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In Brief

Changes to Tables

Table 6.6 is now expanded to provide a longer run of data since Table 6.7 is being discontinued (see below).

Table 6.7

From this edition, the previous Table 6.7, "UK banks' loans, advances and acceptances to UK residents" on a Standard Industrial Classification 1980 basis is no longer published. A long run of the same data is published in Table 5.6 of the *Economic Trends Annual Supplement 1999*. Bank lending to UK residents data on a Standard Industrial Classification 1992 basis is available in the new table 6.7 (previously 6.8).

Subsequent tables are therefore re-numbered:

Previous	*New*
6.8	**6.7**
6.9	**6.8**
6.10	**6.9**

Articles

Adele Barklem of ONS reports on the results obtained from the testing of bias in key economic indicators and GDP components. This article sets out the results of the latest revisions analysis work by ONS, updating the articles published in April and August 1996; sets out some current challenges and asks questions about readers use of the results. The data analysed is that published before the move to new international national accounting standards in 1998 i.e. the European System of Accounts, 1995 (ESA 1995), and the IMF Balance of Payments Manual, fifth edition, 1993 which have brought in new terminology and definitions. The article however uses the "old" terms since the analysis here is of variables defined under the old standards *(page 31)*.

Geoff Reed of ONS explains how the preliminary estimate of GDP (output based) is produced and describes the developments in statistics of output which made it practicable. The article discusses challenges resulting from the improvements, outlines the calculation processes and the adjustment environment and practices and explains the relationship to the income and expenditure estimates of Gross Domestic Product (GDP). Finally, the results and outputs are discussed plus an assessment of revisions and estimates *(page 53)*.

Jim O'Donoghue of ONS provides an update on methodological developments in the Harmonised Estimate of Consumer Prices (HICP). First the article outlines the background to the HICP and summarises the new implementing measures including those that came into effect with the January 1999 and January 2000 indices. The significant changes which came into effect with the January 2000 index are described: extension of the coverage of goods and services in the HICP, harmonisation and extension of the geographical population coverage of the weights and changes to the classification system. Lastly, the effect of new regulations on the HICP and the future development of the HICP are summarised *(page 63)*.

Anna Brueton of ONS outlines plans for the 2000 and 2001 *Blue Book* and *Pink Book*. This article updates the previous one published in July 1999. Many planned developments arise from the later stages in the implementation of the European System of Accounts 1995 (ESA95), others from the development of new methodology and data sources. Revisions policy for 2000 and 2001 is discussed also the main issues for the 2000 *Blue Book* and *Pink Book*. Finally, national accounts developments beyond 2001 are summarised *(page 73)*.

Recent economic publications

Annual

Financial Statistics Explanatory Handbook 2000. The Stationery Office, ISBN 0 11 621252 7. Price £39.50.

Share Ownership: A Report on the Ownership of Shares at 31st December 1998. The Stationery Office, ISBN 0 11 621260 8. Price £39.50.

Quarterly

Consumer Trends: 1999 quarter 3. The Stationery Office, ISBN 0 11 621240 3. Price £45.

UK Economic Accounts: 1999 quarter 3. The Stationery Office, ISBN 0 11 621272 1. Price £26.

UK Trade in Goods Analysed in Terms of Industries (MQ10): 1999 quarter 3. The Stationery Office, ISBN 0 11 537993 2. Price £70 p.a.

Monthly

Consumer Price Indices (MM23): December 1999. The Stationery Office, ISBN 0 11 537343 8 . Price £185 p.a.

Financial Statistics: February 2000. The Stationery Office, ISBN 0 11 621185 7. Price £23.50.

Monthly Review of External Trade Statistics (MM24): November 1999. The Stationery Office, ISBN 0 11 537241 5. Price £185 p.a.

All of these publications are available from The Stationery Office, telephone 0870 600 5522 or fax 0870 600 5533, or The Stationery Office bookshops; details on the inside back cover.

ECONOMIC UPDATE – MARCH 2000

By Geoff Tily, Macro-Economic Analysis - Office for National Statistics

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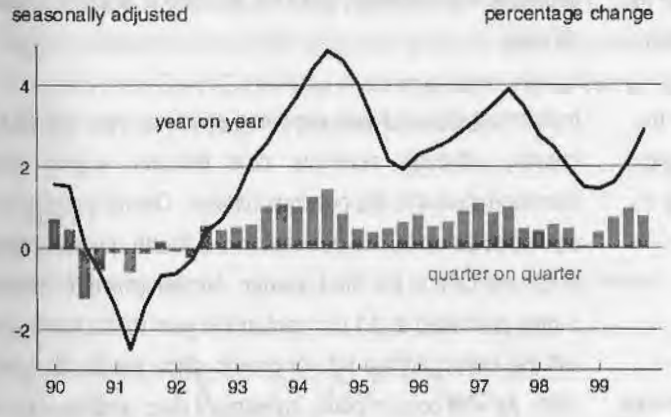
Overview

Data for the fourth quarter shows that the economy continued to grow robustly. In the manufacturing sector growth remains concentrated in the high-tech industries, with other industries weaker. The services sector continued to grow, but at a rate that remains below growth seen in 1997. From the domestic perspective consumer demand is seen to be strong but may have slowed during 1999, with consumer confidence levelling off into the end of the year. Externally, a pick up in global demand has led to very strong increases in exports to both EU and non-EU countries in the third quarter, but a fall back into the fourth quarter. Investment, however, remains subdued and profits remain weak after sharp falls into 1998; corporate borrowing is building up. The latest labour market information shows ongoing increases to employment, but the ILO measure of the unemployment rate may be levelling off. Average earnings growth surged into December, partly reflecting special factors. Overall, retail prices growth remains subdued, but there remains a marked and growing contrast between services and goods.

GDP Activity

GDP data shows the economy grew by 0.8 per cent into the fourth quarter, compared with growth of 1.0 per cent into the third. Annual growth increased sharply to 2.9 per cent, comparing GDP in quarter four with the same quarter a year ago (chart 1).

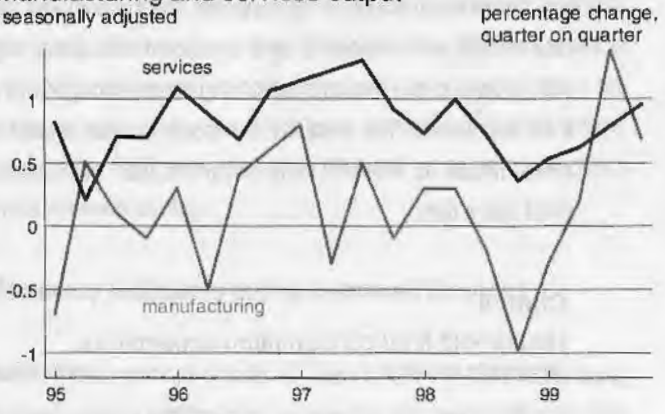
Chart 1
GDP



hotel and catering industries, as well as being partly subdued by a weak performance in computer services.

Manufacturing output growth, having outpaced services activity in the third quarter fell back into the fourth quarter, from 1.4 per cent to 0.7 per cent (chart 2 also).

Chart 2
Manufacturing and services output



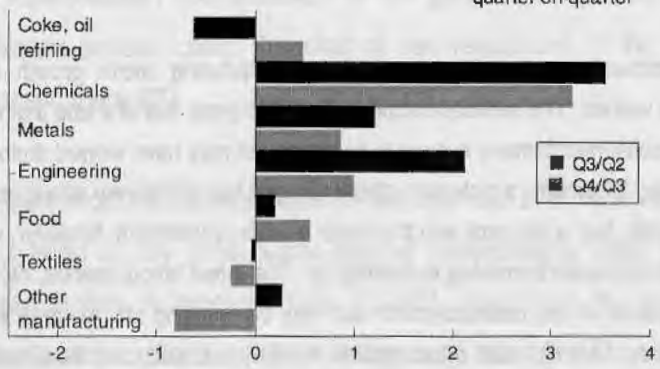
Output breakdown

In quarter four services output increased to 0.9 per cent from 0.8 per cent in the third quarter (chart 2). The main driver of overall growth continues to be the very strong activity in the communications industries. Robust quarterly growth was also seen in the business services and finance sectors, but this was partially offset by poorer performances in the retail, wholesale,

Chart 3 shows that the manufacturing sector continues to be driven by the very strong growth in the chemicals industry and elements of the engineering and allied industries, with other sectors much more subdued. Reflecting the overall fall back of growth in the fourth quarter, these fast growth industries also slowed modestly. It remains possible that the lower technology

industries are having more difficulties with the ongoing strength of sterling.

Chart 3
Manufacturing by industry
seasonally adjusted
percentage change, quarter on quarter



The latest CBI monthly industrial trends survey continues to show ongoing optimism into the new year, with gradually increasing optimism over the last quarters of 1999 and into the first quarter of 2000. CBI note that order books remain below normal, but are negative to a lesser extent than any time since March 1998. It also remains notable that export orders continue to be well below domestic orders.

Domestic demand

Annual growth in household final consumption expenditure has been revised up to a robust growth of 4.5 per cent in the year to the fourth quarter (chart 4). However the path of the quarterly rate shows some evidence of a slowdown throughout the year, with growth in the first and second quarters stronger than in the third and fourth. The data for the fourth quarter is also slightly more difficult to interpret than usual because of movements to retail sales data.

Chart 4
Household final consumption expenditure
seasonally adjusted
percentage change

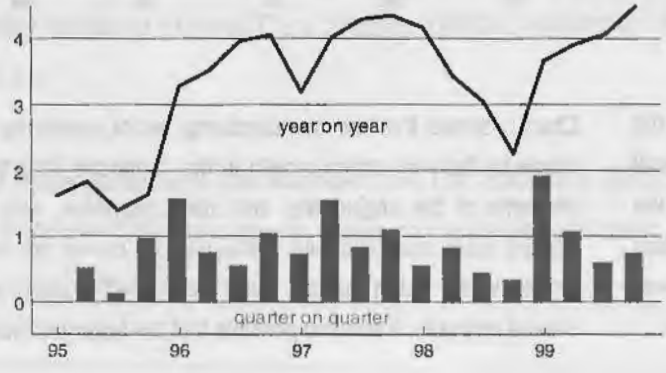
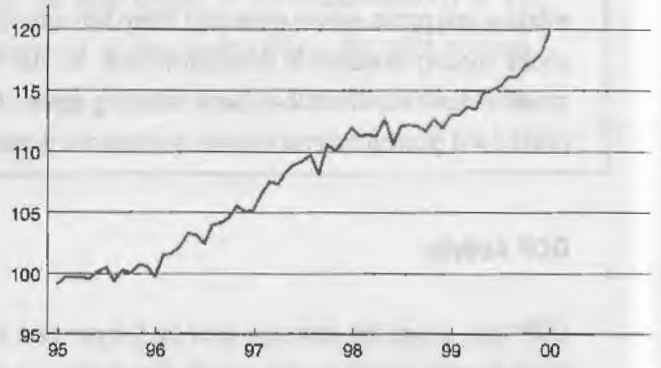


Chart 5 shows how the index numbers for retail sales surged into December and January, leading to three monthly growth rate at 1.8 per cent. Little should be read into this however, due to the potential impact of purchases over the millennium period leading to exceptional shopping pattern. Furthermore the strength of retail sales appears to have been driven partly by very sharp discounting in the goods sectors, leading to volumes of sales continuing to outpace values of sales.

Chart 5
Retail sales
seasonally adjusted
index 1995 = 100



External indices of consumer confidence may also be indicative of a modest slowdown in consumption. Both MORI and GfK show a levelling out of confidence since the very strong recovery at the start of 1999. The very latest data shows rather extreme contradictory movements, with MORI recording a sharp decrease into February, but GfK showing a sharp increase into January.

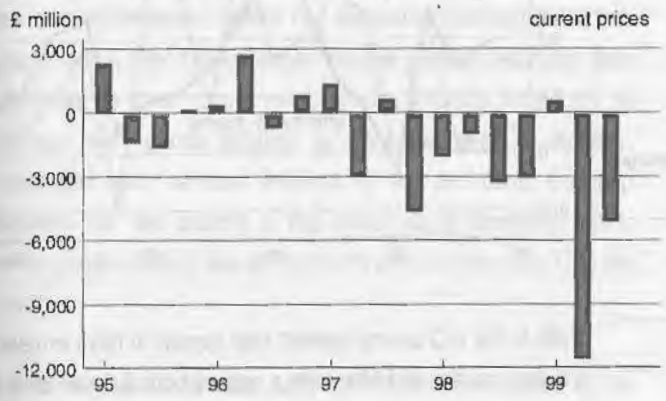
Investment demand has remained subdued over the last three quarter, although revisions now indicate slightly stronger formation than with the previous dataset. Overall investment was estimated as up by 1.1 per cent in the fourth quarter, compared to 0.7 per cent in the third quarter. Annual growth in investment is now estimated at 3.1 per cent in the year to the fourth quarter, still the lowest annual rate of growth since the fourth quarter of 1995. As with consumption, investment data continues to remain difficult to interpret as firms may be cutting back in advance of the millennium, having carried out their major programmes at an earlier date, and postponing new programs until year 2000 was underway.

Nevertheless the level of investment remains such that the corporate sector as a whole is borrowing substantially in 1999; this is partly due to the slowdown in corporate profits. While recent profits data have shown a modest improvement into

1999, the overall level remains below that seen at the end of 1997. More specifically, comparing 1997 with 1999, investment grew by £25.0 billion, whereas profits grew by only £1.3 billion. This has been the main driver of the increased net borrowing of the non-financial sector corporate borrowing shown on chart 6.

Chart 6

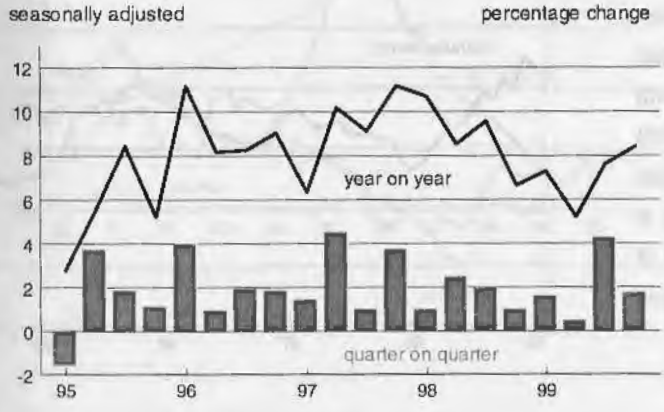
Non financial corporations net borrowing



On UK demand for overseas goods, chart 7 shows growth in imports fell back sharply in the fourth quarter following the exceptional strength in the third. Nevertheless, this remains indicative of strong growth compared to the start of the year, when the two quarters are taken together. The main growth in imports continues to come from non-EU regions. Looking at figures excluding oil and erratics, between the first and second six months of 1999 imports from EU economies rose by 1.2 per cent, whereas imports from non-EU economies rose by 12.9 per cent. A substantial part of this difference is due to large volumes of imports from South East Asian economies, who appear to be selling goods very cheaply on international markets.

Chart 7

Imports

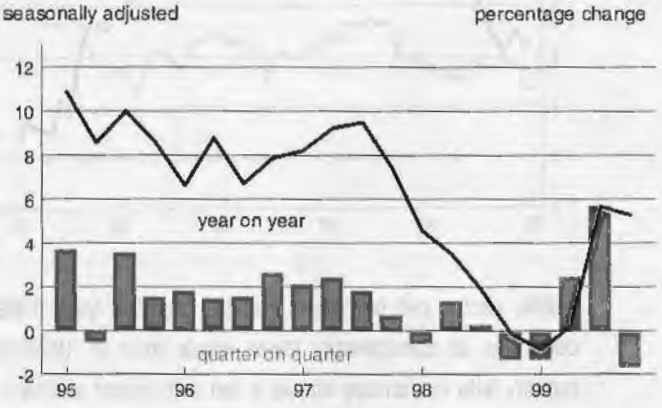


Overseas demand and balance of payments

Following the surge in quarter three, export growth calmed into the fourth quarter, but again may best be seen taking the two quarters together (chart 8). The annual rate of export growth was over 5.0 per cent in the fourth quarter. One possible explanation for this sudden surge in export volumes is millennium factors, with companies responding to demands for precautionary stocks of raw materials in the run up to the date change. In the case of exports volumes excluding oil and erratics were strong to both the EU and non-EU countries over the second half of 1999. The growth in the second six months of the year was 6.2 per cent to EU economies and 8.9 per cent to non-EU economies.

Chart 8

Exports



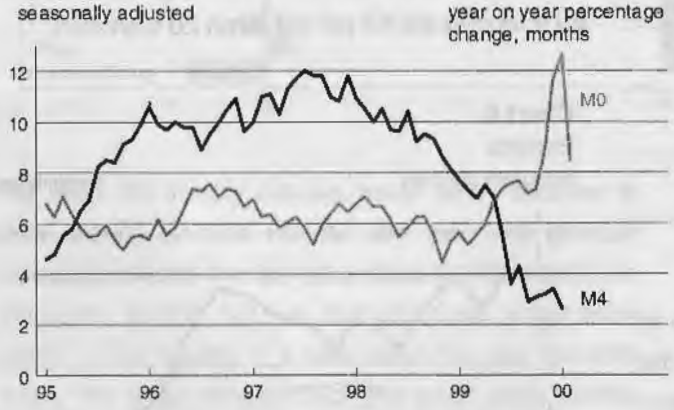
The relative strength of both exports and imports are such that the balance of trade deficit widened to £1.8 billion in December from £1.6 billion in November. The deficit for 1999 as a whole was £15.4 billion, reflecting a substantial deterioration from the previous year where the total trade balance was £8.4 billion. Overall the ONS now estimates that the monthly trade deficit trend is now widening.

Monetary indicators and government finances

Broad money annual growth fell back to 2.6 per cent in January, following only a modest pick up over the last few months of 1999 (chart 9). Annual growth thus continues to remain very subdued compared to previous years, and remains strongly influenced by the substantial decline in the rate of growth of other financial corporations' holdings of M4 assets. Growth in narrow money, on the other hand, accelerated very sharply into December and

January, and then slowed into February. Provisional estimates show M0 annual growth of 8.5 per cent in February, substantially down from the annual growth in January of 12.7 per cent and 11.8 per cent in December. The slowdown in growth has been driven by a return to more normal levels following the massive increase in notes and coin reflecting a substantial injection of liquidity into the economy over the Christmas and new year period to cover for any unprecedented demand as a result of the millennium.

Chart 9
Money supply

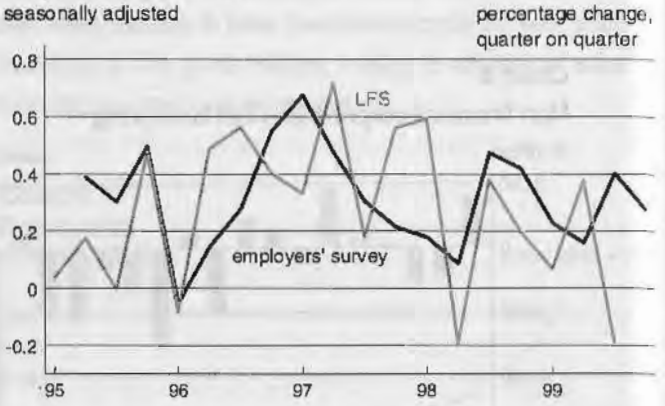


Public sector net borrowing for the financial year 1999-2000 continues at considerably lower levels than in 1998-99. The outturn data to January shows a net repayment of £14.5 billion compared with a repayment of £6.1 billion in the same period of 1998-99. This reduction in borrowing, despite higher levels of expenditure, is largely being achieved by increased Inland Revenue tax receipts.

Labour Market

The latest labour market data continues to show improvements to employment, but levelling off of ILO unemployment. Between October–December and July-September 1999 employment grew by 75,000 according to the LFS. This increase reflected growth of 0.3 per cent, slightly down on the growth of 0.4 per cent between the previous three monthly periods. Chart 10 shows that there remains some volatility in the quarterly growth rate of this series, with the latest rate below rates seen at the start of 1998. Trend data however continues to show modest increases to the rate of growth. The same chart shows the contrast with the quarterly employer survey data, where growth was negative into the fourth quarter, but remains very volatile.

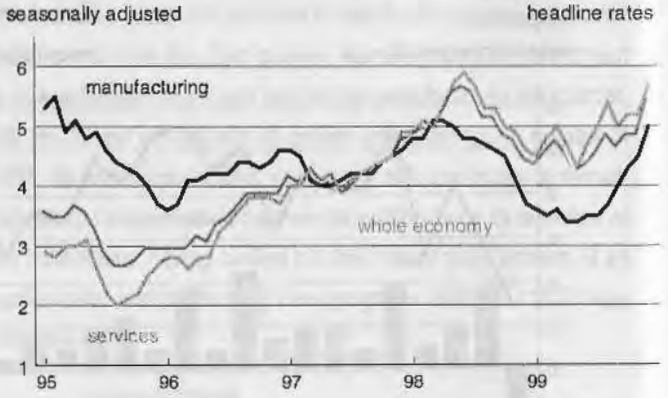
Chart 10
Employment growth



Falls to the ILO unemployment rate appear to have arrested into the last quarter of 1999, with a rate of both 5.9 per cent in the third and fourth quarters. On the other hand the claimant count data still appears to be on a modest downwards trend, although rates of improvement below rates seen in 1997 and 1998.

The headline rate of average earnings grew strongly into December, up to a headline rate of 5.5 per cent, following 4.9 per cent in November. As chart 11 shows, the growth was driven by both the manufacturing and service sectors. It should be noted that about half of this growth was driven by bonuses paid in the financial services industries, within the manufacturing sector some of the growth continues to be attributed to overtime payments.

Chart 11
Average earnings

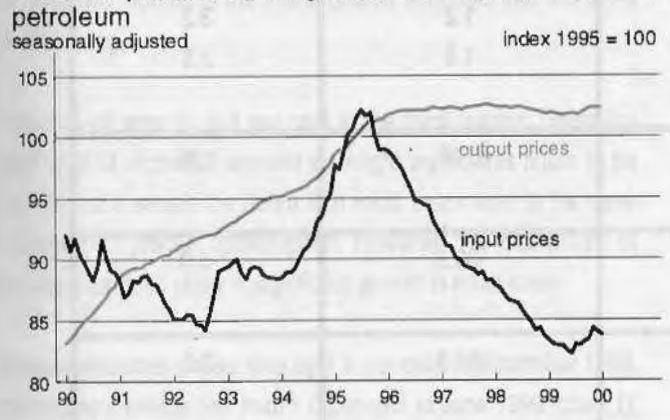


Prices

The annual rate of the RPI was 2.0 per cent in January 2000, compared with 1.8 per cent in December; however increases continue to be driven by recent increases to base rates, feeding through to mortgage interest payments. The government's target measure however continues to remain stable. Growth of RPIX in the twelve months to January was 2.1 per cent compared to 2.2 per cent in December; RPIX has fluctuated between these two figures since May 1999. Despite this flat profile, underlying data continues to show goods and services inflation continuing to diverge, with goods inflation at zero per cent in January, contrasted with services inflation at 4.2 per cent. The gap between the two sectors is the widest since November 1991, when goods inflation was 6.3 per cent and services was 10.6 per cent.

