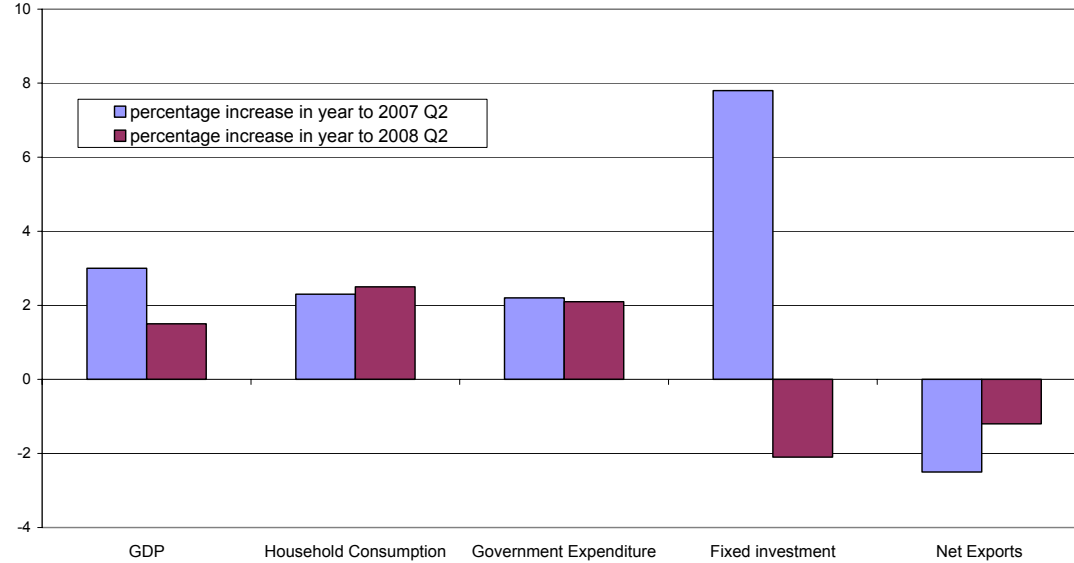


34. The positive contribution made by the real estate and letting industry may seem surprising. Lettings, including imputed rents, make up the majority of this component and this business tends to be quite stable and relatively free of cyclical movements. The annual growth of financial intermediation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

Expenditure components

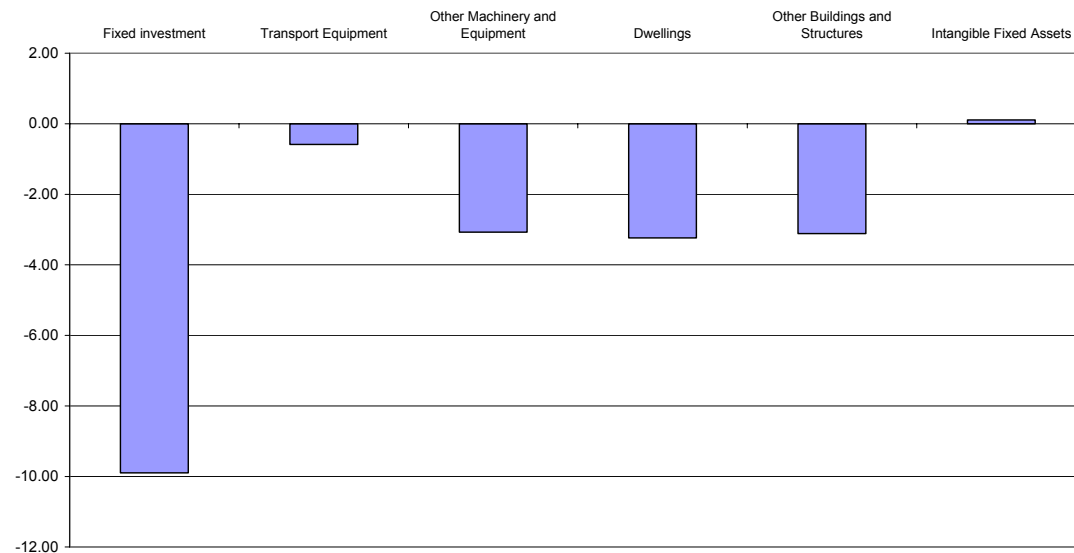
35. It is also possible to analyse the slowdown from the expenditure side of the economy and compare that with the picture on the output side to see whether it looks consistent. It becomes apparent from **Figure 10** that the main contractionary influence from the expenditure side comes from fixed investment. 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.