Inflationary concerns have also been directed at prices at the factory gate, where oil prices are driving input inflation to 10.4 per cent and output prices to 2.5 per cent. A better picture excluding the dramatic effects of oil can be seen looking at index numbers excluding food, beverages, tobacco and petroleum. Chart 12 shows how price increases to these series resumed in about the middle of 1999. Nevertheless recent increases remain fairly minor in the light of previous decreases, particularly for input prices, and the most recent movements have not continued the trend.

Chart 12
Producer prices excluding food, beverages, tobacco and petroleum



Forecasts for the UK Economy

A comparison of independent forecasts, February 2000

The tables below are extracted from HM Treasury's "FORECASTS FOR THE UK ECONOMY" and summarise the average and range of independent forecasts for 2000 and 2001, updated monthly.

	Independent Forecasts for 2000		
	Average	Lowest	Highest
GDP growth (per cent)	3.1	2.0	4.0
Inflation rate (Q4: per cent)			
- RPI	3.0	1.8	4.3
- RPI excl MIPs	2.1	1.7	3.0
Unemployment (Q4, mn)	1.09	0.98	1.35
Current Account (£ bn)	-14.3	-28.9	-7.6
PSNB *(2000-01, £ bn)	-6.4	-15.2	0.0

	Independent Forecasts for 2001		
	Average	Lowest	Highest
GDP growth (per cent)	2.6	1.6	4.0
Inflation rate (Q4: per cent)			
- RPI	2.3	1.2	3.2
- RPI excl MIPs	2.4	1.5	2.8
Unemployment (Q4, mn)	1.07	0.78	1.35
Current Account (£ bn)	-15.0	-38.9	-5.0
PSNB* (2001-02, £ bn)	-4.9	-17.0	2.0

NOTE: "FORECASTS FOR THE UK ECONOMY" gives more detailed forecasts, covering 27 variables and is published monthly by HM Treasury, available on annual subscription, price £75. Subscription enquiries should be addressed to Miss C T Coast-Smith, Public Enquiry Unit, HM Treasury, Room 110/2, Parliament Street, London SW1P 3AG (Tel: 0171-270 4558). It is also available at the Treasury's internet site: http://www.hm-treasury.gov.uk.

* PSNB: Public Sector Net Borrowing.

International Economic Indicators – March 2000

by Craig Richardson, Macro-Economic Assessment - Office for National Statistics

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Overview

US industrial production grew strongly, but failed to alleviate the growth in the demand for imports. The Japanese situation remains mixed, with fluctuating demand, rising output and a troubled labour market. The EU and Japan both increased their exports, reflecting the growing level of world trade. There is general evidence of rising consumer prices in the EU countries.

EU15

The OECD data shows the EU economies growing at an increasing pace in the third quarter of 1999. The main drivers of this were strengthening exports and continuing growth in private consumption.

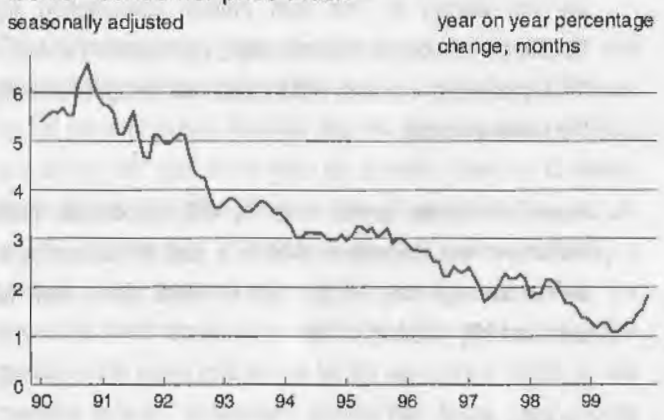
GDP data shows the EU economies expanded by 0.9 per cent in quarter three, compared to a quarterly growth of 0.6 per cent in the second quarter. Private consumption, government spending and investment all increased in quarter three. Exports grew strongly, but this was partially offset by the rise in imports.

Industrial production in the EU15 countries rose by 1.7 per cent in the third quarter of 1999. This continues the improvements since the first quarter of 1999, when production declined by 0.1 per cent. These increases in industrial output are in line with rising domestic demand and rising exports. Monthly figures for the first two months of the fourth quarter suggests that this trend is continuing.

Retail sales grew by 0.4 per cent in the third quarter. Given the high level of domestic demand we might expect this figure to be higher, but it should be noted that retail sales tend to be more volatile than private consumption. However, the first month of quarter four does show a significant growth in retail sales.

Annual consumer prices rose by 1.8 per cent in December 1999, continuing a steady rise from 1.0 per cent in June 1999 (chart 1). Part of this rise is likely to be explained by the rise in petrol prices, which comes through producer prices and the direct effect on the consumer prices through petrol filling stations. Annual producer prices rose by 2.6 per cent in December, up from 2.1 per cent in November. Oil and energy remains the driving force behind the rise in this series, which was declining by 2.1 per cent in February 1999.

Chart 1
EU15 - consumer price index



Earnings pressure remains subdued, with growth of 2.7 per cent in the third quarter. It is not clear whether or not the higher rate of consumer price inflation will feed through to higher wages. Pay settlements, for example, tend to be conducted earlier in the year.

Annual growth in employment in the EU15 countries slowed modestly in the third quarter, growing by 1.4 per cent, following three out of four quarters at 1.6 per cent. The unemployment rate continue to fall, 8.9 per cent in the fourth quarter from 9.2 per cent in the third. This is the lowest level since the second quarter of 1992.

Germany

German economic growth recovered substantially, from just 0.1 per cent in the second quarter to 0.7 per cent in quarter three. There was positive growth in all contributing areas, except for stockbuilding, which fell by 0.3 per cent in the third quarter. The rise in private consumption in quarter three more than offset the fall in the second quarter. Export growth continued strongly, 0.8 per cent on the previous quarter, whilst import growth declined,

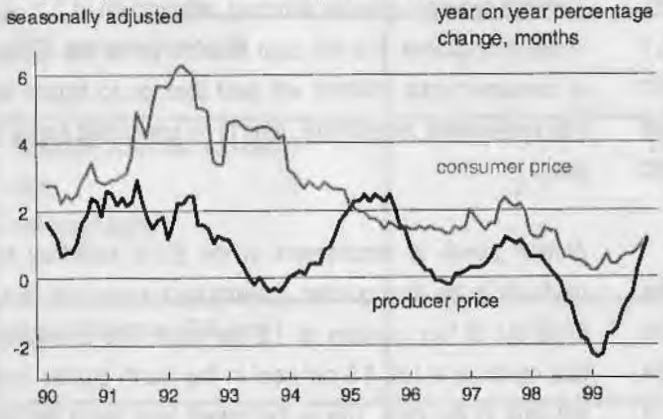
from 0.8 per cent in the second quarter to 0.5 per cent in the third.

German industrial production figures have been revised this month. The figures now show production slumped into the fourth quarter, from quarterly growth of 1.7 per cent in quarter three to a decline of 0.5 per cent in the final quarter of the year. However, manufacturing orders continue to show significant quarterly and annual growth.

Quarter four data for retail sales is not yet available, but so far monthly data includes a strong rise and a fall. German retail sales figures tend to fluctuate widely from month to month, and are not always in line with private consumption figures. Consumer confidence shows a slight dip towards the end of the third quarter, in line with retail sales, but a slight recovery into the fourth quarter.

Annual consumer prices rose by 0.2 percentage points in November and December 1999 to a rate of 1.2 per cent. The annual average was 0.6 per cent for 1999, down from 1.0 per cent for 1998 (chart 2).

Chart 2
Germany - consumer and producer price indices



Annual producer prices rose by 1.1 per cent in December, up from 0.7 per cent in November. The index itself has risen continually since a trough in May 1999.

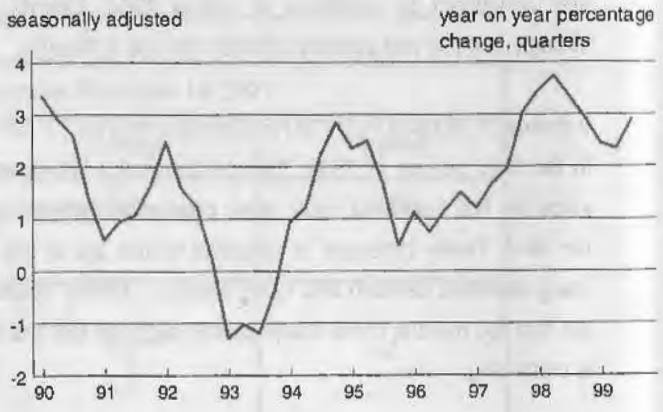
Annual earnings grew by 2.7 per cent in the third quarter. Although this remains low the rate has increased significantly from 1.3 per cent in the first quarter of 1998.

The unemployment rate was virtually flat at 9.1 per cent throughout 1999, although it slipped to 9.0 per cent in December. This is a modest improvement over the previous two years, but very high compared to the start of the 1990s.

France

The French economy continued its run of dynamic growth that started in 1997, growing by 1.0 per cent into the third quarter. This growth is particularly impressive when the significant negative contribution of destocking in the quarter is considered. Both domestic and external demand made strong contributions to the GDP growth (chart 3). The slight slowdown in households' consumer spending in the earlier part of the year has given way to firmer growth, driven primarily by cars and pharmaceuticals. Foreign demand has risen given the sharp upturn in world trade and the gains in competitiveness caused by the euro's depreciation.

Chart 3
France - GDP



Industrial production grew by 2.1 per cent in the third quarter. Monthly figures suggest that strong growth may continue with the first two months of quarter four showing significant growth. These increases in production are consistent with a rise in capital utilisation in the third quarter, which continued into quarter four.

Retail sales continued to grow, increasing by 1.5 per cent in the fourth quarter, up from 0.9 per cent in the previous quarter and from a fall of 0.5 per cent in the second. French consumer confidence has risen steadily since May 1999.

Annual consumer price inflation increased by 0.4 percentage points in December 1999, to 1.3 per cent. This is consistent with rising oil prices. Annual producer prices rose by 0.3 percentage points in December to stand at 1.1 per cent. This compares to a fall in producer prices of 3.1 per cent in the year to March 1999.

Employment growth in the year to the third quarter was 1.7 per cent, driven by the labour intensive GDP growth. Job creation has remained strong in the services and construction sectors, and with the recovery of the industry employment in that sector grew in the third quarter of 1999. There was a fall of 0.5 percentage points in the unemployment rate between the third and fourth quarter, to 10.5 per cent. While this is the lowest rate since the third quarter of 1992, the rate still remains high compared to other euro-zone economies.

Italy

Italian economic growth from the start of 1998 has consistently under-performed that of the EU15. However, it recorded growth of 1.0 per cent into the third quarter of 1999. Previously weak domestic demand and a poor export performance has harmed growth. Private consumption growth remains low, although investment is improving, but the main growth came from the growth in exports coupled with a fall in imports. This could be a result of the depreciating euro.

There are more encouraging signs in industrial production, which was seen to grow by 1.9 per cent in quarter three. The latest monthly figures including month on month growth of 1.1 per cent in November, suggest this may continue. Echoing this, business sentiment continued to improve.

No new sales data has been available throughout 1999. However, consumer confidence in December 1999 reached its highest level since the start of the year, which would be consistent with positive growth.

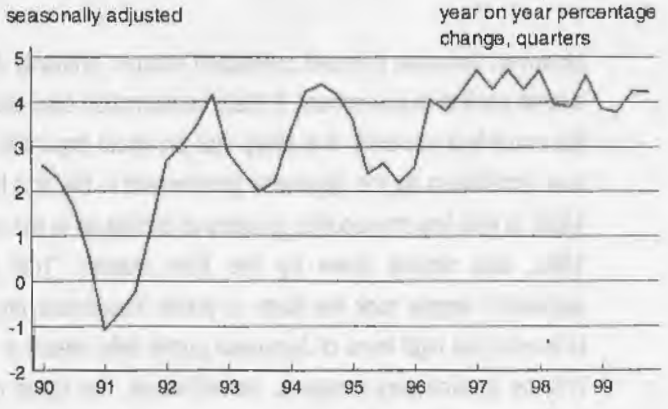
Annual consumer price inflation continued to creep up into January 2000, rising by 0.1 percentage points to 2.2 per cent. This is the highest rate of growth since March 1997 and is likely to be affected by oil prices. The annual rate of producer price inflation increased sharply for the third consecutive month to reach 2.8 per cent in December 1999, this contrasts sharply with a fall of 0.6 per cent in July 1999. The trends are roughly consistent with the EU as a whole. Of concern though is the fact that while Italian inflation has tracked the EU15, their economic growth has not.

Recent earnings data show the annual growth rate falling, from 2.3 per cent in September 1999 to 1.8 per cent in November. Quarter on quarter employment growth fell by 0.1 per cent in the fourth quarter of 1999, after two previous consecutive quarters of strong growth. However, while annual growth of employment remains strong at 1.4 per cent for the fourth quarter of 1999, the rate of unemployment continues to remain above 11 per cent, as it has done since the third quarter of 1994.

USA

The US economy has grown strongly since the start of 1992, and the latest figures confirm that this trend is continuing. GDP grew by 1.4 per cent in both the third and the fourth quarters of 1999, and by 4.0 per cent in the year as a whole (chart 4). Domestic demand has provided most of the driving force, especially private consumption. A slowdown in consumption following a gradual rise of interest rates by the federal reserve does not appear to have occurred; it contributed 0.9 per cent to GDP growth in the fourth quarter, up by 0.1 percentage points on the previous quarter. Investment growth has fallen back slightly through the year, possibly reflecting a rise in longer term interest rates. The trade deficit continued to widen in the fourth quarter as imports grew faster than exports, taking some inflationary pressure out of the domestic demand. With interest rates rising there is a risk that a stronger dollar could make the deficit substantially worse, but a weaker dollar would be inflationary.

Chart 4
USA - GDP



Industrial production continued to grow, by 1.6 per cent in the fourth quarter. The annual rate in December was 5.0 per cent.

Retail sales grew by 1.7 per cent in the third quarter of 1999, and grew strongly in the first two months of the fourth quarter. These figures are in line with the private consumption figures and consumer confidence. Commercial bank loans continued to grow in December, up 5.8 per cent on the previous December, leading many analysts to worry about the high level of consumer credit.

Annual consumer prices remained at 2.6 per cent for the fourth successive month in December 1999. However, annual producer prices reversed some of last month's sharp rise, falling by 0.2 percentage points to 2.9 per cent. While this picture is perhaps more benign than earlier, the earnings figures are more likely to be worrying the Federal Reserve. Annual growth of earnings was 4.5 per cent in the year January 2000, compared to just 1.9 per cent in the year to January 1999. Such an increase may stimulate domestic demand further.

The rising earnings coincide with a tightening labour market. Annual employment growth was 1.5 per cent in January 2000, and the unemployment rate continued to fall, down to 4.0 per cent in January 2000. This is the lowest monthly rate seen since January 1970.

Japan

The Japanese economy contracted by 1.0 per cent in the third quarter of 1999, following strong expansion in the previous two quarters, of 1.0 per cent in quarter two and 1.5 per cent in quarter one. Trade made a positive contribution to GDP growth in the third quarter; export growth outweighed that of imports as Japan shared in benefiting from the strength of global demand in quarter three.

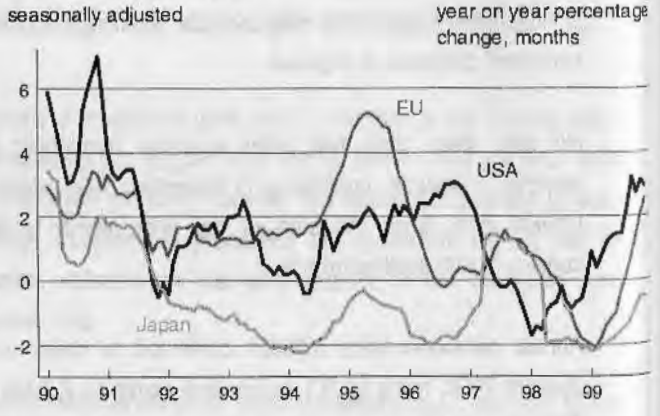
However, domestic demand contracted sharply, primarily due to a large decline in investment. Private consumption also declined but much less severely. It is likely that the fiscal expansion that was undertaken by the Japanese government in the first half of 1999, to end five consecutive quarters of decline up to the end of 1998, was wound down by the third quarter. This fiscal expansion largely took the form of public investment projects. However, the high level of Japanese public debt meant it could only be a temporary measure. Nevertheless, the value of the Japanese stockmarket has increased substantially throughout 1999 and most analysts are predicting positive GDP growth in 2000.

Industrial production grew by 0.7 per cent in the fourth quarter. On an annual basis production growth has been strong, growing by 5.0 per cent in the year to December 1999 and 4.2 per cent in the year to the fourth quarter of 1999. Capital utilisation in the manufacturing industries in November 1999 was at its highest level since February 1998. Business sentiment in November 1999 for both the current and future business situations improved as well.

Retail sales continued to decline, by 0.3 per cent in the fourth quarter, following a fall of 0.8 per cent in the previous quarter. This offsets positive growth in the first half of the year, and the resulting annual growth rate for 1999 was negative, at a decline of 2.1 per cent. For the first three quarters of 1999 sales appear to track private consumption quite well. In the fourth quarter the slower decline is also in line with a rise in consumer confidence in Japan in the fourth quarter.

Annual consumer prices continued to deflate in December 1999, by 1.1 per cent. However, when food is removed from the index it fell by just 0.2 per cent over the year to December 1999. Annual producer prices fell by 0.5 per cent in December, the same as in November. Disaggregated, the index shows that a rise in oil and fuel prices was countered by a fall in agricultural and textile products. Unlike in the EU and US, price indices in Japan have not risen substantially as a result of the recent rise in oil prices (chart 5).

Chart 5
Producer price indices
seasonally adjusted



As the Japanese National Statistics Agency's "Monthly Economic Report" for December 1999 states, "The employment situation remains severe". Earnings continued to fall, by 0.3 per cent in the year quarter four, following a fall of 0.4 per cent into

quarter three. This follows a decline in the level of bonus payments made at the end of this year. Employment also fell, by 0.6 per cent in the year to December 1999.

Unemployment rose in December 1999, up one percentage point to 4.7 per cent, only 0.1 percentage points off the highest post-war rate that the series has reached. This is despite an increase in overtime hours worked and in job offers.

Notes

The series presented here are taken from the OECD's Main Economic Indicators and are shown for each of the G7 (except the UK) economies and for the European Union (EU15) countries in aggregate. The definitions and methodologies used conform to SNA 68 and SNA 93.

Comparisons of indicators over the same period should be treated with caution, as the length and timing of the economic cycles varies across countries.

Data for France and Germany has been updated to SNA93 basis. All other tables are on the SNA68 basis. The two bases are not directly comparable meaning that cross-country comparisons with countries on different bases are less valid. All the European data is likely to be put on the SNA93 basis in OECD data very soon. However, the current expectation is that data for the USA will be only partially compatible with SNA93 near the end of this year and Japan will not be available on SNA93 basis until near the end of 2000.

All data is *seasonally adjusted* except for the following:
Consumer Price Indices
Producer Price Indices
Earnings (excluding Japan)
Employment

1 European Union 15

	Contribution to change in GDP													
	GDP	PFC	GFC	GFCF	ChgStk[1]	Exports	less Imports	IoP	Sales	CPI	PPI	Earnings	Empl	Unempl
Percentage change on a year earlier														
	ILGB	HUDS	HUDT	HUDU	HUDV	HUDW	HUDX	ILGV	ILHP	HYAB	ILAI	ILAR	ILIJ	GADR
1991	1.4	1.4	0.5	0.2	–0.2	0.4	0.9	–0.3	1.8	5.2	2.2	6.7	0.4	8.4
1992	1.1	0.9	0.5	–0.1	–0.2	0.9	0.9	–1.3	0.2	4.4	1.3	5.6	–1.7	9.1
1993	–0.4	–0.3	0.2	–1.2	–0.4	0.4	–0.8	–3.5	–1.2	3.6	1.4	4.3	–2.0	10.7
1994	2.8	1.0	0.2	0.5	0.7	2.4	2.0	4.9	–0.5	3.1	2.1	4.0	–0.3	11.1
1995	2.4	1.1	0.1	0.6	0.2	2.3	2.0	3.5	–0.3	3.1	4.5	3.4	0.6	10.7
1996	1.6	1.1	0.4	0.4	–0.5	1.4	1.2	0.5	0.3	2.5	0.6	3.7	0.5	10.8
1997	2.5	1.2	0.1	0.6	0.3	2.9	2.6	4.0	2.8	2.0	0.9	3.2	0.8	10.6
1998	2.6	1.7	0.3	1.1	0.4	1.8	2.6	3.5	3.2	1.7	–0.3	2.5	1.4	9.9
1999	..	..	..	..	..	..	..	..	..	1.3	–0.2	..	..	9.2
1997 Q1	1.8	0.9	0.1	0.6	–0.2	1.9	1.5	1.9	1.0	2.2	0.3	2.9	0.6	10.7
Q2	2.5	1.2	0.1	0.6	0.4	3.0	2.8	3.7	3.0	1.8	0.6	2.9	0.7	10.7
Q3	2.7	1.1	0.1	0.5	0.4	3.5	2.9	4.7	3.0	2.1	1.4	2.9	0.8	10.6
Q4	3.1	1.5	–	0.9	0.7	3.2	3.2	5.5	4.0	2.2	1.3	3.8	1.0	10.4
1998 Q1	3.4	1.7	0.3	1.4	0.6	3.1	3.6	5.5	4.2	1.8	0.8	2.9	1.4	10.2
Q2	2.7	1.7	0.3	0.8	0.6	2.2	2.8	4.3	2.2	2.1	0.3	2.8	1.3	10.0
Q3	2.5	1.8	0.2	1.2	0.3	1.4	2.4	3.1	3.3	1.7	–0.7	2.8	1.6	9.9
Q4	1.9	1.7	0.3	1.0	0.1	0.5	1.7	1.3	3.2	1.3	–1.8	1.8	1.6	9.7
1999 Q1	1.8	1.7	0.3	0.9	–	0.2	1.3	0.2	2.5	1.1	–2.0	2.8	1.5	9.5
Q2	1.8	1.5	0.3	1.1	–0.2	0.7	1.5	0.3	3.1	1.1	–1.2	2.8	1.6	9.3
Q3	2.3	1.5	0.3	0.9	–0.2	1.6	2.0	1.7	2.8	1.1	0.2	2.7	1.4	9.2
Q4	..	..	..	..	..	..	..	..	..	1.6	2.1	..	..	8.9
1999 Jan	..	..	..	..	..	..	..	1.0	1.9	1.2	–2.0	..	..	9.5
Feb	..	..	..	..	..	..	..	–0.3	1.9	1.1	–2.1	..	..	9.5
Mar	..	..	..	..	..	..	..	–	3.7	1.2	–1.8	..	..	9.4
Apr	..	..	..	..	..	..	..	–0.1	2.9	1.2	–1.4	..	..	9.3
May	..	..	..	..	..	..	..	0.2	1.9	1.0	–1.2	..	..	9.3
Jun	..	..	..	..	..	..	..	0.7	4.7	1.0	–1.0	..	..	9.2
Jul	..	..	..	..	..	..	..	0.8	2.8	1.1	–0.3	..	..	9.2
Aug	..	..	..	..	..	..	..	2.2	2.8	1.2	0.2	..	..	9.2
Sep	..	..	..	..	..	..	..	2.0	2.8	1.2	0.8	..	..	9.1
Oct	..	..	..	..	..	..	..	1.9	3.7	1.4	1.4	..	..	9.0
Nov	..	..	..	..	..	..	..	3.1	..	1.5	2.1	..	..	9.0
Dec	..	..	..	..	..	..	..	..	..	1.8	2.6	..	..	8.8
2000 Jan	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Percentage change on previous quarter														
	ILGL	HUDY	HUDZ	HUEA	HUEB	HUEC	HUED	ILHF	ILHZ				ILIT	
1997 Q1	0.3	0.3	–0.1	–	0.1	0.5	0.5	1.1	2.0				–0.9	
Q2	1.2	0.5	0.1	0.5	0.2	1.1	1.1	1.7	1.7				1.0	
Q3	0.7	0.2	0.1	0.1	0.1	1.0	0.7	1.5	–0.4				0.7	
Q4	0.8	0.5	–	0.4	0.3	0.6	1.0	1.1	0.7				0.2	
1998 Q1	0.6	0.5	0.1	0.5	–	0.4	0.8	1.0	2.2				–0.5	
Q2	0.5	0.5	0.1	–0.1	0.2	0.2	0.4	0.6	–0.3				0.9	
Q3	0.5	0.4	0.1	0.5	–0.3	0.2	0.3	0.4	0.7				1.0	
Q4	0.2	0.3	–	0.2	0.2	–0.2	0.2	–0.6	0.6				0.2	
1999 Q1	0.5	0.5	0.2	0.3	–0.1	–	0.5	–0.1	1.6				–0.6	
Q2	0.6	0.2	–	0.1	–	0.7	0.5	0.6	0.3				1.0	
Q3	0.9	0.4	0.1	0.3	–0.2	1.1	0.8	1.7	0.4				0.8	
Q4	..	..	..	..	..	..	..	..	..				..	
Percentage change on previous month														
								ILKF	ILKP					
1999 Jan								0.7	0.9					
Feb								–0.6	–					
Mar								0.7	2.8					
Apr								–	–2.7					
May								0.2	0.9					
Jun								0.6	1.8					
Jul								1.0	–0.9					
Aug								0.5	–					
Sep								–0.3	–0.9					
Oct								0.2	1.8					
Nov								0.6	..					
Dec								..	..					
2000 Jan								..	..					

GDP = Gross Domestic Product at constant market prices
PFC = Private Final Consumption at constant market prices
GFC = Government Final Consumption at constant market prices
GFCF = Gross Fixed Capital Formation at constant market prices
ChgStk = Change in Stocks at constant market prices
Exports = Exports of goods and services

Sales = Retail Sales Volume
CPI = Consumer Prices, measurement not uniform among countries
PPI = Producer Prices (manufacturing)
Earnings = Average Wage Earnings (manufacturing), definitions of coverage and treatment vary among countries
Empl = Total Employment not seasonally adjusted

2 Germany

	GDP	Contribution to change in GDP: PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PPI	Earnings	Empl[1]	Unempl
Percentage change on a year earlier	ILFY	HUBW	HUBX	HUBY	HUBZ	HUCA	HUCB	ILGS	ILHM	HVLL	ILAF	ILAO	ILIG	GABD
1991	..	..	..	..	..	..	..	3.2	5.6	4.1	2.1	6.1	2.0	4.2
1992	1.8	1.3	1.0	0.8	–0.7	–0.4	0.1	–2.5	–2.1	5.0	1.7	5.4	–1.4	4.5
1993	–1.1	0.2	–	–1.1	–0.1	–1.3	–1.2	–7.5	–4.3	4.5	0.1	5.1	–1.1	7.9
1994	2.4	0.6	0.5	0.9	0.3	1.7	1.6	3.5	0.7	2.7	0.7	3.7	–0.4	8.4
1995	1.8	1.3	0.3	–0.1	0.3	1.4	1.3	1.0	1.3	1.7	2.1	4.0	–0.1	8.2
1996	0.8	0.4	0.4	–0.2	–0.3	1.3	0.8	0.7	–0.2	1.4	0.2	3.5	–0.4	8.9
1997	1.5	0.5	–0.2	0.1	0.4	2.8	2.0	3.8	–0.5	1.9	0.7	1.5	–0.4	9.9
1998	1.9	1.2	0.1	0.2	0.7	1.8	2.1	4.2	1.3	1.0	–0.4	1.8	0.4	9.4
1999	..	..	..	..	..	..	..	0.6	..	0.6	–1.0	..	..	9.1
1997 Q1	1.7	0.6	0.1	0.9	–0.4	2.1	1.5	2.8	–1.3	1.8	0.3	1.6	–0.6	9.7
Q2	1.6	0.8	–0.1	–0.3	0.4	2.8	2.0	3.4	0.9	1.5	0.7	1.5	–0.5	9.9
Q3	1.5	0.1	–0.3	–0.1	0.8	3.5	2.5	3.7	–1.8	2.3	1.1	1.4	–0.4	10.1
Q4	1.4	0.4	–0.5	–	0.8	2.8	2.1	4.8	0.1	2.1	1.0	1.6	–0.1	10.1
1998 Q1	3.0	1.1	0.2	0.8	0.3	3.1	2.5	6.3	3.2	1.2	0.6	1.3	0.1	9.8
Q2	1.8	0.7	0.1	–0.2	0.9	2.7	2.6	4.8	–2.6	1.4	0.2	1.8	0.4	9.5
Q3	1.8	1.6	–	0.2	0.7	1.3	1.9	4.4	2.3	0.7	–0.6	2.1	0.7	9.3
Q4	1.2	1.4	–	–	1.1	0.2	1.4	1.6	2.4	0.4	–1.7	2.2	0.7	9.2
1999 Q1	0.8	1.2	0.1	0.2	0.2	–0.3	0.8	–0.7	0.3	0.3	–2.4	2.5	..	9.1
Q2	0.8	1.0	–0.1	0.6	0.2	0.2	1.1	0.1	2.4	0.5	–1.7	2.4	..	9.1
Q3	1.3	1.0	0.2	0.3	–0.1	1.3	1.5	1.2	0.1	0.7	–0.7	2.7	..	9.2
Q4	..	..	..	..	..	..	..	2.1	..	1.0	0.6	..	..	9.1
1999 Jan	..	..	..	..	..	..	..	0.7	1.0	0.2	–2.3	..	..	9.1
Feb	..	..	..	..	..	..	..	–1.0	–0.5	0.2	–2.4	..	..	9.1
Mar	..	..	..	..	..	..	..	–1.9	0.4	0.4	–2.3	..	..	9.1
Apr	..	..	..	..	..	..	..	–0.3	1.8	0.7	–1.7	..	..	9.1
May	..	..	..	..	..	..	..	–0.3	0.1	0.4	–1.7	..	..	9.1
Jun	..	..	..	..	..	..	..	0.9	5.4	0.4	–1.5	..	..	9.1
Jul	..	..	..	..	..	..	..	–0.6	–0.1	0.6	–1.0	..	..	9.1
Aug	..	..	..	..	..	..	..	1.7	1.5	0.7	–0.7	..	..	9.2
Sep	..	..	..	..	..	..	..	2.5	–1.3	0.7	–0.5	..	..	9.2
Oct	..	..	..	..	..	..	..	1.5	3.5	0.8	0.2	..	..	9.1
Nov	..	..	..	..	..	..	..	2.6	–1.6	1.0	0.7	..	..	9.1
Dec	..	..	..	..	..	..	..	2.5	..	1.2	1.1	..	..	9.0
2000 Jan	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Percentage change on previous quarter	ILGI	HUCC	HUCD	HUCE	HUCF	HUCG	HUCH	ILHC	ILHW				ILIQ	
1997 Q1	–0.5	0.1	–0.3	–0.5	0.4	0.5	0.5	1.0	–0.5				–1.9	
Q2	1.2	0.3	–	0.3	0.1	0.8	0.3	1.4	3.1				0.9	
Q3	0.3	–0.4	–	0.1	0.2	1.1	0.7	1.1	–2.9				0.6	
Q4	0.4	0.4	–0.2	0.1	0.2	0.5	0.5	1.3	0.4				0.3	
1998 Q1	1.0	0.7	0.4	0.3	–0.2	0.6	0.8	2.4	2.6				–1.7	
Q2	–	–	–0.1	–0.6	0.7	0.5	0.4	–	–2.7				1.2	
Q3	0.3	0.4	–0.1	0.5	–	–0.3	0.1	0.6	2.0				0.9	
Q4	–0.2	0.3	–0.2	–0.2	0.6	–0.7	–	–1.4	0.5				0.3	
1999 Q1	0.6	0.5	0.6	0.6	–1.1	0.2	0.2	–	0.5				..	
Q2	0.1	–0.2	–0.3	–0.2	0.7	0.9	0.8	0.8	–0.6				..	
Q3	0.7	0.4	0.1	0.2	–0.3	0.8	0.5	1.7	–0.3				..	
Q4	..	..	..	..	..	..	..	–0.5	..				..	

Percentage change on previous month	ILKC	ILKM
1999 Jan	1.0	–0.6
Feb	–1.3	–0.3
Mar	0.2	5.2
Apr	0.8	–5.7
May	0.3	1.5
Jun	0.4	3.0
Jul	0.8	–2.6
Aug	1.3	1.7
Sep	–0.9	–3.7
Oct	–0.3	4.6
Nov	–0.1	–2.1
Dec	0.3	..
2000 Jan	..	..

GDP = Gross Domestic Product at constant market prices
PFC = Private Final Consumption at constant market prices
GFC = Government Final Consumption at constant market prices
GFCF = Gross Fixed Capital Formation at constant market prices
ChgStk = Change in Stocks at constant market prices
Exports = Exports of goods and services
Imports = Imports of goods and services
Sales = Retail Sales volume
CPI = Consumer Prices measurement not uniform among countries
PPI = Producer Prices (manufacturing)
Earnings = Average Earnings (manufacturing), definitions of coverage and treatment vary among countries
Empl = Total Employment not seasonally adjusted

3 France

	Contribution to change in GDP													
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PPI[1]	Earnings	Empl[2]	Unempl
Percentage change on a year earlier														
	ILFZ	HUBK	HUBL	HUBM	HUBN	HUBO	HUBP	ILGT	ILHN	HXAA	ILAG		ILAP	ILIH	GABC
1991	1.1	0.4	0.6	–0.3	–0.1	1.0	0.5	–1.2	–0.2	3.2	–1.2		4.7	0.1	9.5
1992	1.4	0.5	0.8	–0.3	–0.2	1.0	0.3	–1.2	0.3	2.3	–1.1		4.0	–0.6	10.4
1993	–1.0	–0.2	1.0	–1.3	–1.2	–	–0.7	–3.8	0.2	2.2	–2.2		3.0	–1.3	11.7
1994	1.8	0.4	0.1	0.3	1.0	1.6	1.6	3.9	–0.1	1.7	1.2		2.0	0.1	12.3
1995	1.8	0.8	–	0.4	0.5	1.7	1.6	2.0	–	1.7	5.2		2.4	0.9	11.7
1996	1.1	0.8	0.5	–	–0.6	0.7	0.3	0.2	–0.3	2.0	–2.6		2.6	0.2	12.4
1997	2.0	0.1	0.4	0.1	0.3	2.4	1.3	3.9	1.0	1.2	–0.5		2.6	0.5	12.3
1998	3.4	2.0	0.3	1.1	0.4	1.7	2.1	4.4	2.6	0.8	–0.9		2.2	1.6	11.7
1999	..	..	..	..	..	..	..	..	2.5	0.5	–1.5		..	..	11.0
1997 Q1	1.2	–0.5	0.4	–0.2	0.5	1.3	0.3	0.5	–1.3	1.5	–2.3		2.8	0.1	12.4
Q2	1.7	–0.1	0.4	–	–0.1	2.4	0.9	3.7	0.7	0.9	–0.9		2.7	0.3	12.4
Q3	2.0	–0.3	0.4	0.1	0.8	2.8	1.9	5.0	1.8	1.3	0.3		2.8	0.7	12.4
Q4	3.1	1.3	0.4	0.5	–	3.2	2.3	6.3	2.8	1.2	0.7		2.5	1.0	12.2
1998 Q1	3.5	1.7	0.2	1.0	0.6	2.9	2.8	7.2	2.2	0.9	0.6		2.4	1.4	11.9
Q2	3.7	2.3	0.3	1.1	0.6	2.1	2.7	5.4	3.1	1.1	–0.3		2.0	1.6	11.7
Q3	3.3	2.2	0.2	1.2	0.1	1.5	1.8	3.2	2.3	0.7	–1.3		2.1	1.8	11.7
Q4	2.9	1.7	0.3	1.2	0.5	0.5	1.2	2.2	2.8	0.4	–2.4		2.0	1.7	11.6
1999 Q1	2.4	1.4	0.4	1.3	–0.4	–	0.3	0.9	3.4	0.2	–2.9		2.0	1.6	11.4
Q2	2.4	1.1	0.4	1.3	–0.3	0.5	0.5	0.5	1.9	0.4	–2.5		2.0	1.7	11.2
Q3	2.9	1.2	0.4	1.3	–0.6	1.5	0.9	2.9	2.3	0.5	–1.4		2.7	1.7	11.0
Q4	..	..	..	..	..	..	..	..	2.3	1.0	0.7		..	..	10.5
1999 Jan	..	..	..	..	..	..	..	1.8	0.2	0.2	–2.7		..	..	11.5
Feb	..	..	..	..	..	..	..	0.7	3.6	0.2	–3.0		..	..	11.4
Mar	..	..	..	..	..	..	..	0.5	6.5	0.4	–3.1		..	..	11.4
Apr	..	..	..	..	..	..	..	0.3	2.3	0.4	–2.8		..	..	11.3
May	..	..	..	..	..	..	..	0.4	0.9	0.4	–2.5		..	..	11.2
Jun	..	..	..	..	..	..	..	1.1	2.5	0.3	–2.2		..	..	11.2
Jul	..	..	..	..	..	..	..	2.9	4.5	0.4	–1.8		..	..	11.0
Aug	..	..	..	..	..	..	..	2.9	–0.4	0.5	–1.4		..	..	11.1
Sep	..	..	..	..	..	..	..	3.0	2.7	0.7	–0.8		..	..	10.8
Oct	..	..	..	..	..	..	..	3.1	0.5	0.8	0.3		..	..	10.7
Nov	..	..	..	..	..	..	..	4.5	3.1	0.9	0.8		..	..	10.5
Dec	..	..	..	..	..	..	..	..	3.3	1.3	1.1		..	..	10.4
2000 Jan	..	..	..	..	..	..	..	..	..	..	..		..	..	..
Percentage change on previous quarter														
	ILGJ	HUBQ	HUBR	HUBS	HUBT	HUBU	HUBV	ILHD	ILHX					ILIR
1997 Q1	0.5	0.1	0.1	–0.3	0.1	0.6	0.1	–	0.4					0.1
Q2	0.6	0.1	0.1	0.3	–0.3	0.9	0.5	3.1	0.1					0.2
Q3	0.8	0.3	0.1	0.1	0.4	0.8	0.9	1.8	1.3					0.3
Q4	1.2	0.8	0.1	0.3	–0.1	0.8	0.7	1.2	1.0					0.4
1998 Q1	0.9	0.4	–	0.3	0.6	0.3	0.7	0.8	–0.2					0.5
Q2	0.8	0.7	0.1	0.3	–0.2	0.2	0.3	1.4	1.0					0.4
Q3	0.4	0.2	–	0.3	–0.2	0.1	0.1	–0.3	0.5					0.5
Q4	0.7	0.4	0.1	0.3	0.3	–0.2	0.1	0.2	1.5					0.3
1999 Q1	0.4	0.1	0.1	0.4	–0.3	–0.2	–0.2	–0.4	0.4					0.4
Q2	0.8	0.3	0.1	0.3	–0.1	0.7	0.5	1.0	–0.5					0.5
Q3	1.0	0.4	0.1	0.3	–0.5	1.2	0.5	2.1	0.9					0.5
Q4	..	..	..	..	..	..	..	..	1.5					..
Percentage change on previous month														
								ILKD	ILKN					
1999 Jan								–0.1	0.5					
Feb								–0.4	–0.2					
Mar								1.0	1.1					
Apr								–0.2	–0.4					
May								0.5	–2.6					
Jun								1.0	2.9					
Jul								1.4	2.8					
Aug								–	–5.6					
Sep								–0.2	2.5					
Oct								0.5	0.5					
Nov								1.6	2.0					
Dec								..	–0.1					
2000 Jan								..	..					

GDP = Gross Domestic Product at constant market prices
PFC = Private Final Consumption at constant market prices
GFC = Government Final Consumption at constant market prices
GFCF = Gross Fixed Capital Formation at constant market prices

Sales = Retail Sales volume
CPI = Consumer Prices, measurement not uniform among countries
PPI = Producer Prices (manufacturing)
Earnings = Average Wage Earnings (manufacturing), definitions of coverage and treatment vary among countries

4 Italy

	Contribution to change in GDP													
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PPI	Earnings	Empl	Unempl
Percentage change on a year earlier														
	ILGA	HUCI	HUCJ	HUCK	HUCL	HUCM	HUCN	ILGU	ILHO	HYAA	ILAH	ILAQ	ILII	GABE
1991	1.4	1.7	0.3	0.2	–0.1	–0.3	0.5	–1.8	3.2	6.3	3.3	9.7	1.3	8.6
1992	0.8	1.2	0.1	–0.3	–0.1	1.4	1.6	–1.0	1.9	5.3	2.0	5.4	–1.0	8.8
1993	–0.9	–2.3	–	–2.2	–0.7	1.9	–2.5	–2.3	–3.0	4.6	3.7	3.6	–4.1	10.3
1994	2.2	0.9	–0.2	–	0.8	2.3	1.7	5.8	–6.1	4.1	3.7	3.4	–1.7	11.2
1995	2.9	1.0	–0.4	1.1	0.2	3.1	2.1	5.8	–5.1	5.3	7.9	3.1	–0.6	11.6
1996	0.9	0.5	0.2	0.4	–0.8	0.3	–0.2	–1.5	–1.7	4.0	1.8	3.1	0.5	11.7
1997	1.5	1.5	–0.1	0.2	0.8	1.4	2.3	3.8	7.0	2.0	1.3	3.6	0.4	11.7
1998	1.4	1.1	0.2	0.6	0.6	0.3	1.5	1.4	3.2	2.0	0.1	2.8	1.2	11.8
1999	..	..	..	..	..	..	..	..	..	1.7	–0.2	..	1.2	..
1997 Q1	–0.5	1.2	–0.1	–0.4	–1.1	–	0.1	–1.8	1.6	2.5	0.9	3.8	0.5	11.8
Q2	1.7	1.8	–0.1	–	1.8	1.5	3.3	4.1	8.0	1.9	1.2	3.8	0.5	11.7
Q3	1.8	1.6	–0.1	0.3	0.5	2.1	2.6	5.4	7.9	1.8	1.6	3.5	0.4	11.7
Q4	2.9	1.3	–	0.8	2.0	2.0	3.1	7.6	10.6	2.0	1.6	3.5	0.3	11.8
1998 Q1	2.7	1.2	0.2	1.0	1.6	2.0	3.4	5.1	3.8	2.0	1.2	2.2	1.0	11.8
Q2	1.4	0.9	0.2	0.6	0.3	0.9	1.6	2.7	0.9	2.1	0.6	3.1	0.9	11.9
Q3	1.3	1.1	0.2	0.7	0.3	–0.2	0.9	0.3	3.4	2.1	–0.1	2.8	1.1	11.9
Q4	0.2	1.1	0.3	0.2	–	–1.4	0.1	–2.4	4.8	1.7	–1.2	3.0	1.5	11.8
1999 Q1	0.9	1.1	0.3	0.2	0.9	–1.5	0.1	–1.2	..	1.4	–1.8	3.0	1.2	11.6
Q2	0.8	0.9	0.3	0.5	0.6	–0.7	0.8	–2.4	..	1.4	–1.4	2.1	1.3	11.4
Q3	1.2	0.8	0.4	0.6	–	0.3	0.9	0.3	..	1.7	–	2.4	1.2	11.2
Q4	..	..	..	..	..	..	..	..	..	2.1	2.2	..	1.4	..
1999 Jan	..	..	..	..	..	..	..	–1.0	..	1.5	–1.6	3.4	..	11.7
Feb	..	..	..	..	..	..	..	–2.2	..	1.4	–1.9	3.3	..	11.6
Mar	..	..	..	..	..	..	..	–0.5	..	1.3	–1.8	2.1	..	11.5
Apr	..	..	..	..	..	..	..	–3.0	..	1.5	–1.6	2.2	..	11.5
May	..	..	..	..	..	..	..	–2.9	..	1.5	–1.4	2.1	..	11.4
Jun	..	..	..	..	..	..	..	–1.3	..	1.4	–1.4	1.9	..	11.4
Jul	..	..	..	..	..	..	..	–1.1	..	1.7	–0.6	2.6	..	11.3
Aug	..	..	..	..	..	..	..	2.6	..	1.7	–	2.1	..	11.2
Sep	..	..	..	..	..	..	..	–0.5	..	1.8	0.8	2.3	..	11.1
Oct	..	..	..	..	..	..	..	1.4	..	2.0	1.6	1.9	..	11.1
Nov	..	..	..	..	..	..	..	2.3	..	2.0	2.2	1.8	..	..
Dec	..	..	..	..	..	..	..	..	..	2.1	2.8	..	..	..
2000 Jan	..	..	..	..	..	..	..	..	..	2.2	..	..	..	..