Figure 10
GDP growth by type of expenditure
 Percentage change on year earlier



36. 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. All of which contribute around 3 percentage points to the overall slowdown. Transport equipment investment has contributed 0.6 percentage points.

Figure 11
Contributions to slowdown in investment
 Contributions in percentage points to difference in growth of investment in year to 2008 Q2 and in year to 2007 Q2



Comparisons with previous slowdowns

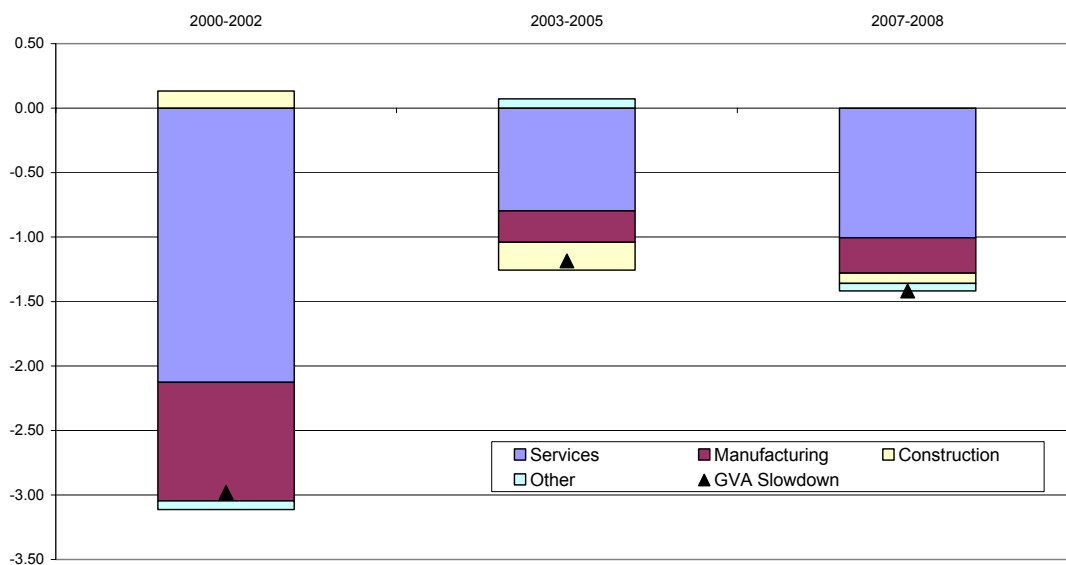
37. This section compares the slowdown in growth over the past year with two earlier slowdowns:

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

38. The 2000-02 slowdown was more pronounced and longer than the 2003-05 downturn and the current downturn to date. Like the current downturn, the 2003-05 episode was associated with a weakening in global economic conditions. In 2000-2002 the world economy was recovering from the aftermath of the East Asian and Russian financial crises at the end of the nineties and was affected first by the collapse of the dot.com bubble, and then by the aftermath of the September 11th attacks in the USA.
39. The 2003-05 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 the 2008 Blue Book.

Figure 12
Contributions to GVA slowdown by sector over slowdown periods
 Contributions in percentage points to difference in GVA growth over slowdown period