Percentage change on previous quarter														
	ILGK	HUCO	HUCP	HUCQ	HUCR	HUCS	HUCT	ILHE	ILHY				ILIS	
1997 Q1	–0.3	0.4	–0.1	–	–0.2	–0.1	0.2	1.4	12.4				–1.4	
Q2	1.8	0.7	–	0.2	1.6	0.7	1.5	3.0	2.5				1.2	
Q3	0.7	0.1	–	0.1	–0.2	0.9	0.3	1.5	–3.3				1.2	
Q4	0.7	0.1	–	0.5	0.7	0.5	1.1	1.5	–0.7				–0.7	
1998 Q1	–0.5	0.3	0.1	0.2	–0.5	–0.2	0.4	–1.0	5.5				–0.7	
Q2	0.5	0.4	–	–0.2	0.3	–0.4	–0.3	0.7	–0.4				1.1	
Q3	0.5	0.3	–	0.2	–0.2	–0.2	–0.4	–0.9	–0.9				1.4	
Q4	–0.4	0.2	0.1	–	0.5	–0.7	0.4	–1.3	0.6				–0.3	
1999 Q1	0.2	0.3	0.1	0.2	0.3	–0.2	0.4	0.3	..				–1.0	
Q2	0.4	0.1	0.1	0.1	–	0.4	0.4	–0.6	..				1.2	
Q3	1.0	0.2	0.1	0.3	–0.8	0.9	–0.3	1.9	..				1.3	
Q4	..	..	..	..	..	..	..	..	..				–0.1	

Percentage change on previous month		
	ILKE	ILKO
1999 Jan	2.2	..
Feb	–0.8	..
Mar	1.5	..
Apr	–1.5	..
May	–0.4	..
Jun	1.5	..
Jul	0.6	..
Aug	0.9	..
Sep	–0.5	..
Oct	0.6	..
Nov	1.1	..
Dec	..	..
2000 Jan	..	..

GDP = Gross Domestic Product at constant market prices
PFC = Private Final Consumption at constant market prices
GFC = Government Final Consumption at constant market prices
GFCF = Gross Fixed Capital Formation at constant market prices
ChgStk = Change in Stocks at constant market prices
Exports = Exports of goods and services
Sales = Retail Sales volume
CPI = Consumer Prices, measurement not uniform among countries
PPI = Producer Prices (manufacturing)
Earnings = Average Wage Earnings (manufacturing), definitions of coverage and treatment vary among countries
Empl = Total Employment not seasonally adjusted

5 USA

	GDP	Contribution to change in GDP						IoP	Sales	CPI	PPI	Earnings	Empl[1]	Unempl
		PFC	GFC	GFCF	ChgStk	Exports	less imports							
Percentage change on a year earlier														
	ILGC	HUDG	HUDH	HUDI	HUDJ	HUDK	HUDL	ILGW	ILHQ	ILAA	ILAJ	ILAS	ILIK	GADO
1991	–0.2	0.1	0.2	–0.9	–0.3	0.6	–	–2.0	–1.9	4.2	2.0	3.2	–0.8	6.8
1992	3.3	2.1	0.1	0.8	0.3	0.6	0.6	3.1	3.4	3.0	1.3	2.7	0.6	7.5
1993	2.4	2.0	–0.1	1.0	–	0.3	0.9	3.4	4.9	2.9	1.2	2.6	1.5	6.9
1994	4.0	2.5	–	1.2	0.7	0.8	1.2	5.5	6.5	2.6	0.6	2.4	2.3	6.1
1995	2.7	2.0	–	1.0	–0.5	1.0	0.9	4.8	3.6	2.8	1.9	2.6	1.5	5.6
1996	3.7	2.2	0.1	1.5	–	0.9	1.0	4.4	4.9	2.9	2.6	3.3	1.4	5.4
1997	4.5	2.5	0.3	1.4	0.5	1.4	1.7	6.3	4.3	2.3	0.4	3.1	2.3	4.9
1998	4.3	3.2	0.2	2.0	0.1	0.3	1.6	4.2	6.1	1.6	–0.9	2.6	1.5	4.5
1999	4.0	3.5	0.4	1.6	–0.4	0.4	1.7	3.5	..	2.1	1.9	3.0	1.5	4.2
1997 Q1	4.7	2.5	0.4	1.5	0.6	1.3	1.5	6.4	4.9	2.9	2.1	3.5	2.4	5.3
Q2	4.3	2.0	0.3	1.3	0.8	1.5	1.7	5.9	3.0	2.3	0.4	2.9	2.4	5.0
Q3	4.7	2.8	0.4	1.5	0.1	1.8	1.8	6.2	4.9	2.1	–0.2	2.9	2.1	4.8
Q4	4.3	2.8	0.3	1.4	0.5	1.1	1.8	6.8	4.2	1.9	–0.8	3.2	2.0	4.7
1998 Q1	4.7	2.9	0.2	2.0	0.7	0.8	1.8	5.7	4.8	1.4	–1.5	2.8	1.9	4.7
Q2	4.0	3.6	0.2	2.1	–0.6	0.2	1.7	4.7	7.5	1.6	–0.8	2.8	1.5	4.4
Q3	3.9	3.2	0.1	1.8	0.2	–0.2	1.3	3.8	5.1	1.6	–0.6	2.5	1.1	4.5
Q4	4.6	3.4	0.3	2.2	–	0.2	1.5	2.9	7.3	1.5	–0.4	2.1	1.3	4.4
1999 Q1	3.9	3.5	0.4	1.9	–0.7	0.1	1.4	2.8	8.9	1.7	0.7	1.8	1.7	4.3
Q2	3.8	3.4	0.2	1.6	–0.3	0.3	1.5	3.3	7.5	2.2	1.3	2.8	1.4	4.3
Q3	4.3	3.5	0.4	1.8	–0.4	0.7	1.9	3.7	9.0	2.4	2.3	3.9	1.4	4.2
Q4	4.2	3.6	0.5	1.4	–0.1	0.5	1.9	4.5	..	2.6	2.9	3.6	1.5	4.1
1999 Jan	..	..	..	..	..	..	..	2.4	8.2	1.7	0.9	1.9	1.9	4.3
Feb	..	..	..	..	..	..	..	2.9	9.5	1.7	0.4	1.9	1.6	4.4
Mar	..	..	..	..	..	..	..	3.1	8.9	1.8	0.8	1.8	1.6	4.2
Apr	..	..	..	..	..	..	..	2.9	7.5	2.3	1.2	2.8	1.3	4.3
May	..	..	..	..	..	..	..	2.9	7.7	2.2	1.4	2.8	1.4	4.2
Jun	..	..	..	..	..	..	..	3.9	7.1	2.0	1.5	2.8	1.6	4.3
Jul	..	..	..	..	..	..	..	4.7	8.6	2.1	1.5	4.6	1.5	4.3
Aug	..	..	..	..	..	..	..	3.1	9.7	2.3	2.3	3.7	1.6	4.2
Sep	..	..	..	..	..	..	..	3.4	8.6	2.6	3.2	3.6	1.2	4.2
Oct	..	..	..	..	..	..	..	3.9	7.6	2.6	2.7	3.6	1.5	4.1
Nov	..	..	..	..	..	..	..	4.6	7.9	2.6	3.1	3.6	1.5	4.1
Dec	..	..	..	..	..	..	..	5.0	..	2.6	2.9	3.6	1.4	4.1
2000 Jan	..	..	..	..	..	..	..	..	..	..	..	4.5	1.5	4.0
Percentage change on previous quarter														
	ILGM	HUDM	HUDN	HUDO	HUDP	HUDQ	HUDR	ILHG	ILIA				ILIU	
1997 Q1	1.2	0.8	0.1	0.3	0.2	0.2	0.5	1.6	1.4				–0.8	
Q2	1.3	0.3	0.2	0.4	0.5	0.4	0.6	1.7	–0.4				1.9	
Q3	1.0	1.1	–	0.5	–0.4	0.3	0.5	1.7	2.5				1.0	
Q4	0.8	0.6	–	0.1	0.2	0.1	0.2	1.6	0.5				–	
1998 Q1	1.6	0.9	–0.1	0.9	0.4	–	0.5	0.6	2.0				–1.0	
Q2	0.5	1.0	0.2	0.6	–0.8	–0.1	0.4	0.7	2.2				1.5	
Q3	0.9	0.7	–	0.2	0.4	–	0.2	0.8	0.2				0.6	
Q4	1.4	0.8	0.1	0.5	–0.1	0.4	0.4	0.8	2.7				0.2	
1999 Q1	0.9	1.1	–	0.6	–0.2	–0.2	0.4	0.5	3.4				–0.6	
Q2	0.5	0.8	–	0.3	–0.4	0.1	0.5	1.2	0.9				1.2	
Q3	1.4	0.8	0.2	0.3	0.3	0.3	0.5	1.2	1.7				0.6	
Q4	1.4	0.9	0.2	0.2	0.3	0.2	0.4	1.6	..				0.3	
Percentage change on previous month														
								ILKG	ILKQ				ILLA	
1999 Jan								0.3	1.1				–1.0	
Feb								0.3	1.9				0.2	
Mar								0.4	–				0.5	
Apr								0.3	–0.4				0.2	
May								0.6	1.1				0.7	
Jun								0.3	–				0.7	
Jul								0.6	0.7				0.3	
Aug								0.2	1.1				–0.4	
Sep								0.2	–0.4				–0.6	
Oct								0.9	0.3				0.7	
Nov								0.4	1.3				0.1	
Dec								0.4	..				0.1	
2000 Jan								..	..				–0.9	

GDP = Gross Domestic Product at constant market prices
PFC = Private Final Consumption at constant market prices
GFC = Government Final Consumption at constant market prices
GFCF = Gross Fixed Capital Formation at constant market prices
ChgStk = Change in Stocks at constant market prices
Sales = Retail Sales volume
CPI = Consumer Prices, measurement not uniform among countries
PPI = Producer Prices (manufacturing)
Earnings = Average Earnings (manufacturing), definitions of coverage and treatment vary among countries

6 Japan

	Contribution to change in GDP													
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP[1]	Sales	CPI	PPI	Earnings[2]	Empl	Unempl
Percentage change on a year earlier	ILGD	HUCU	HUCV	HUCW	HUCX	HUCY	HUCZ	ILGX	ILHR	ILAB	ILAK	ILAT	ILIL	GADP
1991	3.8	1.5	0.2	1.1	0.3	0.6	–0.3	1.9	2.5	3.2	1.2	3.5	1.9	2.1
1992	1.0	1.2	0.2	–0.5	–0.4	0.5	–	–5.7	–0.2	1.8	–1.0	1.3	1.1	2.1
1993	0.3	0.7	0.2	–0.6	–0.2	0.2	–	–3.6	–2.8	1.2	–1.6	0.4	0.2	2.5
1994	0.7	1.1	0.2	–0.2	–0.2	0.5	0.8	1.3	0.3	0.7	–1.8	2.1	0.1	2.9
1995	1.4	1.2	0.3	0.4	0.2	0.7	1.4	3.3	0.1	–0.1	–0.7	3.0	–	3.1
1996	5.2	1.8	0.2	3.4	0.4	0.8	1.3	2.4	0.7	0.1	–1.8	2.5	0.5	3.4
1997	1.6	0.3	0.1	–0.3	0.1	1.4	0.1	3.5	–1.9	1.7	0.7	3.0	1.0	3.4
1998	–2.6	–0.3	0.1	–2.3	–0.6	–0.3	–0.9	–6.6	–5.5	0.7	–1.3	–0.7	–0.6	4.1
1999	..	..	..	..	..	..	..	0.4	–2.1	–0.3	–1.5	–0.5	–0.8	4.7
1997 Q1	3.8	2.3	–	0.9	–0.3	1.5	0.6	5.2	5.6	0.6	–0.9	5.0	1.6	3.3
Q2	1.2	–0.5	0.2	–0.6	0.2	2.0	0.1	5.8	–4.7	2.0	1.3	2.6	1.3	3.4
Q3	1.8	0.4	0.1	–0.4	0.2	1.4	–	4.0	–3.6	2.1	1.2	2.7	0.7	3.4
Q4	–0.5	–1.0	0.1	–1.2	0.1	1.0	–0.4	–0.7	–4.9	2.2	1.0	1.6	0.7	3.5
1998 Q1	–2.9	–2.1	0.3	–1.8	–0.1	0.3	–0.7	–4.1	–10.0	2.0	0.4	–0.1	–	3.7
Q2	–1.1	0.7	–	–1.8	–0.6	–0.5	–1.1	–8.0	–2.4	0.4	–1.9	–0.3	–0.7	4.1
Q3	–3.2	–0.2	0.2	–3.0	–0.9	–0.2	–1.0	–7.9	–3.8	–0.2	–1.8	–1.7	–0.9	4.2
Q4	–3.1	0.3	0.1	–2.6	–0.9	–0.9	–0.9	–6.3	–5.2	0.5	–2.0	–0.6	–1.0	4.4
1999 Q1	–0.4	0.6	0.2	–0.9	–0.2	–0.4	–0.4	–4.2	–4.5	–0.1	–2.1	–0.3	–1.2	4.6
Q2	0.7	1.1	0.1	–0.1	0.1	–0.1	0.5	–0.9	–1.8	–0.3	–1.8	–1.0	–1.1	4.7
Q3	0.9	1.0	0.1	–	0.2	0.5	0.8	2.7	–1.8	–	–1.4	–0.4	–0.7	4.7
Q4	..	..	..	..	..	..	..	4.2	–0.3	–1.0	–0.6	–0.3	–0.2	4.7
1999 Jan	..	..	..	..	..	..	..	–8.0	–5.2	0.2	–2.2	–2.3	–1.2	4.5
Feb	..	..	..	..	..	..	..	–3.8	–4.2	–0.1	–2.1	0.5	–1.2	4.6
Mar	..	..	..	..	..	..	..	–0.6	–4.2	–0.4	–2.0	0.9	–1.3	4.7
Apr	..	..	..	..	..	..	..	–2.2	–2.1	–0.1	–1.9	1.1	–1.0	4.8
May	..	..	..	..	..	..	..	–0.6	–2.1	–0.4	–1.8	0.1	–1.0	4.6
Jun	..	..	..	..	..	..	..	–	–1.1	–0.3	–1.7	–4.4	–1.3	4.8
Jul	..	..	..	..	..	..	..	0.1	–2.1	–0.1	–1.5	–2.9	–1.3	4.8
Aug	..	..	..	..	..	..	..	5.0	–2.2	0.3	–1.4	0.3	–0.6	4.7
Sep	..	..	..	..	..	..	..	3.0	–1.1	–0.2	–1.1	1.6	–0.2	4.6
Oct	..	..	..	..	..	..	..	1.2	1.1	–0.7	–0.8	1.1	–0.4	4.7
Nov	..	..	..	..	..	..	..	6.4	–2.2	–1.2	–0.5	0.3	–	4.6
Dec	..	..	..	..	..	..	..	5.0	–	–1.1	–0.5	–2.4	–0.3	4.7
2000 Jan	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Percentage change on previous quarter	ILGN	HUDA	HUDB	HUDC	HUDD	HUDE	HUDF	ILHH	ILIB				ILIV	
1997 Q1	1.3	1.4	–0.2	–0.2	–0.1	0.3	–	1.8	5.3				–0.9	
Q2	–2.0	–2.7	0.2	–0.5	0.3	0.6	–0.1	–0.1	–10.0				2.8	
Q3	0.9	0.9	–	0.1	0.1	–0.2	–0.1	–	0.7				–0.2	
Q4	–0.6	–0.5	0.1	–0.6	–0.1	0.3	–0.2	–2.3	–0.4				–1.0	
1998 Q1	–1.2	0.2	–0.1	–0.8	–0.4	–0.4	–0.3	–1.7	–0.3				–1.6	
Q2	–0.2	0.1	–	–0.4	–0.2	–0.2	–0.5	–4.1	–2.4				2.1	
Q3	–1.2	–	0.1	–1.2	–0.2	0.1	–	0.1	–0.7				–0.4	
Q4	–0.5	–	0.1	–0.2	–0.1	–0.4	–0.1	–0.7	–1.8				–1.1	
1999 Q1	1.5	0.5	0.1	0.9	0.3	–	0.3	0.5	0.4				–1.8	
Q2	1.0	0.7	–0.1	0.4	0.1	0.2	0.3	–0.8	0.3				2.2	
Q3	–1.0	–0.1	0.1	–1.1	–0.1	0.7	0.3	3.8	–0.8				–	
Q4	..	..	..	..	..	..	..	0.7	–0.3				–0.6	
Percentage change on previous month								ILKH	ILKR				ILLB	
1999 Jan								–0.6	1.1				–1.0	
Feb								0.8	–				–0.7	
Mar								2.6	–1.1				0.8	
Apr								–3.1	1.1				1.3	
May								–1.0	–				1.0	
Jun								3.3	–				–0.2	
Jul								–1.0	–				–0.4	
Aug								4.5	–1.1				0.2	
Sep								–0.2	–				0.1	
Oct								–2.9	1.1				–0.2	
Nov								4.2	–2.2				–0.3	
Dec								–1.3	1.1				–0.9	
2000 Jan								..	..				..	

GDP = Gross Domestic Product at constant market prices
PFC = Private Final Consumption at constant market prices
GFC = Government Final Consumption at constant market prices
GFCF = Gross Fixed Capital Formation at constant market prices
ChgStk = Change in Stocks at constant market prices
Exports = Exports of goods and services

Sales = Retail Sales volume
CPI = Consumer Prices, measurement not uniform among countries
PPI = Producer Prices (manufacturing)
Earnings = Average Earnings (manufacturing), definitions of coverage and treatment vary among countries
Empl = Total Employment not seasonally adjusted

7 World trade in goods[1]

	Export of manufactures			Import of manufactures			Export of goods			Import of goods			Total trade	
	Total	OECD	Other	Total	OECD	Other	Total	OECD	Other	Total	OECD	Other	manufactures	goods
Percentage change on a year earlier														
	ILIZ	ILJA	ILJB	ILJC	ILJD	ILJE	ILJF	ILJG	ILJH	ILJI	ILJJ	ILJK	ILJL	ILJM
1991	3.6	2.4	8.9	5.5	4.0	10.5	3.8	3.4	4.9	4.5	3.5	7.5	4.5	4.1
1992	4.3	3.4	8.4	5.1	4.1	7.9	4.2	3.7	5.7	5.0	4.2	7.5	4.7	4.6
1993	4.2	1.5	15.3	3.5	0.4	12.5	3.9	2.1	9.1	3.3	0.9	10.3	3.8	3.6
1994	12.2	10.0	20.1	12.2	12.6	11.1	10.5	9.1	14.1	10.7	10.7	10.8	12.2	10.6
1995	9.8	10.2	8.6	10.7	10.1	12.4	8.7	9.0	7.8	9.4	8.4	12.2	10.3	9.1
1996	7.5	7.4	7.8	7.5	7.9	6.5	7.1	6.9	7.6	6.4	7.2	4.3	7.5	6.7
1997	11.7	12.4	9.6	10.9	11.6	9.0	10.4	11.1	8.5	9.5	9.8	8.8	11.3	10.0
1998	..	5.6	..	..	8.3	..	5.0	5.3	4.2	5.3	7.4	–0.2	..	5.2
1995 Q1	13.3	13.4	12.6	13.5	13.8	12.8	11.6	12.1	10.1	11.9	11.6	12.8	13.4	11.8
Q2	10.4	10.8	8.9	11.9	11.1	13.8	9.2	9.7	7.9	10.7	9.6	13.7	11.1	9.9
Q3	8.9	9.5	6.9	10.3	9.2	12.9	7.9	8.3	6.7	9.1	7.7	12.7	9.6	8.5
Q4	7.1	7.3	6.4	7.7	6.7	10.3	6.4	6.3	6.6	6.2	4.9	9.8	7.4	6.3
1996 Q1	6.2	6.1	6.7	7.8	7.7	8.0	5.8	5.5	6.8	6.3	6.5	6.0	7.0	6.1
Q2	6.2	6.0	7.1	6.3	6.4	5.9	6.0	5.5	7.2	5.1	5.9	3.2	6.2	5.6
Q3	7.9	7.8	8.0	7.7	8.6	5.5	7.5	7.4	7.8	6.5	7.8	3.2	7.8	7.0
Q4	9.5	9.6	9.2	8.1	8.6	6.9	9.0	9.2	8.7	7.5	8.5	5.0	8.8	8.3
1997 Q1	8.9	8.7	9.7	8.0	8.0	7.9	8.3	8.0	9.1	7.4	7.4	7.4	8.5	7.8
Q2	12.8	13.6	10.0	11.9	13.0	9.1	11.6	12.6	9.2	10.5	10.9	9.3	12.3	11.0
Q3	13.5	14.6	9.7	11.9	12.8	9.5	11.6	12.8	8.3	10.2	10.6	9.4	12.7	10.9
Q4	11.7	12.5	9.0	11.5	12.4	9.5	10.0	11.0	7.5	10.0	10.4	9.1	11.6	10.0
1998 Q1	10.4	11.4	6.8	10.0	12.0	4.6	9.2	10.7	5.3	8.9	10.6	4.4	10.2	9.0
Q2	5.9	5.8	6.3	6.6	8.4	1.8	5.3	5.4	5.1	5.9	7.4	1.8	6.3	5.6
Q3	3.5	3.3	4.5	4.1	6.6	–2.2	3.0	2.8	3.8	3.7	5.7	–1.8	3.8	3.3
Q4	..	2.4	..	..	6.6	..	2.9	2.9	2.9	3.0	6.0	–4.8	..	3.0
1999 Q1	..	..	..	..	..	..	..	2.1	..	..	5.4	..	..	..
Percentage change on previous quarter														
	ILJN	ILJO	ILJP	ILJQ	ILJR	ILJS	ILJT	ILJU	ILJV	ILJW	ILJX	ILJY	ILJZ	ILKA
1995 Q1	3.1	3.6	1.8	2.1	1.6	3.4	2.6	2.9	1.7	1.7	1.0	3.3	2.6	2.1
Q2	1.3	1.2	1.7	2.2	1.7	3.2	1.1	0.9	1.6	2.2	1.7	3.2	1.7	1.6
Q3	0.9	0.7	1.5	1.2	0.8	2.2	1.1	0.9	1.6	1.1	0.8	2.0	1.0	1.1
Q4	1.6	1.7	1.3	2.0	2.4	1.1	1.5	1.5	1.6	1.2	1.3	0.8	1.8	1.3
1996 Q1	2.3	2.4	2.0	2.2	2.6	1.3	2.0	2.1	1.8	1.8	2.5	–0.2	2.3	1.9
Q2	1.3	1.1	2.0	0.7	0.5	1.2	1.2	0.9	2.0	1.0	1.2	0.5	1.0	1.1
Q3	2.5	2.5	2.3	2.6	2.9	1.8	2.6	2.7	2.2	2.4	2.6	2.0	2.5	2.5
Q4	3.2	3.3	2.5	2.4	2.4	2.4	2.9	3.2	2.4	2.1	2.0	2.5	2.8	2.5
1997 Q1	1.7	1.6	2.4	2.1	2.0	2.2	1.4	1.0	2.3	1.6	1.4	2.1	1.9	1.5
Q2	4.9	5.6	2.4	4.4	5.1	2.3	4.3	5.2	2.0	3.9	4.5	2.3	4.6	4.1
Q3	3.1	3.4	2.0	2.6	2.7	2.2	2.5	2.9	1.4	2.2	2.3	2.1	2.8	2.4
Q4	1.5	1.4	1.9	2.1	1.9	2.4	1.5	1.5	1.6	2.0	1.8	2.3	1.8	1.7
1998 Q1	0.6	0.6	0.3	0.6	1.8	–2.4	0.6	0.8	0.1	0.5	1.6	–2.3	0.6	0.6
Q2	0.7	0.3	1.9	1.2	1.7	–0.4	0.6	0.2	1.8	1.0	1.5	–0.3	0.9	0.8
Q3	0.7	0.9	0.2	0.2	1.0	–1.8	0.3	0.3	0.1	0.1	0.6	–1.6	0.5	0.2
Q4	..	0.5	..	..	2.0	..	1.4	1.6	0.8	1.3	2.0	–0.7	..	1.4
1999 Q1	..	..	..	..	..	..	..	–	..	..	1.1	..	..	..