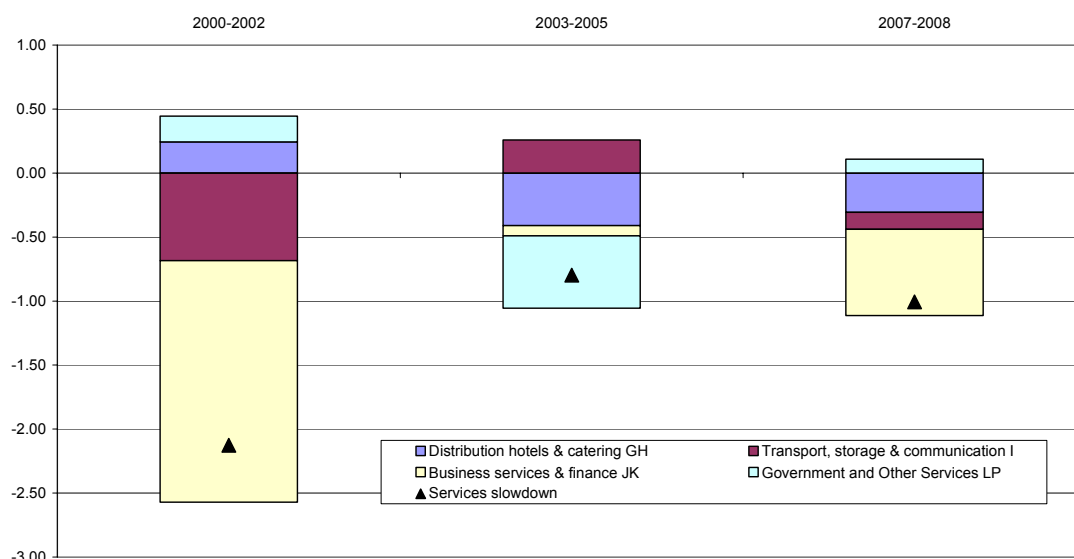


*Other comprises; IoP excluding manufacturing and agriculture forestry and fishing

40. 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 GDP slowdown comes from the service sector. Although it is not easy to discern from **Figure 12**, the current slowdown and the 2000-2002 slowdown were the most service driven, around 71 per cent of the decline in GDP is accounted for within this sector on both occasions (with the 2003-2005 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 per cent and 21 per cent in 2000-2002 and 2003-2005). Construction has had a negative impact in the most recent periods but was an offsetting positive factor in the 2000-2002 slowdown. The 'other' sector has been a

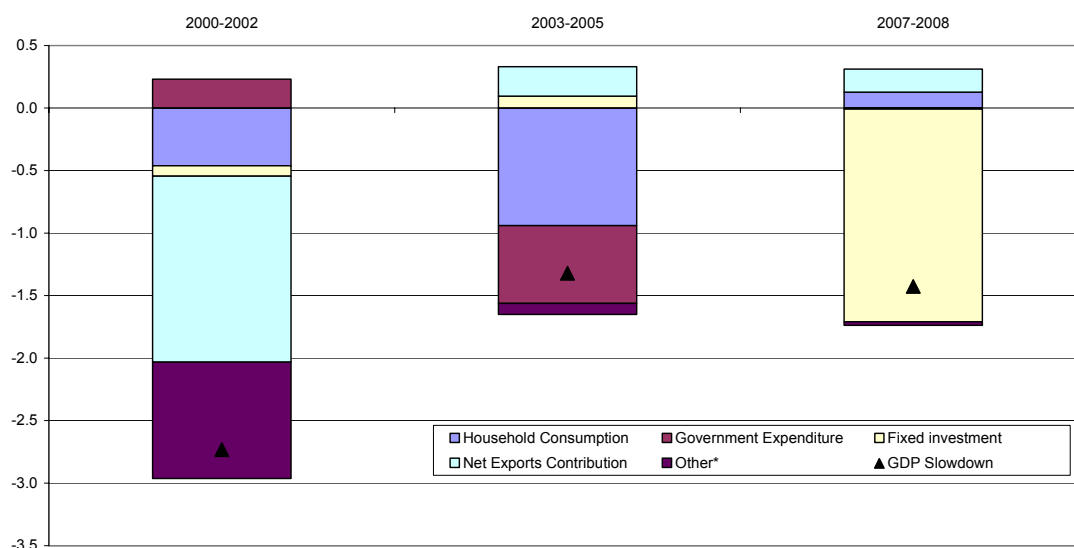
small negative contributor in the most recent slowdown and in 2000-2002 but was a positive factor in the 2003-2005 period.