1 Data used in the World and OECD aggregates refer to Germany after unification

Source: OECD - SNA68

Final Expenditure Prices Index (Experimental) – January 2000

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Note that further development work, including the adjustment of the Index of Government Prices for productivity change, is ongoing and the FEPI will be available only as an experimental index until this work has been completed.

Summary

The rate of inflation, as measured by the Final Expenditure Prices Index (FEPI) in January 2000, was 1.9 per cent, down from 2.0 per cent in December. Consumer price inflation, as measured by the Index of Consumer Prices (ICP), was 1.3 per cent, down from 1.5 per cent in December. Investment price inflation, as measured by the Index of Investment Prices (IIP) was 3.5 per cent, up from 3.1 per cent in December, while inflation as measured by the Index of Government Prices (IGP) was 2.3 per cent, down from 2.7 per cent in December.

The FEPI annual percentage change

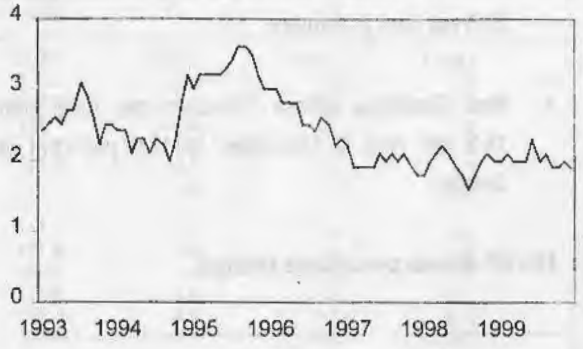


Table A

Final Expenditure Prices Index and components (January 1992=100 and annual percentage change)

		Index of Consumer Prices (ICP)		Index of Investment Prices (IIP)		Index of Government Prices (IGP)		Final Expenditure Prices Index (FEPI)	
		Index	Annual percentage change	Index	Annual percentage change	Index	Annual percentage change	Index	Annual percentage change
1999	Aug	121.7	1.8	114.5r	1.6r	121.0	3.3	120.0	2.0
	Sept	122.1	1.7	114.5	1.8	121.1	3.6	120.3	2.1
	Oct	121.9	1.5	114.5	1.7	121.1	3.1	120.2	1.9
	Nov	122.1	1.5	115.2r	2.1r	121.2	2.7	120.5r	1.9r
	Dec	122.4	1.5	116.2	3.1r	121.5	2.7	120.9r	2.0r
2000	Jan	121.5	1.3	116.8	3.5	121.8	2.3	120.5	1.9

The Index of Consumer Prices (ICP)

Consumer price inflation, as measured by the ICP, was 1.3 per cent in January.

Downward pressure came from:

- Tobacco, whose 12 month rate fell from 9.8 per cent to 7.5 per cent. Price increases in January 1999, associated with the tobacco duty increase in December 1998, dropped out of the 12-month comparison.

- Food, whose 12-month rate fell from –1.0 per cent to –1.5 per cent. Downward effect came from price changes for potato products where prices fell in contrast to last year's price increases.

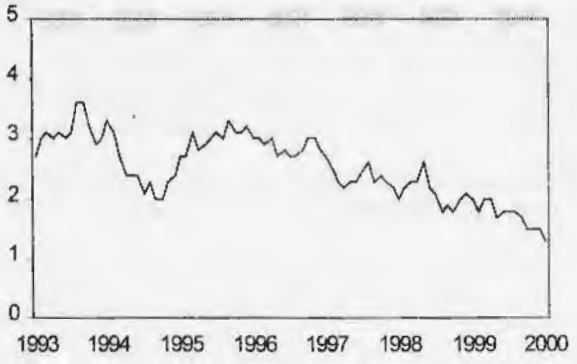
- Transport and communication, whose 12 month rate fell from 2.6 per cent to 2.4 per cent as a result of price reductions in new cars.

- Alcoholic drinks, whose 12-month rate fell from 1.9 per cent to 1.5 per cent as price increases associated with alcohol duty in January 1999 dropped out of the 12-month comparison.

Upward pressure came from:

- Housing, whose 12-month rate rose from 3.0 per cent in December to 3.4 per cent in January.

The ICP annual percentage change



The Index of Investment Prices (IIP)

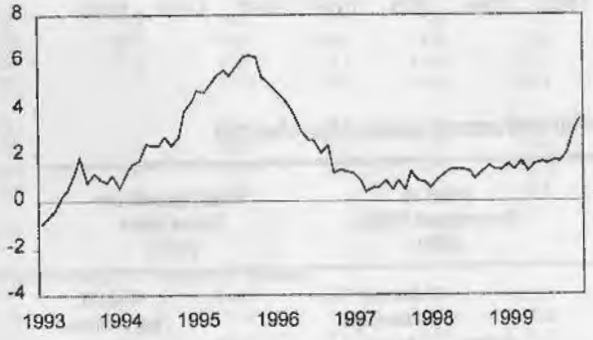
Investment price inflation, as measured by the IIP, increased from 3.1 per cent to 3.5 per cent over the 12-months to January.

Upward pressure on the 12-month rate came from:

- Transfer costs of land and buildings, where the 12-month rate rose from 18.8 per cent in December to 20.5 per cent in January.

- New Dwellings, whose 12-month rate rose from 15.2 per cent in December to 17.9 per cent in January.

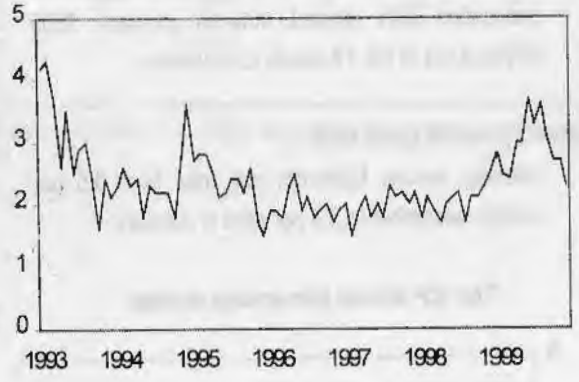
The IIP annual percentage change



The Index of Government Prices (IGP)

The IGP inflation rate was down at 2.3 per cent in January.

The IGP annual percentage change



Comparison between the FEPI and other inflation measures

Table B

Measures of Inflation (annual percentage changes)

		FEPI	RPIX	HICP	PPI
1999	Aug	2.0	2.1	1.3	1.3
	Sep	2.1	2.1	1.2	1.7
	Oct	1.9	2.2	1.2	1.9
	Nov	1.9	2.2	1.3	2.1
	Dec	2.0	2.2	1.2	2.3
2000	Jan	1.9	2.1	0.8	2.5

NOTES

1. The headline measure of inflation is the Retail Prices Index (RPI). The RPI should be used as the main indicator of inflation affecting average households.

2 The Final Expenditure Prices Index (FEPI) is a measure of the change in the prices paid by UK consumers, business and government for final purchases of goods and services. Intermediate purchases by business are excluded. The FEPI is made up of three components:

The Index of Consumer Prices (ICP)
The Index of Investment Prices (IIP)
The Index of Government Prices (IGP).

3. The ICP measures inflation affecting all consumers in the UK. The price indicators used in the ICP are taken mainly from the Retail Prices Index (RPI).

4. The IIP is a measure of the change in the prices paid for capital goods by business and by government. It also covers new construction projects and dwellings built for consumers, business and government. The price indicators used are mainly Producer Price Indices (PPIs), Construction Output Price Indices and an average house price indicator.

5. The IGP measures inflation affecting government. It covers expenditure by central and local government on pay and on procurement. The price indicators used are mainly Average Earnings Indices (to reflect labour costs), PPIs and RPIs (to reflect the cost of goods consumed by Government).

6. Care should be taken when interpreting monthly movements in the IGP. This index is particularly volatile on a month-to-month basis, so a fall one month is often offset by a rise the next and vice versa. The data are of greatest value if trends rather than individual monthly movements are observed.

7. An article describing the development and composition of the FEPI is included in *Economic Trends*, No 526, December 1997. Longer runs of the FEPI back to January 1992, are available in computer readable form from the ONS Sales Office (telephone 020-7533 5670) or on paper from Jim O'Donoghue.

1 Final Expenditure Prices Index (Experimental)

	Index of Consumer Prices ICP	Index of Investment Prices IIP	Index of Government Prices IGP	Final Expenditure Prices Index FEPI	Annual percentage changes ICP	IIP	IGP	FEPI
January 1992=100								
Weights								
1997	605	165	230	1000				
1998	605	169	226	1000				
1999	609	182	209	1000				
	CUSE	CUSK	CUSO	CUSP	CGAZ	CGBF	CGBJ	CGBK
1998 Jan	117.6	111.3	116.2	116.0	2.0	0.8	2.2	1.8
Feb	118.3	111.3	115.9	116.3	2.2	0.6	1.8	1.8
Mar	118.7	111.7	116.3	116.7	2.3	1.0	2.1	2.0
Apr	119.3	111.9	116.3	117.2	2.3	1.1	1.9	2.1
May	120.0	112.4	116.7	117.7	2.6	1.4	1.7	2.2
Jun	119.8	112.4	117.1	117.7	2.2	1.4	2.0	2.1
Jul	119.2	112.7	117.0	117.3	2.1	1.4	2.1	1.9
Aug	119.6	112.7	117.1	117.6	1.8	1.3	2.2	1.8
Sep	120.1	112.5	116.9	117.8	1.9	1.0	1.7	1.6
Oct	120.1	112.6	117.5	118.0	1.8	1.3	2.1	1.8
Nov	120.3	112.8	118.0	118.3	2.0	1.5	2.1	2.0
Dec	120.6	112.7	118.3	118.5	2.1	1.4	2.3	2.1
1999 Jan	120.0	112.9	119.1	118.3	2.0	1.4	2.5	2.0
Feb	120.4	113.1	119.2	118.6	1.8	1.6	2.8	2.0
Mar	121.1	113.3	119.2	119.1	2.0	1.4	2.5	2.1
Apr	121.7	113.8	119.1	119.5	2.0	1.7	2.4	2.0
May	122.0	113.9	120.2	120.0	1.7	1.3	3.0	2.0
Jun	122.0	114.2	120.6	120.1	1.8	1.6	3.0	2.0
Jul	121.4	114.6	121.3	120.0	1.8	1.7	3.7	2.3
Aug	121.7	114.5†	121.0	120.0	1.8	1.6†	3.3	2.0
Sep	122.1	114.5	121.1	120.3	1.7	1.8	3.6	2.1
Oct	121.9	114.5	121.1	120.2	1.5	1.7	3.1	1.9
Nov	122.1	115.2	121.2	120.5†	1.5	2.1	2.7	1.9†
Dec	122.4	116.2	121.5	120.9	1.5	3.1	2.7	2.0
2000 Jan	121.5	116.8	121.8	120.5	1.3	3.5	2.3	1.9

† Indicates earliest revision.

2 FEPI - Index of Consumer Prices (Experimental)

	Food	Alcoholic Drink	Tobacco	Clothing and Footwear	Housing	Fuel and Power	Household Goods and Services	Transport and Communication	Recreation, Entertainment and Education	Other Goods and Services	Index of Consumer Prices ICP
January 1992=100											
Weights											
1997	126	68	30	67	90	39	71	189	119	201	1000
1998	127	68	29	67	87	39	71	188	118	205	1000
1999	119	66	27	70	85	34	75	192	114	218	1000
	CURU	CURV	CURW	CURX	CURY	CURZ	CUSA	CUSB	CUSC	CUSD	CUSE
1998 Jan	111.7	122.1	159.3	99.7	127.3	98.4	109.8	120.6	110.3	125.4	117.6
Feb	111.7	123.1	159.5	102.0	127.4	98.7	111.5	120.8	110.5	126.4	118.3
Mar	111.5	123.5	159.5	104.1	127.6	98.9	113.1	120.8	110.4	126.9	118.7
Apr	111.8	123.6	162.1	105.0	129.9	98.9	112.1	122.1	110.8	127.6	119.3
May	113.5	124.5	162.6	106.0	130.1	98.3	113.3	122.3	111.1	128.1	120.0
Jun	113.1	124.4	162.8	105.7	130.2	97.6	112.7	122.2	110.7	128.4	119.8
Jul	112.8	124.9	163.0	99.3	130.4	97.3	111.4	122.0	110.4	128.6	119.2
Aug	114.1	125.2	163.1	101.2	130.6	97.2	112.2	121.9	110.4	128.8	119.6
Sep	113.7	125.3	163.2	105.8	130.8	97.3	112.9	121.9	111.0	128.7	120.4
Oct	113.9	125.6	163.4	104.7	131.1	97.5	112.4	121.5	111.2	129.5	120.1
Nov	113.8	125.2	163.4	105.3	131.3	97.4	113.6	121.1	111.2	130.2	120.3
Dec	114.7	125.1	168.2	104.7	131.4	97.2	115.7	120.5	111.0	130.6	120.6
1999 Jan	115.1	126.5	172.0	97.6	131.5	97.3	111.3	121.2	110.7	130.6	120.0
Feb	115.4	126.8	172.1	100.0	131.5	97.2	112.8	121.2	110.6	131.0	120.4
Mar	114.7	126.8	178.2	101.6	131.4	97.5	114.6†	122.6	110.7	131.3	121.1
Apr	114.1	127.0	180.7	102.0	133.5	97.3	113.2	124.1	111.1	132.3	121.7
May	114.7	127.6	180.7	102.5	133.6	97.1	114.6	124.1	111.2	132.5	122.0
Jun	114.2	128.2	181.2	102.3	133.7	97.1	114.0	123.8	111.0	132.9	122.0
Jul	113.5	127.9	184.3	97.4	134.0	97.4	112.0	123.8	110.3	133.6	121.4
Aug	113.0	128.1	184.7	98.8	134.3	97.4	113.1	124.2	110.1	133.7	121.7
Sep	112.9	128.1	184.8	102.6	134.4	97.7	114.1	123.9	110.6	133.9	122.1
Oct	112.8	128.2	184.7	101.6	134.8	97.9	113.4	123.7	110.9	133.1	121.9
Nov	113.4	127.8	184.8	102.0	135.1	98.1	114.6	123.3	110.8	133.7	122.1
Dec	113.5	127.5	184.7	101.2	135.3	98.7	116.5	123.6	110.7	134.1	122.4
2000 Jan	113.4	128.4	184.9	94.4	136.0	98.6	111.5	124.1	110.3	133.9	121.5

Annual Percentage Changes

	Food	Alcoholic Drink	Tobacco	Clothing and Footwear	Housing	Fuel and Power	Household Goods and Services	Transport and Communication	Recreation Entertainment and Education	Other Goods and Services	Index of Consumer Prices ICP
	CGAP	CGAQ	CGAR	CGAS	CGAT	CGAU	CGAV	CGAW	CGAX	CGAY	CGAZ
1998 Jan	1.0	3.0	9.4	–0.8	3.2	–5.6	0.9	2.6	0.4	3.9	2.0
Feb	1.3	3.2	9.1	–	3.1	–5.4	1.6	2.3	0.4	4.3	2.2
Mar	1.5	3.6	8.8	0.1	3.0	–5.3	1.3	2.4	0.5	4.4	2.3
Apr	1.5	3.3	9.3	–0.5	3.3	–5.1	0.9	3.5	0.5	4.2	2.3
May	2.3	3.4	9.2	–	3.3	–5.2	1.5	3.6	0.5	4.1	2.6
Jun	1.2	3.2	9.1	0.3	3.2	–5.5	1.2	3.1	0.2	4.1	2.2
Jul	1.3	3.1	9.2	–1.0	3.3	–5.4	1.6	2.2	0.1	4.2	2.1
Aug	1.3	3.2	7.9	–1.1	3.3	–5.4	1.3	1.6	0.2	3.9	1.8
Sep	1.3	3.2	7.7	–0.5	3.3	–2.7	1.2	1.2	0.3	3.5	1.9
Oct	1.5	3.2	7.7	–1.2	3.4	–2.5	0.9	1.0	0.4	3.8	1.8
Nov	2.0	3.4	7.6	–1.8	3.5	–2.2	1.2	0.9	0.5	4.3	2.0
Dec	2.7	3.7	8.4	–1.9	3.5	–1.9	2.2	0.4	0.3	4.3	2.1
1999 Jan	3.0	3.6	8.0	–2.1	3.3	–1.1	1.4	0.5	0.4	4.1	2.0
Feb	3.3	3.0	7.9	–2.0	3.2	–1.5	1.2	0.3	0.1	3.6	1.8
Mar	2.9	2.7	11.7	–2.4	3.0	–1.4	1.3†	1.5	0.3	3.5	2.0
Apr	2.1	2.8	11.5	–2.9	2.8	–1.6	1.0	1.6	0.3	3.7	2.0
May	1.1	2.5	11.1	–3.3	2.7	–1.2	1.1	1.5	0.1	3.4	1.7
Jun	1.0	3.1	11.3	–3.2	2.7	–0.5	1.2	1.3	0.3	3.5	1.8
Jul	0.6	2.4	13.1	–1.9	2.8	0.1	0.5	1.5	–0.1	3.9	1.8
Aug	–1.0	2.3	13.2	–2.4	2.8	0.2	0.8	1.9	–0.3	3.8	1.8
Sep	–0.7	2.2	13.2	–3.0	2.8	0.4	1.1	1.6	–0.4	4.0	1.7
Oct	–1.0	2.1	13.0	–3.0	2.8	0.4	0.9	1.8	–0.3	2.8	1.5
Nov	–0.4	2.1	13.1	–3.1	2.9	0.7	0.9	1.8	–0.4	2.7	1.5
Dec	–1.0	1.9	9.8	–3.3	3.0	1.5	0.7	2.6	–0.3	2.7	1.5
2000 Jan	–1.5	1.5	7.5	–3.3	3.4	1.3	0.2	2.4	–0.4	2.5	1.3

† indicates earliest revision.

3 FEPI - Index of Investment Prices (Experimental)

	Plant and Machinery	Vehicles, etc	New Buildings and Works	Transfer Costs of Land and Buildings	New Dwellings	Index of Investment Prices IIP
January 1992=100						
Weights						
1997	390	103	267	33	207	1000
1998	387	103	277	37	196	1000
1999	413	106	256	40	185	1000
	CUSG	CUSH	CUSF	CUSI	CUSJ	CUSK
1998 Jan	105.6	119.1	113.3	151.7	110.6	111.3
Feb	105.0	118.8	113.8	153.6	111.2	111.3
Mar	104.5	119.5	114.3	154.9	113.1	111.7
Apr	103.7	119.3	114.6	159.6	115.0	111.9
May	103.8	120.4	115.0	160.3	115.9	112.4
Jun	102.9	120.1	115.3	161.0	117.7	112.4
Jul	102.2	120.4	115.8	165.4	118.9	112.7
Aug	101.5	121.2	116.1	165.1	119.5	112.7
Sep	100.5	120.9	116.5	165.9	120.0	112.5
Oct	100.3	121.3	117.1	166.1	120.2	112.6
Nov	100.3	122.4	117.7	165.6	119.7	112.8
Dec	99.8	123.0	118.2	164.8	119.1	112.7
1999 Jan	100.2	122.8	118.5	167.4	118.8	112.9
Feb	100.1	123.4	118.8	168.7	119.0	113.1
Mar	99.7	123.4	119.1	171.3	120.7	113.3
Apr	99.4	123.5	119.3	178.8	122.8	113.8
May	98.9	123.6	119.5	180.8	124.4	113.9
Jun	98.5	123.9	119.7	182.6	126.4	114.2
Jul	97.9	123.4	119.9	188.2	128.9	114.6
Aug	96.9†	123.1†	120.1	189.7	130.9	114.5†
Sep	96.4	123.1	120.4	190.2	131.7	114.5
Oct	95.7	122.9	120.8†	194.3	132.2†	114.5
Nov	96.3	124.8	121.2	193.2†	133.4	115.2
Dec	96.5	125.6	121.5	195.7	137.2	116.2
2000 Jan	96.7	123.7	121.8	201.7	140.1	116.8

Annual Percentage Changes

	Plant and Machinery	Vehicles, etc	New Buildings and Works	Transfer Costs of Land and Buildings	New Dwellings	Index of Investment Prices IIP
	CGBB	CGBC	CGBA	CGBD	CGBE	CGBF
1998 Jan	–5.0	0.8	4.1	8.9	6.0	0.8
Feb	–5.6	0.1	4.3	8.3	6.5	0.6
Mar	–5.1	0.5	4.5	8.9	7.1	1.0
Apr	–5.6	0.7	4.7	11.8	7.6	1.1
May	–5.1	1.6	5.1	10.7	7.7	1.4
Jun	–5.4	1.5	5.4	11.1	8.4	1.4
Jul	–5.4	1.9	5.1	9.7	8.3	1.4
Aug	–5.3	2.4	4.5	8.7	8.1	1.3
Sep	–6.2	1.9	4.5	8.1	8.5	1.0
Oct	–5.9	2.4	4.6	9.1	8.9	1.3
Nov	–5.3	3.6	4.7	8.2	8.3	1.5
Dec	–5.7	3.8	4.8	8.3	7.8	1.4
1999 Jan	–5.1	3.1	4.6	10.3	7.4	1.4
Feb	–4.7	3.9	4.4	9.8	7.0	1.6
Mar	–4.6	3.3	4.2	10.6	6.7	1.4
Apr	–4.1	3.5	4.1	12.0	6.8	1.7
May	–4.7	2.7	3.9	12.8	7.3	1.3
Jun	–4.3	3.2	3.8	13.4	7.4	1.6
Jul	–4.2	2.5	3.5	13.8	8.4	1.7
Aug	–4.5†	1.6†	3.4	14.9	9.5	1.6†
Sep	–4.1	1.8	3.3	14.6	9.7	1.8
Oct	–4.6	1.3	3.2†	17.0	10.0†	1.7
Nov	–4.0	2.0	3.0	16.7†	11.4	2.1
Dec	–3.3	2.1	2.8	18.8	15.2	3.1
2000 Jan	–3.5	0.7	2.8	20.5	17.9	3.5

† Indicates earliest revision.