Figure 13
Contributions to slowdown in service sector output over slowdown periods
 Contributions in percentage points to difference in growth of service sector output over slowdown period



41. Given its dominant influence it is interesting to look at the service sector in more detail as in **Figure 13**. In the 2003-2005 slowdown government and other services was the main contributory factor, followed by distribution, hotels and catering. In the most recent period and in 2000-02, the vast majority of the service sector slowdown came from business services and finance (accounting for 67 per cent and 89 per cent respectively). Distribution, hotels and catering has been the other key driver in the current period, as in 2003-05.

Figure 14
Contributions to slowdown in GDP by type of expenditure over slowdown periods
 Contributions in percentage points to difference in growth by type of expenditure over slowdown period



*Other comprises; Inventories, Consumption Expenditure of NPISH and Acquisitions less disposals of valuables

42. 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 2000-02 was net exports, consistent with the global nature of slowdown;
 - in 2003-05 the main negative influences were household and government expenditure, reflecting the domestic nature of this episode;
 - in the current downturn the main contractionary influence is capital expenditure, arguably associated with tightening credit conditions and corporate fears about future growth.
43. 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 the first quarter of 2008 to -0.1 per cent in the second quarter. Household expenditure on services fell by around 0.5 per cent in the second quarter, 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 alter as the estimates are revised in light of new information.

Labour market

44. 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

45. 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**.

Figure 15
Employment rate
 Per cent of working age population

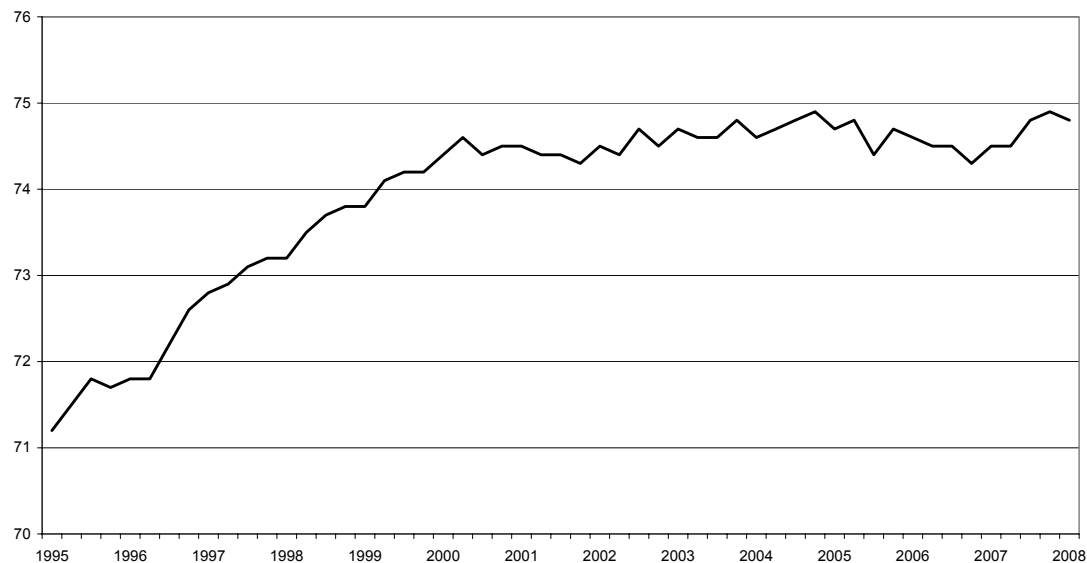
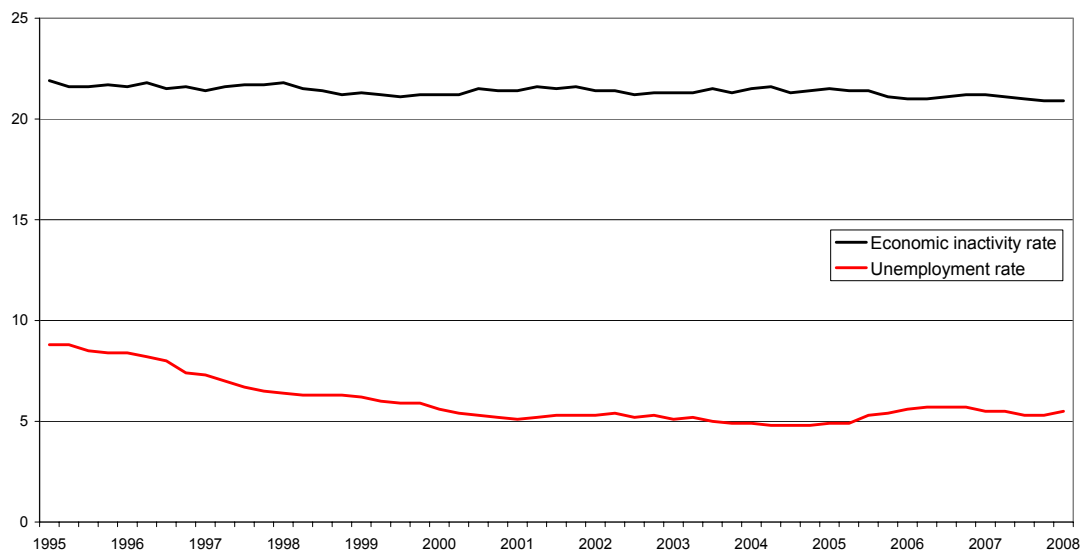