4 FEPI - Index of Government Prices (Experimental)

	Local Government Total	Central Government Total	Education Grants	Index of Government Prices IGP	Annual percentage changes: Local Government Total	Central Government Total	Education Grants	Index of Government Prices IGP
January 1992=100								
Weights								
1997	347	589	64	1000				
1998	342	591	67	1000				
1999	350	567	83	1000				
	CUSL	CUSM	CUSN	CUSO	CGBG	CGBH	CGBI	CGBJ
1998 Jan	118.3	114.6	119.8	116.2	2.5	1.8	3.7	2.2
Feb	118.2	114.1	119.8	115.9	2.3	1.2	3.7	1.8
Mar	118.9	114.4	119.7	116.3	2.5	1.6	3.6	2.1
Apr	118.6	114.7	119.8	116.3	2.5	1.6	3.7	1.9
May	120.1	114.3	120.7	116.7	2.6	1.0	3.6	1.7
Jun	120.7	114.7	120.6	117.1	2.6	1.6	3.5	2.0
Jul	120.4	114.6	121.1	117.0	2.9	1.7	2.2	2.1
Aug	119.6	115.3	121.1	117.1	2.0	2.3	2.2	2.2
Sep	119.6	114.9	121.1	116.9	2.0	1.5	2.1	1.7
Oct	120.2	115.5	121.1	117.5	2.3	1.9	2.1	2.1
Nov	121.1	115.9	121.2	118.0	2.3	2.0	2.2	2.1
Dec	120.5	116.7	121.2	118.3	2.3	2.5	2.1	2.3
1999 Jan	121.0	117.5	122.9	119.1	2.3	2.5	2.6	2.5
Feb	120.9	117.8	122.9	119.2	2.3	3.2	2.6	2.8
Mar	121.1	117.7	122.9	119.2	1.9	2.9	2.7	2.5
Apr	121.1	117.6	122.9	119.1	2.1	2.5	2.6	2.4
May	122.6	118.3	124.2	120.2	2.1	3.5	2.9	3.0
Jun	122.7	119.0	124.2	120.6	1.7	3.7	3.0	3.0
Jul	123.6	119.6	125.2	121.3	2.7	4.4	3.4	3.7
Aug	123.4	119.0	125.1	121.0	3.2	3.2	3.3	3.3
Sep	123.6	119.2	125.1	121.1	3.3	3.7	3.3	3.6
Oct	123.8	119.1	125.3	121.1	3.0	3.1	3.5	3.1
Nov	124.0	119.0	125.4	121.2	2.4	2.7	3.5	2.7
Dec	124.3	119.4	125.4	121.5	3.2	2.3	3.5	2.7
2000 Jan	124.2	120.0	125.4	121.8	2.6	2.1	2.0	2.3

† Indicates earliest revision.

Index of Distribution (Prototype) – November 1999

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In November, the prototype Index of Distribution (IoD) showed distribution industries' gross value added rising by 2.4 per cent in the latest three months, compared with the same three months in 1998. This rise was driven mainly by the component for the retail trades. The level of the IoD was at 112.8 in November 1999.

The prototype IoD shows the monthly movements in volume terms of gross value added in the distribution sector, which consists of motor trades, wholesaling and retailing (SIC92 section G). Index numbers are based on 1995=100 and all values are seasonally adjusted.

Prototype Index of Distribution

seasonally adjusted: 1995=100

Table A

Prototype IoD and components (1995=100 and 3 month-on-3 month annual percentage change)

seasonally adjusted

		Index of Distribution		Motor trades		Wholesale		Retail	
		Index	Latest 3 mth on same 3 mth a year ago: % change	Index	Latest 3 mth on same 3 mth a year ago: % change	Index	Latest 3 mth on same 3 mth a year ago: % change	Index	Latest 3 mth on same 3 mth a year ago: % change
1999	Jan	110.6	1.4	114.1	2.0	104.3	0.0	114.9	2.4
	Feb	110.4	1.2	113.0	2.3	104.3	-0.6	114.9	2.3
	Mar	111.5	1.3	113.9	1.4	105.3	-0.7	116.1	3.0
	Apr	110.9	1.6	114.3	3.0	104.3	-0.8	115.4	3.1
	May	111.7	2.0	114.9	3.7	104.5	0.0	116.8	2.9
	June	111.7	1.9	114.8	3.4	104.5	0.1	116.8	2.9
	July	112.3	2.0	115.2	2.6	105.7	0.7	116.9	2.9
	Aug	112.8	2.2	114.4	1.8	106.8	1.0	117.6	3.3
	Sept	112.2	2.3	114.0	1.7	105.6	1.2	117.5	3.4
	Oct	112.3r	2.5	114.0	1.0	105.0r	1.4	118.2r	4.0
	Nov	112.8	2.4	114.9	1.4	105.6	1.1	118.4	4.0

The symbol 'r' indicates that the data have been revised since the previous month's release. The values marked are the earliest shown in this table to have been revised.

Tables following this note show data back to January 1995.

Motor trades (SIC92 division 50)

In November, the prototype seasonally adjusted index of gross value added in the motor trades rose by 1.4 per cent in the latest three months, compared with the same period in 1998. The level of the prototype index for the motor trades was at 114.9 in November 1999. Values for 1999 should be treated with caution, however. The new seasonal pattern in vehicle sales, following the change in the vehicle registration system, is not yet clear.

Until a consistent seasonal pattern emerges, the seasonally adjusted series for the affected components will be derived by extending the underlying trend of the series from quarter 4 1998, taking into account

Prototype component index for motor trades

seasonally adjusted: 1995=100

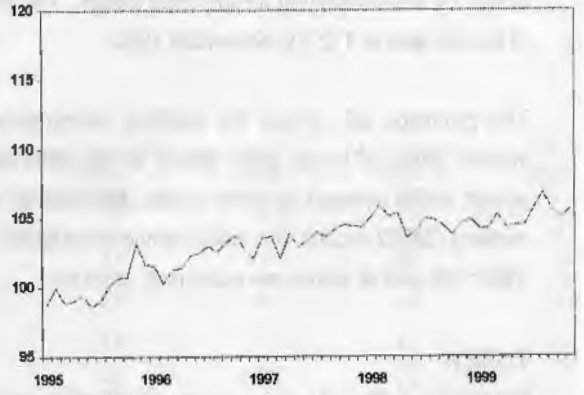
movements in the unadjusted data. This explains why the seasonally adjusted series shows a smoother profile through 1999. The approach is consistent with the treatment of other affected series published by the ONS.

Wholesale (SIC92 division 51)

In November, the prototype index of gross value added in the wholesale trades increased by 1.1 per cent, compared with the same period in 1998. The pattern within wholesaling continued to be mixed but the most important growth was in the sub-component for the wholesale of food, drink, tobacco and household goods. The level of the prototype index for the wholesale trades was at 105.6 in November 1999.

Prototype component index for wholesale

seasonally adjusted: 1995=100

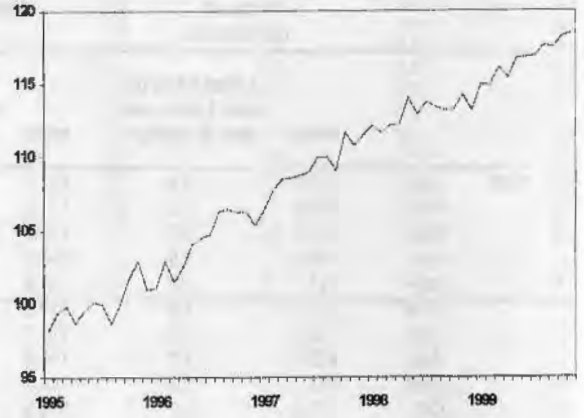


Retail (SIC92 division 52)

In November, the prototype seasonally adjusted index of gross value added in the retail trades rose by 4.0 per cent, compared with the same period in 1998. This was driven mainly by the sub-component for retail sales through predominantly non-food stores. The level of the prototype index for the retail trades was at 118.4 in November 1999.

Prototype component index for retail

seasonally adjusted: 1995=100



Consistency with quarterly estimates of GDP(O)

The monthly figures for the prototype IoD and its three component series are consistent with the corresponding quarterly series for the same industries contained in the quarterly estimates of GDP by the output measure (GDP(O)). The GDP(O) quarterly index for the distribution sector is shown in table 2.9 of this publication. ONS identifiers for the equivalents to the prototype IoD series contained within quarterly GDP(O) are given in the footnotes to the tables that follow.

Component series for retail: differs from the Retail Sales Index

The prototype IoD component for retail shown in this release differs from the established Retail Sales Index (RSI) in that the IoD retail series is designed to indicate movements in retailing gross value added, whereas the RSI is an index of sales. The two series may therefore follow slightly different paths, although the broad trends in each are very similar.

Notes

Further details of the data sources and methods used in this prototype index are given in the article, 'Release of a prototype monthly Index of Distribution', by Hugh Skipper and Ian Cope, which appeared in the December 1999 issue of *Economic Trends* (no. 553).

The data sources and methodology on which the current prototype IoD series are based are to be reviewed as part of the ONS's programme to develop a full Index of Services (IoS). The IoS will be a monthly indicator of changes in gross value added across the whole services sector. Hugh Skipper and Ian Cope's article, 'Plans for the development of a monthly Index of Services', in the October 1999 issue of Economic Trends (no. 551) gives further details.

1 IOD: Index of Distribution (PROTOTYPE)

Index numbers of gross value added at basic prices[1,2,3]

1995=100, seasonally adjusted

	Component series							
	SIC Section G: IoD [4]				SIC50: Motor trades [4]			
		percentage change				percentage change		
	Index	month on month	latest 3 months on previous 3 months	latest 3 months on same 3 months a year ago	Index	month on month	latest 3 months on previous 3 months	latest 3 months on same 3 months a year ago
	FVVR	FVVK	FVVL	FVVM	FVVO	FVVB	FVVC	FVVD
1995 Jan	98.5	..	..	..	98.5	..	..	..
Feb	99.8	1.4	..	..	100.7	2.2	..	..
Mar	99.7	−0.1	..	..	101.5	0.8	..	..
Apr	99.0	−0.7	..	..	99.7	−1.8	..	..
May	99.3	0.3	..	..	98.4	−1.3	..	..
Jun	99.1	−0.2	−0.2	..	97.8	−0.6	−1.6	..
Jul	99.4	0.3	−0.3	..	99.1	1.4	−2.2	..
Aug	99.6	0.1	–	..	100.7	1.6	−0.7	..
Sep	100.2	0.7	0.6	..	99.8	−0.8	1.2	..
Oct	101.0	0.8	1.0	..	99.7	−0.1	1.7	..
Nov	102.8	1.8	2.0	..	101.7	2.0	1.3	..
Dec	101.5	−1.3	2.0	..	102.4	0.6	1.4	..
1996 Jan	101.1	−0.4	1.5	..	100.0	−2.3	1.3	..
Feb	101.8	0.7	0.1	..	102.1	2.1	1.1	..
Mar	101.9	0.1	−0.2	2.2	104.1	2.0	0.8	1.9
Apr	102.3	0.5	0.2	2.5	103.9	−0.2	2.0	2.7
May	103.2	0.8	1.0	3.1	103.1	−0.8	2.2	3.9
Jun	103.2	–	1.3	3.8	101.4	−1.7	0.7	4.3
Jul	103.9	0.7	1.4	4.2	103.9	2.4	−0.5	4.5
Aug	104.3	0.3	1.3	4.4	102.9	−0.9	−0.9	3.6
Sep	105.1	0.8	1.5	4.7	106.0	2.9	1.4	4.4
Oct	105.4	0.3	1.5	4.7	107.0	1.0	2.4	5.2
Nov	105.1	−0.3	1.4	3.8	106.9	−0.1	3.8	6.2
Dec	103.9	−1.1	0.4	3.0	104.4	−2.3	1.8	4.8
1997 Jan	105.2	1.2	−0.2	2.9	105.7	1.2	0.3	4.3
Feb	106.2	0.9	−0.1	3.6	107.9	2.1	−0.6	4.5
Mar	105.7	−0.4	0.9	4.1	107.1	−0.8	0.7	4.7
Apr	107.1	1.3	1.5	4.3	110.6	3.2	2.7	4.9
May	107.2	–	1.5	4.1	112.7	1.9	3.8	6.1
Jun	107.4	0.3	1.5	4.2	112.7	–	4.7	8.9
Jul	107.6	0.1	1.0	3.8	109.5	−2.8	2.8	8.5
Aug	107.7	0.1	0.9	3.7	111.1	1.4	0.9	8.1
Sep	107.3	−0.4	0.3	3.0	109.9	−1.1	−1.6	5.6
Oct	108.9	1.4	0.5	2.9	111.4	1.4	−0.7	5.2
Nov	108.2	−0.6	0.5	2.8	110.2	−1.1	−0.5	3.6
Dec	108.7	0.4	1.0	3.6	111.3	1.0	0.7	4.6
1998 Jan	109.7	0.9	0.8	3.9	113.7	2.1	0.8	5.7
Feb	109.2	−0.4	1.0	3.9	110.5	−2.8	1.2	5.5
Mar	109.4	0.2	0.8	3.5	112.1	1.4	1.0	4.8
Apr	108.9	−0.5	0.3	2.7	108.4	−3.2	−1.2	1.7
May	109.3	0.4	–	2.4	110.2	1.6	−1.4	0.1
Jun	109.7	0.4	−0.1	1.9	114.2	3.6	−1.0	−0.9
Jul	110.0	0.3	0.5	2.1	111.9	−2.0	1.6	0.4
Aug	109.9	−0.1	0.6	2.1	112.3	0.4	2.3	1.5
Sep	109.9	–	0.6	2.2	113.8	1.3	1.5	2.3
Oct	109.5	−0.4	0.1	1.7	112.9	−0.7	0.8	2.0
Nov	110.0	0.5	−0.1	1.6	111.4	−1.4	−0.1	2.0
Dec	110.5	0.4	0.1	1.3	116.2	4.4	0.8	2.3
1999 Jan	110.6	0.1	0.6	1.4	114.1	−1.9	0.8	2.0
Feb	110.4	−0.2	0.6	1.2	113.0	−0.9	1.6	2.3
Mar	111.5	1.0	0.8	1.3	113.9	0.7	0.1	1.4
Apr	110.9	−0.5	0.5	1.6	114.3	0.4	−0.2	3.0
May	111.7	0.7	0.8	2.0	114.9	0.6	−0.1	3.7
Jun	111.7	–	0.5	1.9	114.8	−0.1	0.9	3.4
Jul	112.3	0.5	0.8	2.0	115.2	0.4	1.1	2.6
Aug	112.8	0.5	0.8	2.2	114.4	−0.7	0.4	1.8
Sep	112.2	−0.5	0.9	2.3	114.0	−0.3	−0.1	1.7
Oct	112.3[†]	0.1[†]	0.5	2.5[†]	114.0	−0.1[†]	−0.8[†]	1.0
Nov	112.8	0.4	0.2	2.4	114.9	0.8	−0.4	1.4

1 Indices are valued at basic prices, which exclude taxes and subsidies on production.
2 Estimates cannot be regarded as accurate to the last digit shown.
3 Any apparent inconsistencies between the index numbers and the percentage changes shown in these tables are due to rounding.
4 The equivalent quarterly index series, released electronically as part of the GDP(O) estimates, have identifiers EWAD (motor), EWAE (wholesale), EWAF (retail) and GDQC (IoD). For further information about obtaining

Sources: Office for National Statistics;
For further information on these data please telephone 01633 813388, fax 01633 812575, or email hugh.skipper@ons.gov.uk

2 IOD: Index of Distribution (PROTOTYPE) continued

Index numbers of gross value added at basic prices[1,2,3]

1995=100, seasonally adjusted

	Component series							
	SIC51: Wholesale [4]				SIC52: Retail [4]			
		percentage change				percentage change		
	Index	month on month	latest 3 months on previous 3 months	latest 3 months on same 3 months a year ago	Index	month on month	latest 3 months on previous 3 months	latest 3 months on same 3 months a year ago
	FVVP	FVVE	FVVF	FVVG	FVVQ	FVVH	FVVI	FVVJ
1995 Jan	98.8	..	..	..	98.2	..	..	..
Feb	99.9	1.2	..	..	99.4	1.2	..	..
Mar	98.8	-1.1	..	..	99.8	0.4	..	..
Apr	99.0	0.2	..	..	98.7	-1.1	..	..
May	99.4	0.4	..	..	99.5	0.8	..	..
Jun	98.6	-0.8	-0.2	..	100.1	0.6	0.3	..
Jul	99.0	0.4	-0.3	..	100.0	-0.1	0.6	..
Aug	100.1	1.1	0.1	..	98.6	-1.3	0.2	..
Sep	100.7	0.6	0.9	..	100.0	1.4	0.1	..
Oct	100.7	–	1.5	..	101.7	1.8	0.2	..
Nov	103.2	2.4	2.3	..	102.9	1.2	2.0	..
Dec	101.7	-1.5	1.9	..	100.9	-1.9	2.3	..
1996 Jan	101.5	-0.1	1.6	..	101.1	0.2	1.5	..
Feb	100.3	-1.2	-0.4	..	102.9	1.8	0.1	..
Mar	101.3	1.0	-0.8	1.9	101.5	-1.4	–	2.7
Apr	101.4	0.1	-1.1	1.7	102.5	1.1	0.6	3.0
May	102.3	0.9	0.5	2.6	104.0	1.4	1.0	3.3
Jun	102.5	0.2	1.0	3.1	104.5	0.4	1.8	4.2
Jul	103.0	0.5	1.6	3.6	104.7	0.2	2.1	4.5
Aug	102.6	-0.4	1.0	3.5	106.3	1.5	2.4	5.6
Sep	103.3	0.7	0.9	3.0	106.4	0.1	2.1	6.3
Oct	103.8	0.5	0.6	2.7	106.3	-0.2	1.9	6.2
Nov	102.8	-0.9	0.6	1.7	106.3	0.1	1.1	4.7
Dec	102.1	-0.7	–	1.0	105.3	-0.9	0.1	4.0
1997 Jan	103.6	1.5	-0.3	0.7	106.4	1.0	-0.3	4.3
Feb	103.7	0.1	-0.1	1.9	107.7	1.2	0.1	4.8
Mar	102.0	-1.6	0.2	2.1	108.5	0.7	1.5	5.6
Apr	103.9	1.8	0.4	2.2	108.6	0.1	2.1	5.8
May	102.9	-1.0	-0.2	1.3	108.7	0.1	2.0	5.8
Jun	103.4	0.5	0.3	1.3	108.9	0.2	1.1	4.9
Jul	104.0	0.6	0.2	0.8	110.0	0.9	0.9	4.6
Aug	103.7	-0.4	0.7	1.0	110.0	–	1.0	4.2
Sep	104.2	0.5	0.5	1.0	109.1	-0.8	0.9	3.7
Oct	104.5	0.3	0.7	0.9	111.7	2.4	1.0	3.7
Nov	104.4	-0.1	0.7	1.1	110.8	-0.8	0.8	3.9
Dec	104.4	-0.1	0.5	1.5	111.5	0.6	1.5	5.0
1998 Jan	105.0	0.6	0.5	1.7	112.2	0.6	1.1	5.1
Feb	105.9	0.9	0.7	1.9	111.6	-0.5	1.1	4.9
Mar	105.1	-0.8	0.9	2.2	112.1	0.5	0.6	4.1
Apr	105.4	0.3	0.8	2.2	112.2	0.1	0.5	3.5
May	103.6	-1.7	-0.4	1.7	114.0	1.6	0.9	3.9
Jun	104.1	0.5	-1.0	0.9	112.9	-1.0	1.0	4.0
Jul	105.0	0.9	-1.2	0.8	113.7	0.8	1.4	4.0
Aug	104.9	-0.1	–	0.9	113.4	-0.3	0.5	3.4
Sep	104.5	-0.4	0.4	0.8	113.2	-0.2	0.3	3.4
Oct	103.8	-0.6	0.1	0.2	113.2	–	-0.3	2.7
Nov	104.7	0.8	-0.3	-0.1	114.2	0.9	0.2	2.7
Dec	104.9	0.2	-0.3	–	113.1	-1.0	0.1	2.0
1999 Jan	104.3	-0.6	0.2	–	114.9	1.6	0.7	2.4
Feb	104.3	–	0.2	-0.6	114.9	-0.1	0.7	2.3
Mar	105.3	1.0	0.2	-0.7	116.1	1.1	1.6	3.0
Apr	104.3	-0.9	–	-0.8	115.4	-0.6	1.2	3.1
May	104.5	0.2	0.2	–	116.8	1.2	1.6	2.9
Jun	104.5	–	-0.2	0.1	116.8	–	0.9	2.9
Jul	105.7	1.2	0.3	0.7	116.9	0.1	1.2	2.9
Aug	106.8	1.0	0.9	1.0	117.6	0.6	0.9	3.3
Sep	105.6	-1.1	1.5	1.2	117.5	-0.1	0.9	3.4
Oct	105.0†	-0.6†	0.9†	1.4†	118.2†	0.6†	0.8	4.0
Nov	105.6	0.5	-0.3	1.1	118.4	0.2	0.8	4.0

For footnotes see table 1 of this article.

Sources: Office for National Statistics;
For further information on these data please telephone 01633 813388, fax 01633 812575, or email hugh.skipper@ons.gov.uk

Revisions analysis of initial estimates of key economics indicators and GDP components

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Introduction

This article sets out the results of the latest revisions analysis work by the Office for National Statistics (ONS), updating the articles published in April and August 1996; sets out some current challenges and asks questions about readers' use of the results. Readers' comments are welcome.

The first article in this series was published in the May 1992 issue of *Economic Trends*. That article reported the results of the analysis of revisions to initial estimates of headline ONS official statistics, based on 10 years of data up to the end of 1991. It was entitled 'Testing for bias in initial estimates of key economic indicators'. The set of economic indicators analysed were those specified in the CSO's Agency Framework Document (henceforth referred to as 'the Framework Document') in November 1991. Since then the analysis has been successively updated and extended.

As in the previous articles, we analyse revisions to initial estimates of key indicators as defined in the Framework Document. The key economic indicators are all defined as percentage growth rates or percentages of gross domestic product (GDP) or of some other appropriate denominator, so that they are comparable in all periods, regardless of changes in the size of the economy. The following definition of bias is used: ***revisions are considered to be biased if the mean revision is significantly different from zero.***

A number of recent articles in *Economic Trends* have covered improvements, and plans for further developments, which relate to statistics analysed here and will be of interest to readers. For example, 'Improving the quality of the producer price index' (December 1998); 'Annual coherence adjustments in the national accounts' (October 1999); 'Publishing sampling errors for business surveys' (November 1999). An article in February 2000 discussed plans for further improvements to economic statistics in more detail.

The ONS recently carried out a study for the European Statistical Office (Eurostat) of reliability and quality indicators for National Accounts aggregates; further work building on this study is planned and will involve both ONS and other European states.

This article analyses data published before the move to new international national accounting standards in the second half of 1998. The new national accounting standards are the European System of Accounts, 1995 (ESA95) and the IMF Balance of Payments Manual, fifth edition, 1993. These new standards have brought in new terminology, new data series and made at least slight changes to the definitions of many existing series. In view of this, we have generally used the "old" terms in this article since the analysis here, in many cases back to the 1970s, is of variables defined under the old standards.

Summary of Results

Whilst previous articles have considered either key economic indicators or components of GDP, this article presents the latest results for both. There are eleven key economic indicators altogether. Revisions to initial estimates of seven of these indicators showed no significant evidence of bias over any of the latest 3, 5 or 10-year periods (Table 1). These seven were:

- GDP (preliminary estimate compared with month three estimate, at constant prices);
- GDP (month three estimate compared with six months later, at constant prices);
- GDP (revisions after three years to four quarter per cent growth at current prices);
- index of production;
- producer price index;
- balance of trade in goods;
- current balance (revisions in the short-term).

Revisions to initial estimates of four of the key economic indicators showed some evidence of statistically significant bias over recent years:

- Retail sales;
- GDP (revisions after three years to the four quarter per cent change at constant prices);
- current balance (long term revisions);
- PSNCR (PSBR under the old terminology).

The absolute mean revisions over the 3-year periods were less than those over 10 years (except for the small revisions to the PSNCR), suggesting a recent improvement. The most noticeable improvement was to the absolute mean revision to GDP (revision to month three estimate after 6 months) which progressively declined from 0.23 per cent (over the last ten year period) to 0.16 percent (for the last five year period) and then 0.13 per cent (three year period).

We also examine revisions according to the economic cycle. Revisions to the initial estimates of the index of production, producer prices index, retail sales, PSNCR and some of the GDP indicators showed evidence of statistically significant bias during expansion phases. However, such statistically significant biases were not necessarily of economic significance - for example, the mean revision to the producer price index was just +0.02 index points.

The detailed results are shown in Tables 1 and 2 for key economic indicators and Tables 3 to 7 for components of GDP. The results are discussed in more detail below.

Quality in statistics

The concept of the quality of statistics is multi-faceted. A general framework within which to consider quality attributes has been developed within the European statistical system. This scheme, developed by a working group led by Eurostat on 'Assessing quality in business statistics', defines quality in terms of six components:

- the relevance of the statistical concepts;
- the accuracy of the estimates;
- timeliness and punctuality in disseminating results;
- the accessibility and clarity of the information;
- the comparability of the statistics; and
- coherence.

Within this framework, accuracy is generally considered to be a key measure of quality. The key components of accuracy are:

- Sampling errors.
- Non-sampling errors:
  - frame errors;
  - measurement errors;
  - processing errors;
  - non-response errors;
  - model assumption errors.

A similar framework for non-sampling errors was developed by a GSS task force. Examples of the measurement of such errors are given in GSS Methodology Series No. 14 *Measuring and improving data quality*.

Analysis of revisions provides an opportunity to test and monitor one component of the quality of the initial estimates of economic indicators. The ONS analyses the extent of revisions to initial estimates of a variety of key economic indicators.

Data Sources

A number of improvements to economic statistics in the last ten or so years are referred to in this article. The key changes are set out here. Following the recommendations in the Pickford Report, the Central Statistical Office (CSO) launched in 1989 an extensive programme of improvements to data sources and methodology. The Chancellor's Initiatives of 1991 and 1992 provided the resources for improvements to short period statistics. These improvements included:

- wider use of statutory data collection powers;
- increasing the sample size of the monthly sales inquiry, which feeds into the index of production;
- expanding the sample size of the monthly retail sales inquiry;
- extending the quarterly stockbuilding (now termed 'inventories') inquiry to cover retail, motor trades and construction industries;
- introducing monthly and quarterly turnover inquiries for service industries, initially to cover the wholesaling, catering and motor trades industries;
- new overseas trade in services inquiry;
- new quarterly profits inquiry.

In addition, the ONS has made changes to the presentation of GDP statistics, which have reduced revisions, and these are described later.

These improvements to business surveys may have reduced the revisions to early estimates that are based on these surveys. Any such effects will be present in the three and five-year periods shown in the tables. Analyses over a longer time period will be based on a lot of data relating to first estimates made before 1989, and so any effects of the improvements to business surveys are likely to be much less marked.

Methodology

Revisions to survey and other data become necessary for at least four main reasons:

- receipts of further, more comprehensive, data;
- changes in estimation or other procedures;
- replacement of judgmental adjustments with more source data;
- changes to seasonal factors.

The difference between the first and a later estimate gives an indication of the magnitude of one component of the error in the first estimates. As in the previous articles, we analyse revisions to initial estimates of key indicators as defined in the Framework Document. The key economic indicators are all defined as percentage growth rates or percentages of GDP or of some other appropriate denominator, so that they are comparable in all periods, regardless of changes in the size of the economy. The following definition of bias is used: ***revisions are considered to be biased if the mean revision is significantly different from zero***. We have to allow for the fact that the average revision over some finite period may be non-zero simply through random effects. So we need to test whether an observed mean differs from zero by more than could be expected due to random effects, in statistical terminology, whether the mean revision is significantly different from zero.

The most common statistical test of this kind is the t-test, which is based on the ratio of the mean revision to an estimated standard error of the mean. The t-test requires the conditions of normality and the independence of successive values. For the data studied, the revision values generally seemed to follow a normal distribution, although serial correlation coefficients frequently indicated that successive values were not independent. Lack of independence is a particular problem for series defined with three-month on three-month changes. In this context, we considered that the standard t-test would not be directly applicable to test the significance of mean revisions, as the t-test is likely to overstate the significance of the results. Therefore, for all series with a positive coefficient the t-values were calculated after allowing for the serial correlation. For series with negative coefficient of correlation, raw t-values were used to test the significance of the means. The formulas used are given in the technical note.

Technical Note

In the first few articles (published 1992-94) the Cochrane-Orcutt procedure was used to allow for significant serial correlation when fitting a regression model

$$y_t = \mu + \beta x_t + \varepsilon_t$$

where the errors (ε_t) follow an auto-regressive pattern of order one, i.e. first order serial correlation

$$\varepsilon_t = \alpha \varepsilon_{t-1} + u_t$$

However, in the application to mean revisions there is no explanatory variable (X_t) and the "regression" is only on the mean. There is really no need to apply to Cochrane-Orcutt procedure because one is effectively fitting an autoregressive model with a possibly non-zero mean. For such a model of order one (AR(1)) it can be shown (Priestly, *Spectral Analysis and Time Series*, 1981, p.320) that the variance of the sample mean is given (approximately) by

$$\sigma^2 (1 + \alpha) \,/\, n (1 - \alpha)$$

where σ^2 denotes the variance of the usual process. When α is zero (no serial correlation) this formula reduces to the usual formula, namely σ^2/n. The equivalent number of independent observations will be

$$n (1 - \alpha) \,/\, (1 + \alpha)$$

The variance of the sample mean is estimated (Box and Jenkins, *Time Series Analysis, Forecasting and Control*, 1976, p.195) by

$$s_{\bar{x}}^2 = s^2 (1 + \hat{\alpha}) \,/\, n (1 - \hat{\alpha})$$

where s^2 denotes the usual estimate of variance and $\hat{\alpha}$ is estimated as equal to the first order serial correlation of the revisions.

A corrected t-statistic, therefore, would be calculated directly (without needing to use the Cochrane-Orcutt procedure) by

$$t = \text{mean revisions} \,/\, s_{\bar{x}}$$

with

$$n^* = n (1 - \alpha^2) \,/\, (1 + \alpha^2)$$

degrees of freedom (the equivalent number of independent observations for estimating variance) if the null hypothesis, that the mean revision is zero, is true. (Priestly, 1981, p.327).

This improved method allows for any positive serial correlation in the revision series. If the serial correlation is negligible there will be a negligible adjustment of the t-value.

As well as considering which tests to apply, it was necessary to consider the periods over which they should be applied. The general rule is that the greater the number of values on which a test is based the more robust is the test. However, since the methods of compiling the national accounts have been changed in many ways, as have the data sources and the structure of the economy, testing over a long period means that the implicit assumption that any bias is constant may be invalid. For quarterly observations this is a particular problem, since even ten years of data will give only forty observations, which remains rather a small sample for a t-test and at the same time ten years will certainly span many important changes in the methods used to construct the accounts. It was thus decided that the analyses would be carried out over periods of varying length to explore the effects of changes in method as well as the trend of revisions over the periods. As in previous articles, the tables at the end of this article show a variety of statistics, including mean revision and standard error and the t-test value for revisions to initial estimates of each indicator for periods of three, five and ten years. As simple indicators, the percentages of observations for which revisions were positive and negative are also shown.

In addition to the key economic series specified by the Framework Document, ONS also examine the revisions to growth rates of components of GDP. This analysis was first published under the title 'Testing for bias in initial estimates of the components of GDP', in *Economic Trends*, February 1993.

The ten-year analyses hide some interesting results and so we also test for the effects of economic cycles. The expansion and contraction phases have been defined respectively as the period from a trough to a peak and from a peak to a trough. The cycles are identified from the coincident index of the cyclical indicators published in issues of *Economic Trends* for the earliest years (consistent with previous studies) and by constant price GDP growth rates for more recent years (as ONS ceased to publish the coincident index in 1997). The individual revision values were then associated with either of the two phases according to the quarter or the month of the initial estimate, thus obtaining two separate revisions series for each variable. Separate means of the revisions were calculated for the expansion and the contraction phases and t-values, corrected for serial correlation, were obtained for each separate series to test for any evidence of statistical bias due to the economic cycles.

Detailed Results

This section considers the results of the revisions analysis for initial estimates of:

- different measures of GDP, over different periods;
- different components of GDP;
- other key economic series.

The ONS has made changes to the presentation of GDP statistics in recent years to improve the quality of the short-term estimates of GDP change. Previously, the ONS published a GDP figure for each of the three measures of GDP, as well as a fourth central estimate calculated as the mean. It had long been recognised that the output measure of GDP was the best short-term indicator. In order to reflect this and to provide the best advice to economic analysts the ONS moved to publishing one measure of GDP (which largely reflects the short-term movement of the output component) and reduced the frequency with which long runs of revisions were made. The other GDP measures that are more erratic in the short-term are constrained to the output measure by alignment adjustments. Consequently, growth rates of GDP have been less prone to large revisions in the short-term as erratic components within the income and expenditure measures are offset by the alignment adjustments. This can be seen in the chart "GDP ((ii) month three at constant prices)" below.

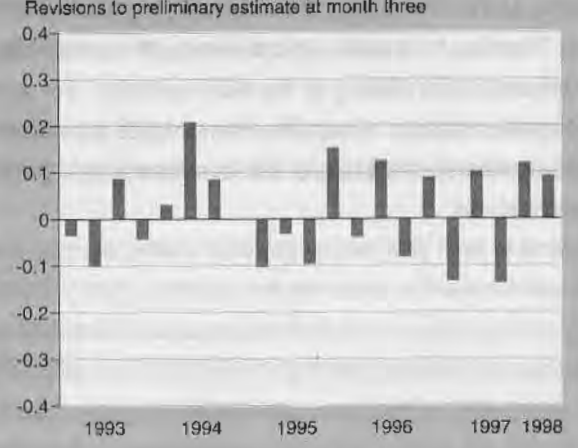
GDP (revisions over the short-term, at constant prices)

This measure of economic growth is looked at in two ways. Firstly, the revisions to the preliminary estimate (calculated by comparing it with the month three estimate) - previous articles compared the six and ten week estimates, which are no longer produced. Secondly, by comparing the month three estimate with the equivalent figure published six months later. These GDP figures are published in the Gross Domestic Product Preliminary Estimate First Release, *Economic Trends* and the *UK Economic Accounts (UKEA)*.

Chart 1

GDP ((i)preliminary, at constant prices)

quarter on quarter per cent change

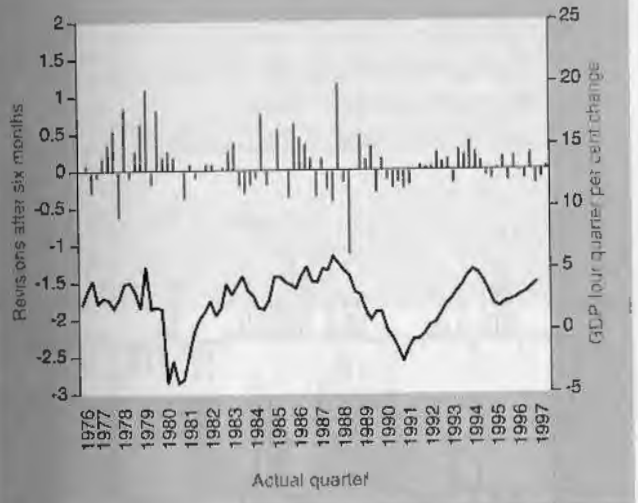


The results of the research for the revisions to the preliminary (or month one) estimate of GDP growth can only be looked at over a five year revision period, since this measure of GDP was first published in April 1993. It is compared with the month three estimate of GDP growth (published about two months later), which is based on more comprehensive and detailed data. The mean revisions to it are small and the split of the revisions between positive and negative ones over both the latest three and five-year periods are equal - 50 per cent of each - see Chart 1 above. The detailed statistics are shown in Tables 1 and 2. Another article published in this volume: 'How the preliminary estimate of GDP is produced' may be of interest to readers.

Chart 2

GDP ((ii) month three, at constant prices)

quarter on quarter per cent change



The chart above shows clearly that revisions in the short-term to the month three estimate in the 1990s have been at a lower level than those at the end of the 1980s, which in turn were smaller than those in the late 1970s. Mean revisions over the three standard periods of analysis have generally fallen, compared to the 1996 analysis, as have their standard deviation. No evidence of significant bias was found in any period. However, when analysed in expansion phases, revisions after six months to this measure of GDP showed evidence of a small but statistically significant bias, with a mean upward revision of 0.1 percentage points. The line on the chart shows constant price GDP (four quarter) growth rates to indicate economic cycles.

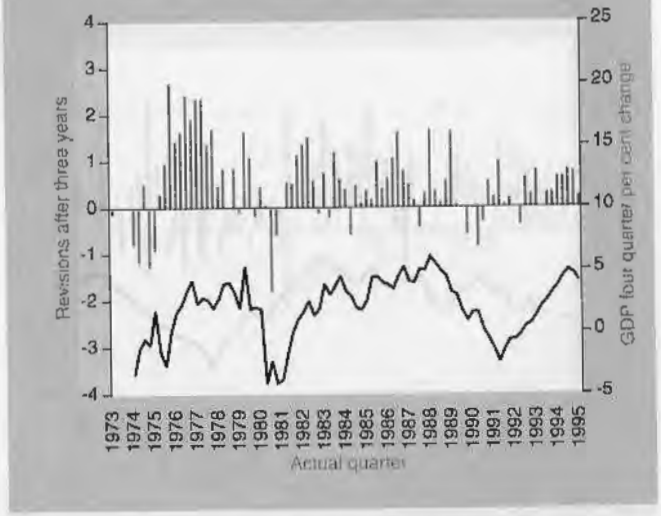
GDP (at constant prices: longer-term revisions)

This section considers revisions to the four-quarter growth rates of GDP from the initially published figure to that released three years later. The latest data analysed relate to those initially published in 1995. They are published in Table A1 of *UKEA* and in a first release. (Data published from the 1998 quarter 2 edition onwards are based on ESA95 definitions and so are not included in this analysis).

Chart 3

GDP (long term at constant prices)

four quarter per cent change



The chart illustrates the decreasing trend in the size of the revisions, from the large revisions during the 1970s 'boom' to smaller ones in the 1990s. Over the most recent 3, 5 and 10 year periods there continues to be evidence of bias in revisions to the initial estimates that is statistically significant. At least 80 per cent of the revisions were positive (i.e. upwards) in all three periods, although the range of the revisions has narrowed for the 3 and 5-year periods. The mean revisions over the latest five and ten-year periods has fallen, from those in the 1996 article, as have the standard deviations over all three periods.

The 1996 article found evidence of revisions' bias that was statistically significant in this measure of GDP in the economy's expansion phases, but no such evidence for contraction phases. These results were also found by this latest research, which extended the period analysed, by two years, to 1995. (Tables 1 and 2).

GDP (current prices: longer-term revisions)

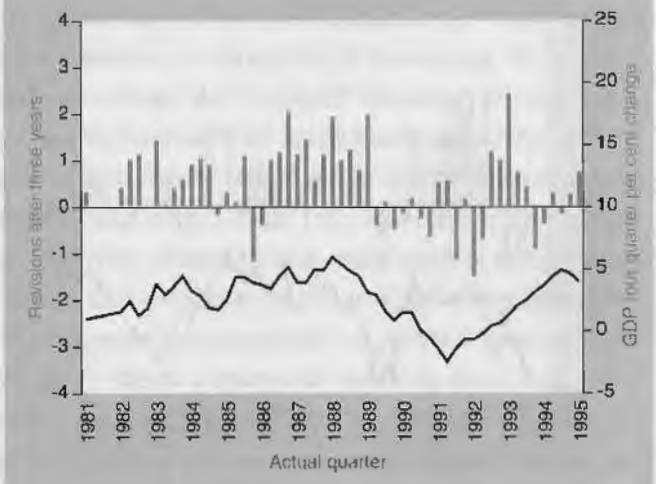
For this measure of economic growth the revisions analysed are those after three years to the four-quarter percentage growth rate. The last revision analysed relates to that for Q1 1995 published in the quarterly GDP First Release in June 1998. Similar, ESA95-based figures are currently published in Table 2.1 of *Economic Trends* and Table A1 of *UKEA*. Although long-term revisions to GDP at constant prices can be analysed from the 1970s onwards, the equivalent analysis for GDP at current prices commences in 1985.

There was no evidence of significantly biased revisions, found in this latest research for this indicator over 3, 5 or 10 years (Table 1).

Chart 4

GDP (long term at current prices)

four quarter per cent change



The line on the chart shows constant price GDP (four quarter) growth rates to indicate economic cycles. Statistically significant evidence of bias in the revisions was found during expansion phases of the economy, with a mean revision of 0.81 percentage points. However, there was no significant evidence of biased revisions during contraction phases (Table 2). Similar results were found in the previous study.

Components of GDP

In addition to the usual factors leading to revisions (described earlier), particular issues on GDP are receipt of later data; methodology changes; statisticians' judgment and the need to balance the three measures of GDP. The latter was dealt with in an article 'Annual coherence adjustments in the national accounts' in *Economic Trends* in October 1999.

This analysis of GDP components considers revisions after three years, hence the latest figures that can be covered relate to estimates of four-quarter GDP growth rates into 1995. The improvements incorporated into the initial estimates of quarterly growth during the early 1990s, brought about following the Pickford report and through the Chancellor's Initiatives, thus come in towards the end of the period analysed. This analysis of revisions to components of GDP does not include much of the improved data (since the most recent data analysed is that first published at the start of 1995). The real extent of the improvements will not really impact on the analysis in this section until 2002-03, although some graphs show graphically that revisions to data from 1992 onwards have been smaller.

Expenditure components

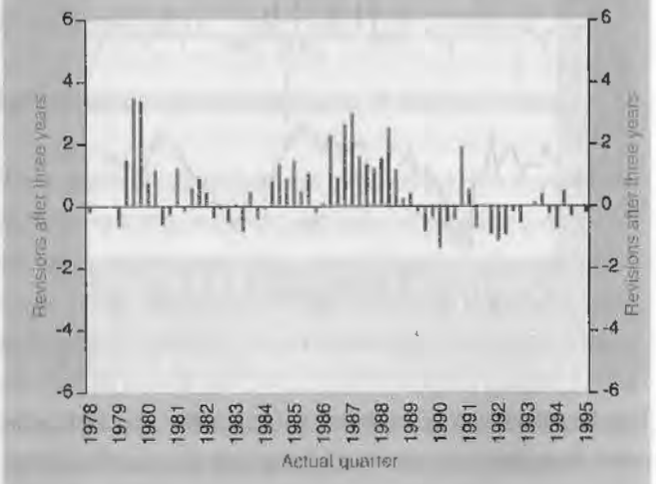
Estimates of the individual expenditure components of GDP are published in Table A2 of *UK Economic Accounts (UKEA)*. Data series were analysed prior to the changes associated with the move to the new international standards (ESA95 etc) in the second half of 1998, and thus the terms then in force are used in this article. (For example, the new systems' equivalent to income from employment is 'compensation of employees'.)