Figure 16
Unemployment and inactivity rates
 Per cent of working age population



Source: Labour Force Survey

Notes:

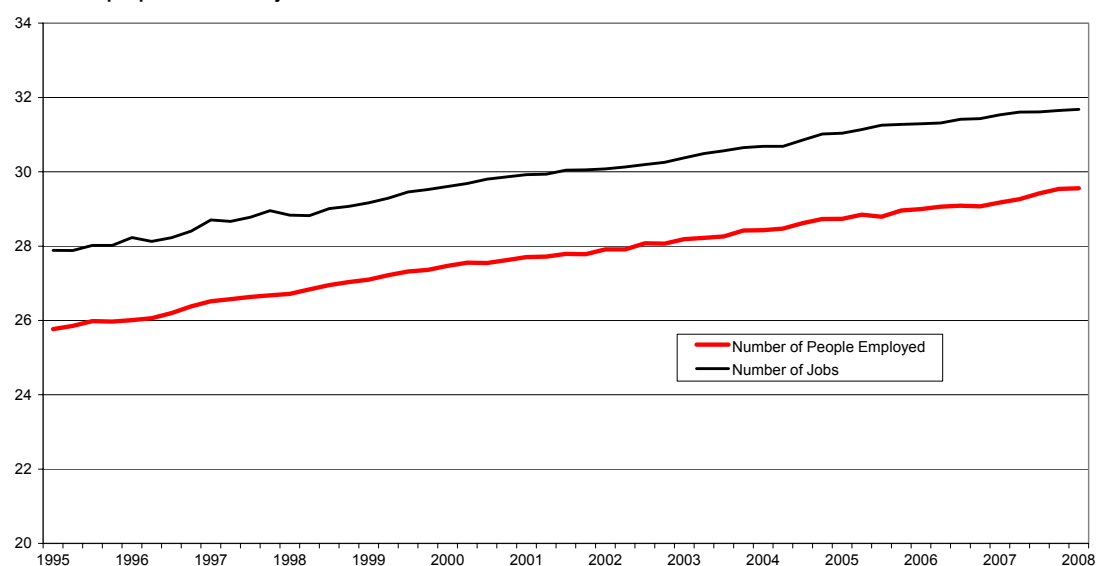
The working age employment, unemployment and inactivity rates will not add to 100 per cent as the unemployment rate uses the economically active working age population as the denominator whereas the employment and inactivity rates use the working age population.

46. 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 one 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 2000-2002

and 2004-2005 is shown by a levelling off in employment and unemployment rates post 2000.

47. 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 (WFJ) has increased from just below 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.

Figure 17
Employment and jobs
Millions of people in work and jobs

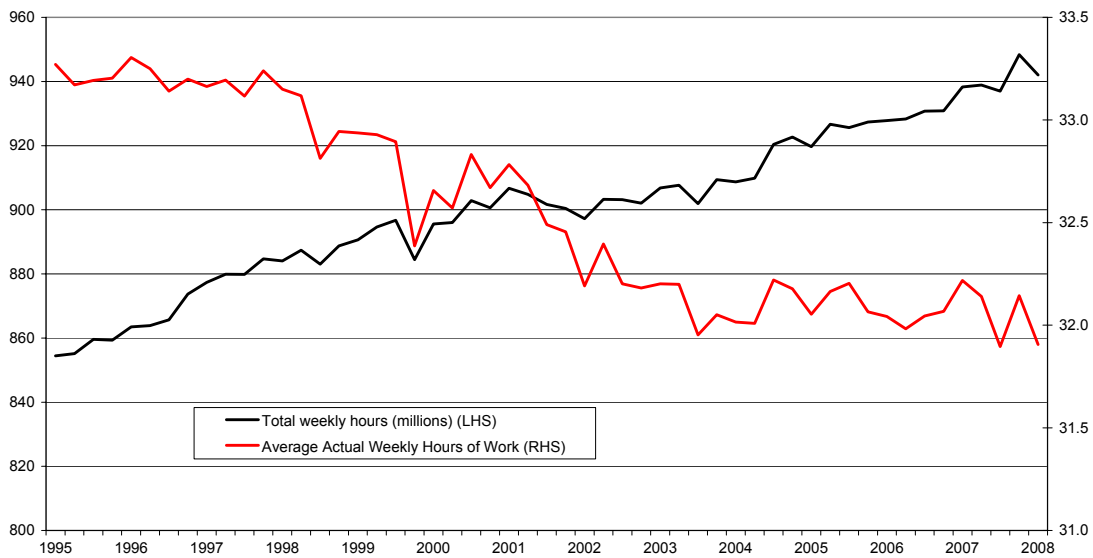


Source: Labour Force Survey and Workforce Jobs Survey

Recent labour market developments

48. 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.
49. 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-90s to remain close to 32 in recent years.

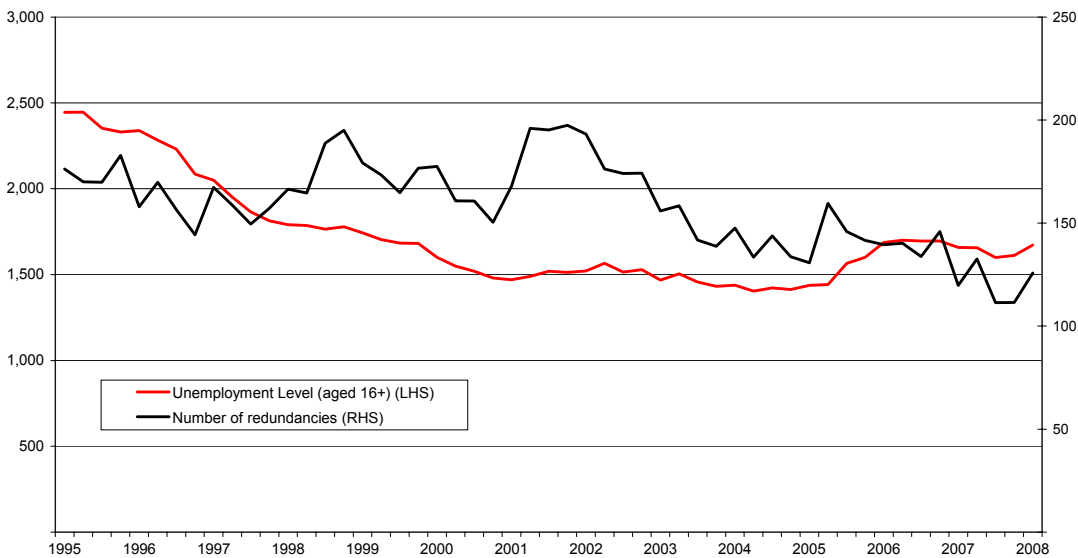
Figure 18
Hours worked
 Total and average hours worked



Source: Monthly Wages & Salaries Survey

50. 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 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.

Figure 19
People out of work
 Thousands of people unemployed and made redundant in previous three months

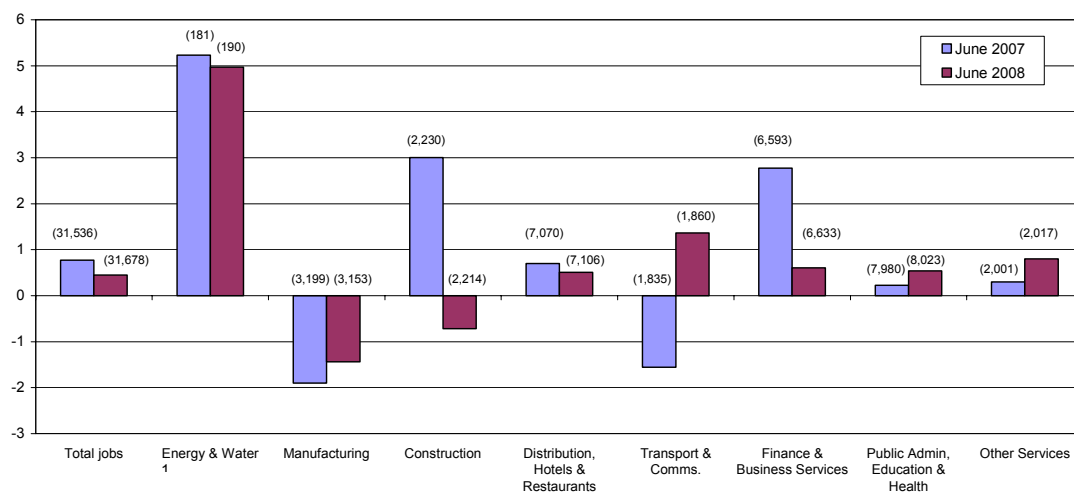


Source: Labour Force Survey

51. 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 constituting 21 per cent of all jobs in 2008. Sectors showing the relatively large growth over the period were: energy and water and transport and communication, but these only account for 1 per cent 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.

Figure 20
Jobs by industrial sector
 Per cent change (thousands of jobs)

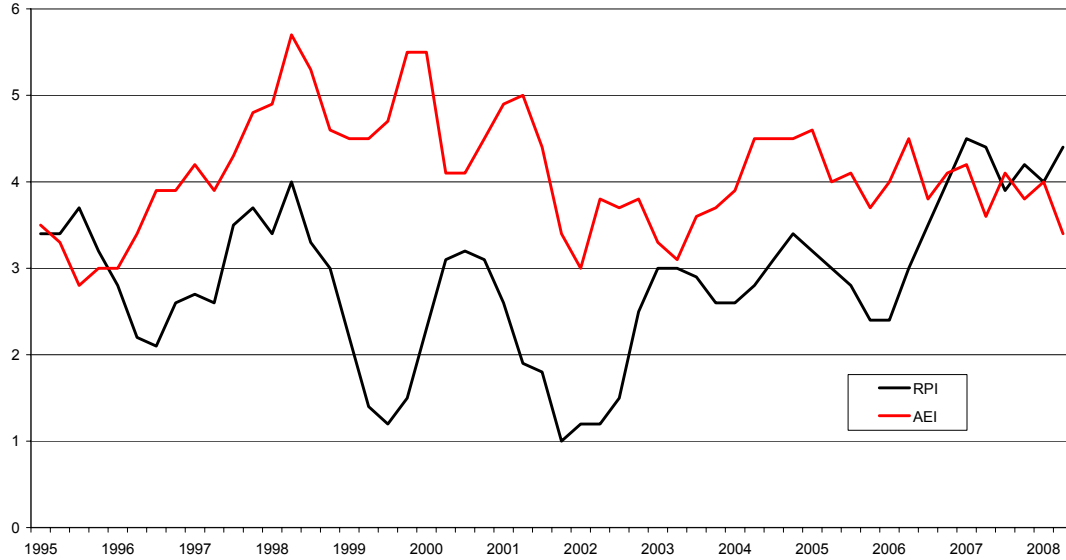


1. Not all sectors are displayed so sum of sectors does not equal Total Jobs

Source: Workforce Jobs Survey

52. 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 Retail Prices Index (RPI). Average earnings increases have been relatively stable, but the rate of inflation has increased sharply as discussed in the next section.

Figure 21
Retail Prices Index (RPI) and Average Earnings Index (AEI)
 Percentage change over 12 months



Source: ONS Retail Prices Index and Average Earnings Index

Inflation

53. 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**.

Figure 22
Prices
 Percentage change over 12 months

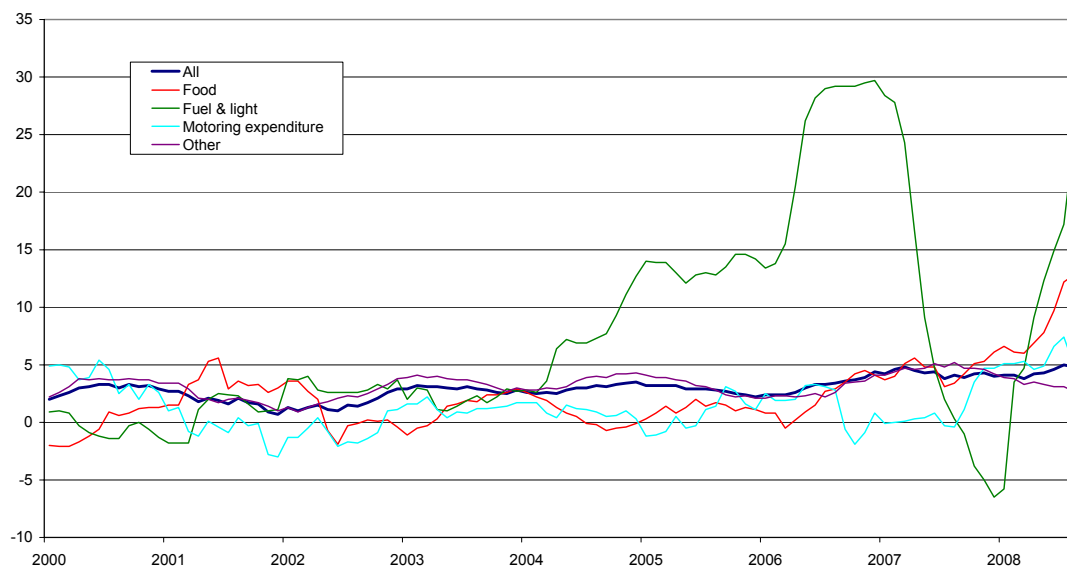


54. As measured by the CPI, the main measure of consumer price inflation for macro-economic purposes and now used for the Government's inflation target⁵, inflation was

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.

55. On the more longstanding 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 per cent 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.
56. Producer price inflation, which measures the change in the prices of goods sold by manufacturers, has risen even more sharply than the consumer price indices 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
RPI: all items, food, fuel and light, and motoring
 Percentage change over 12 months



57. **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 per cent 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 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.
58. 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.

59. 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.

Summary and conclusions

60. 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. We have shown the need for timely, reliable and coherent official statistics. We acknowledge that both official and unofficial statistics have a role in informing economic management, but that official statistics are more comprehensive, representative and consistent.
61. 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.
62. Some lack of coherence in early estimates is inevitable, but looking at recent estimates by way of illustration we find that there is a clear picture of the slowdown in output and that information on expenditure is reasonably consistent with the output pattern. We have also identified 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.
63. Given the complexity of the economy and the high expectations of users, ours is a very difficult job. Our outputs are comprehensive, based on rich data sources and 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 revised over time. The annual Blue Book is a key vehicle for refining our picture of the economy to achieve greater coherence. What we do in the UK stands comparison with leading statistical offices in other countries, although improvement is a continuous goal.

Notes

1. I am 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.
2. This article uses figures published up to 30 September 2008 including Quarterly National Accounts consistent with the 2008 Blue Book 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.
3. Speech at the Lord Mayor's Banquet for Bankers and Merchants of the City of London at the Mansion House, 18 June 2008
4. 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
5. 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 and others (2008) for an explanation of how the RPI is compiled.

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