At current prices, revisions to initial estimates of none of the expenditure components of GDP were found to show significant evidence of bias over five or ten-year periods (Table 3).

Chart 5

Consumer's expenditure at current prices

four quarter per cent change



Mean revisions and standard deviations for revisions to initial estimates of consumers' expenditure at current prices were lower for the recent periods when compared with the 1996 article and there was no significant evidence of bias. Revisions during the 1990s so far are smaller than those of the 1980s. Under the new international standards this indicator is called 'households' final consumption expenditure'.

The government final consumption (at current prices) and GDGCF (current prices) components also show improvements since the standard periods were last analysed in 1996. The revisions to GDFCF during the 1990s have been smaller than revisions were during the late 1980s expansion. When a phase analysis is considered, revisions to both components show evidence of statistically significant upward bias in expansion phases of the economy (Table 7).

Chart 6

Government final consumption at current prices

four quarter per cent change

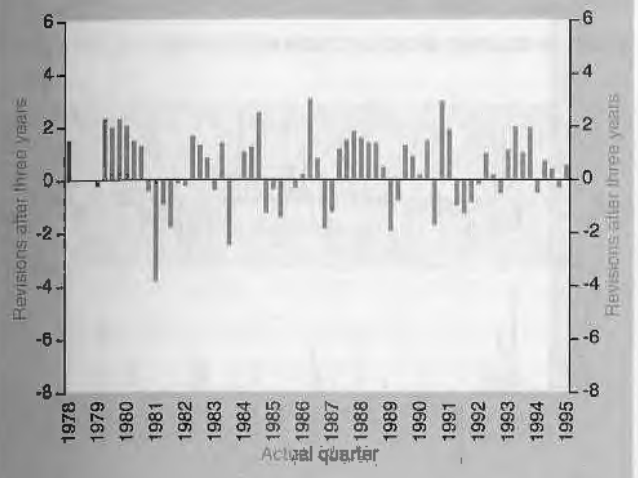


Chart 8

Imports at current prices

four quarter per cent change

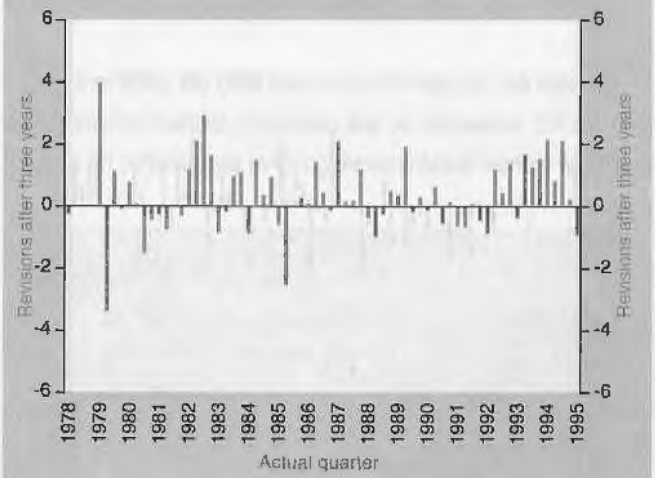


Chart 7

GDFCF at current prices

four quarter per cent change

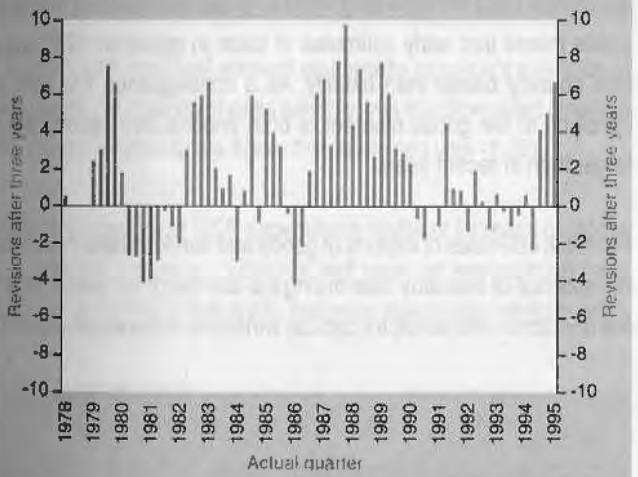
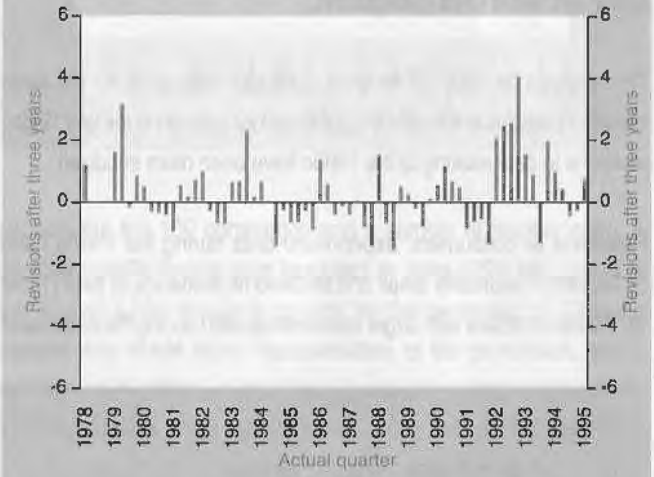


Chart 9

Exports at current prices

four quarter per cent change



During the five and ten year periods revisions to initial estimates of imports (of goods and services) show no evidence of bias. When the last 17 years are divided into expansion and contraction phases, there is some evidence of bias during the expansion phases - see Table 7 (mean revision=+0.57).

Revisions to initial estimates of exports at current prices show no significant evidence of bias. Revisions in 1993 were affected by the introduction of the EU-wide system for measuring trade in goods - INTRASTAT - and so the first estimates in that year were less soundly based than usual.

For the initial estimates of constant price components of the expenditure measure of GDP mean revisions (over five and ten-year periods) tend to be smaller than when this study was last published. However, there is some evidence of significant bias over the most recent periods for two components: general government final consumption (5 and 10 years) and gross domestic fixed capital formation (GDFCF) (see Table 4). General government final consumption is a statistic for which the methodology has recently changed considerably. For half of government it is now calculated from output rather than input measures. (See article in *Economic Trends* in October 1998: 'Measuring the output of non-market services'). Thus no conclusions can be drawn about whether revisions to it may still be biased.

Chart 10

Government final consumption at constant prices

four quarter per cent change

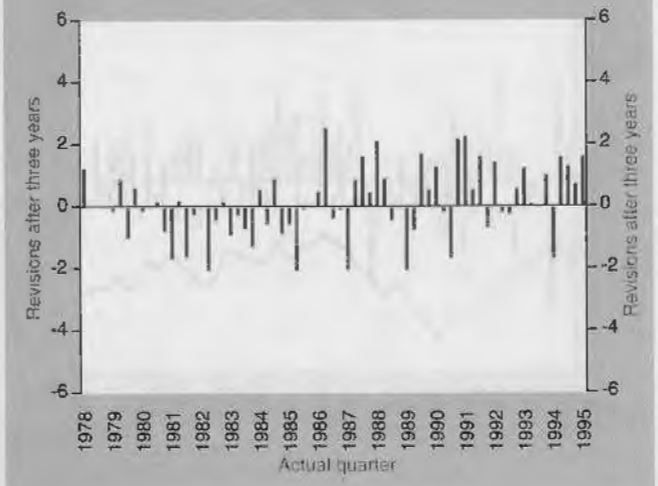
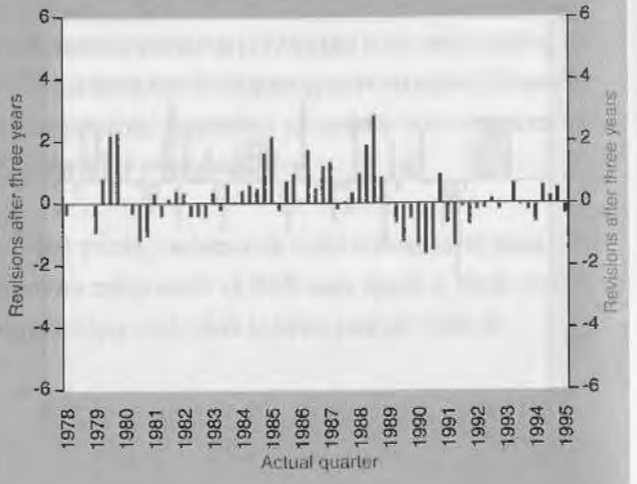


Chart 12

Consumers' expenditure at constant prices

four quarter per cent change



Revisions to gross domestic fixed capital formation show some evidence of upward bias when first published over the standard ten-year period, but not over the most recent five years (chart below). This indicator is termed 'gross fixed capital formation' under ESA95 and in the latest ONS publications.

The analysis for GDFCF below is strongly influenced by the large revisions upwards to the data first published for quarters in the late 1980s; revisions to data relating to the 1990s have been more subdued.

Revisions to consumers' expenditure data during the 1990s have so far been historically small and showed no evidence of bias (Table 4). These compare with larger revisions upward during the expansion of the late 1980s and subsequent large revisions downward during the following contraction phase.

The introduction of the EU-wide INTRASTAT reporting system, at the start of 1993, for recording trade in goods between EU member states meant that early estimates of trade in goods in 1993 were less soundly based than usually. As a consequence the size of revisions to the goods element of both imports and exports were larger than in recent years.

For initial estimates of exports of goods and services data there was no evidence of revisions' bias during the last five or ten years. When the revisions were tested for cyclical variations in the economy, they

Chart 11

GDFCF at constant prices

four quarter per cent change

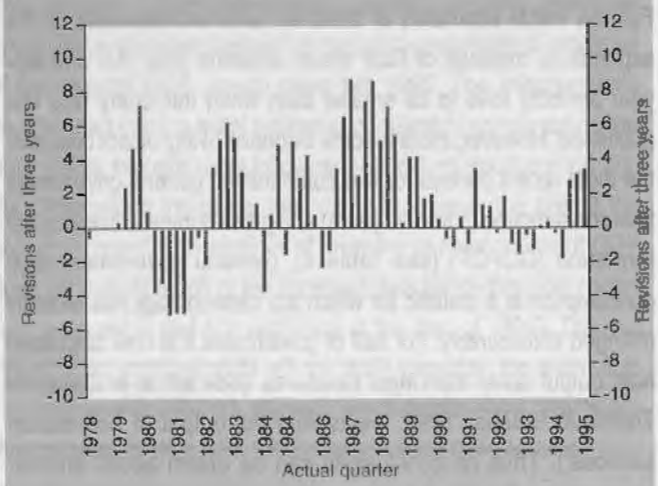
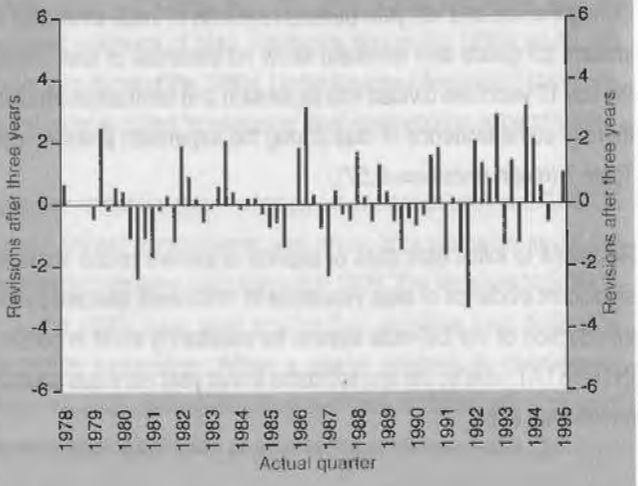


Chart 13

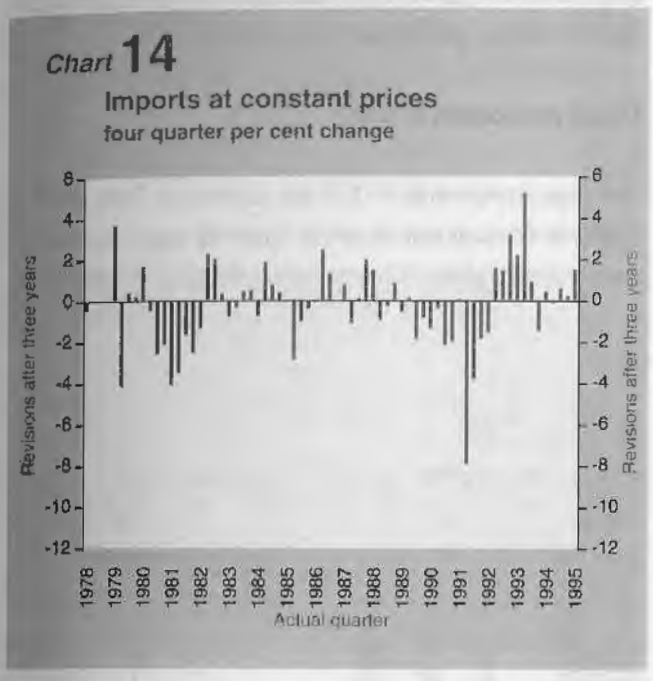
Exports at constant prices

four quarter per cent change



showed significant evidence of bias during expansionary phases (mean revision to the four quarter per cent change=+0.53).

Like the exports data, revisions to the imports figures showed no evidence of bias in the last five or ten years. When a longer period was split into the phases in the economic cycle, revisions to imports



(of goods and services) showed statistically significant evidence of bias during contraction phases and this was in a downward direction (the mean revision to the figure first published was -1.16).

Other components of GDP expenditure (value of increase of stocks and works in progress, subsidies and taxes on expenditure) have not been included in this study, nor were they in the previous one.

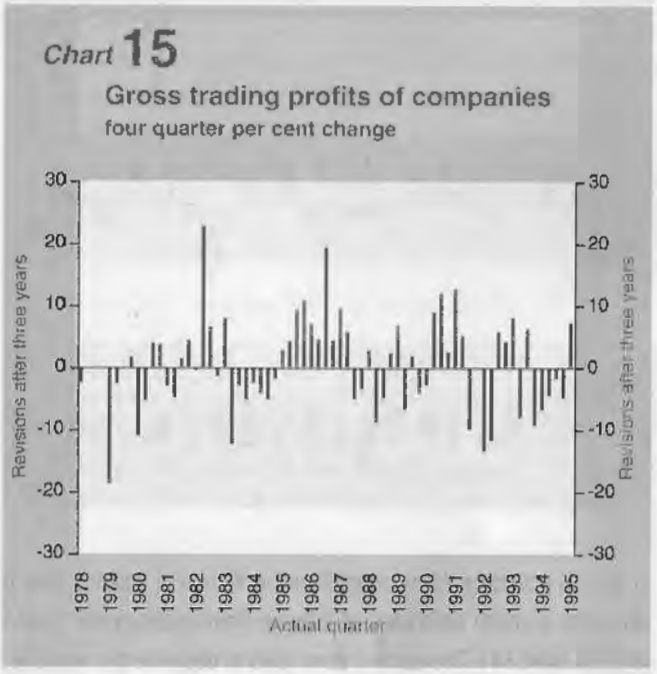
Income components

Estimates of the individual income components of GDP are published in table A3 of *UKEA* and elsewhere. (In issues of *UKEA* published from quarter 2 1998 onwards, components are calculated using the new international standards.) The detailed results in this article are given in Tables 5 and 7.

The components which contributed most to the overall revisions to the income measure of GDP were other income (sum of income from self-employment, imputed charge for non-trading capital consumption and rent) and gross trading profits of companies. Under ESA95 income from self-employment is split between mixed income (income of sole traders) and gross trading profits of corporations (partnerships); whilst rental income and gross trading profits are combined and the new series is referred to as 'gross operating surplus' of corporations.

Gross Trading Profits is a series that is subject to large revisions: from -13.58 to +19.47 percentage points during the 10 year period, although the range narrows to -13.58 to +12.74 for the most recent five year period. However these revisions did not have a significant t-value, so there is no significant statistical evidence of bias.

During the 1990s the ONS has worked to improve the collection of data from non-financial companies and oil companies. Efforts have focused on achieving an evolving representative sample where we

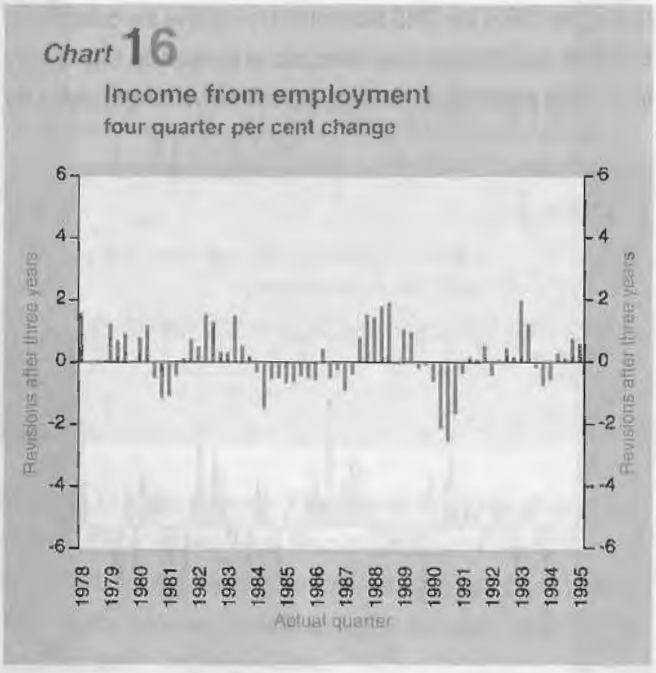


capture the top 100 companies and a sample of smaller ones. A quarterly profits inquiry was launched in June 1991 and aimed at the largest 1,500 company groups. At the beginning of 1996 the sample was made more representative of the population, which further improved the quality of the estimates from that date onwards. The ONS now receives returns from 1,600 non-financial companies and the major oil companies. The sample size is kept under continuous review and ONS is presently considering extending the sample to enhance the quality and integrity of the quarterly data.

In recent years, at least back to 1994, the estimates from the quarterly returns have suggested some understatement from the annual returns we subsequently receive from the full census of non-financial companies which are collected by the Inland Revenue. Because of this possible bias in the early estimates of profits growth ONS receive from the quarterly inquiries, the 1998 data were adjusted upwards also (at *Blue Book* 1999 Inland Revenue estimates were only available for 1997.) Given the results in this latest analysis consideration is being given to adjusting the ONS inquiry results before their inclusion in quarterly national accounts' estimates. For financial companies, a number of quarterly income and expenditure

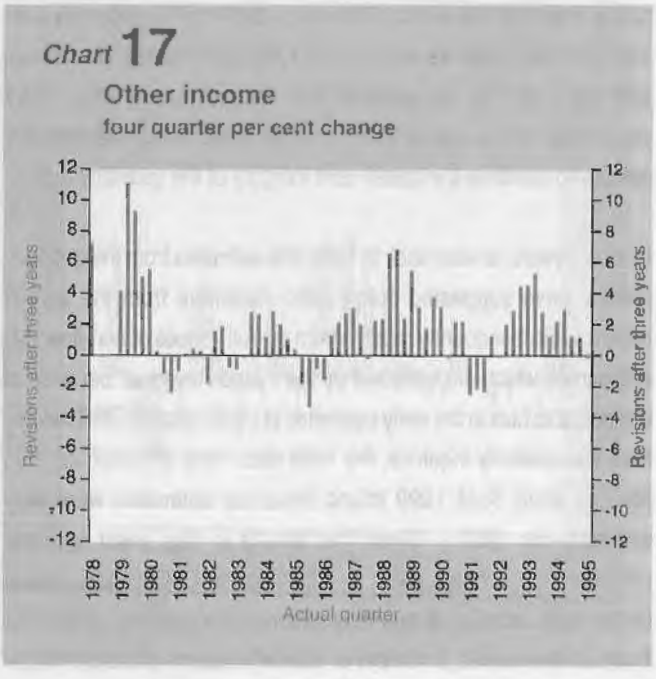
inquiries were launched in 1991/92, thus extending the collection of profits data in that sector.

The mean revisions to income from employment were close to zero and t-values were insignificant (Table 5). During expansion phases



in the UK economy there is significant evidence of upward bias in revisions to initial estimates of income from employment (mean revision is +0.54). The current term used to describe this variable, as defined under ESA95, is 'compensation of employees'.

Revisions to other income are not biased in the most recent period (five years) but do show significant evidence of bias over the last

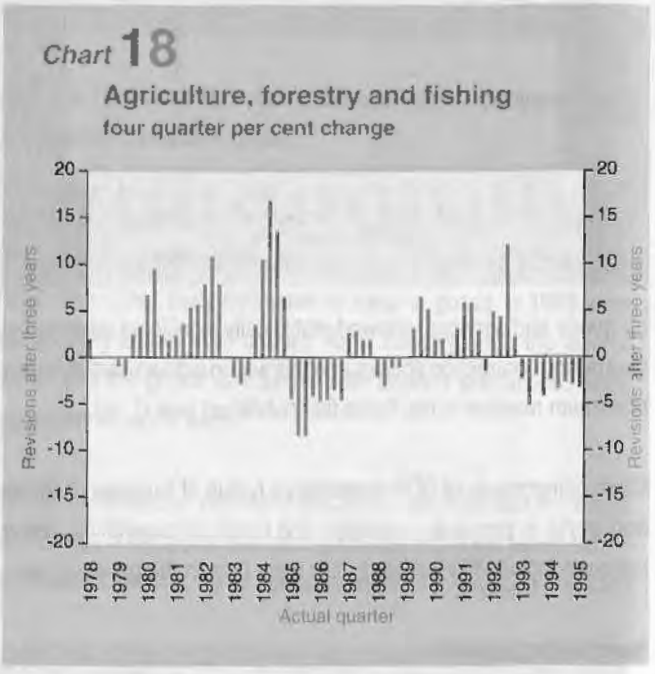


ten years. They also show upward bias during expansion phases in the UK economy.

The following components have not been included in this study (nor were they in the 1996 study): firstly, gross trading profits ('gross operating surplus' in ESA95 terminology) of public non-financial corporations and general government; secondly, stock appreciation (called 'inventory holding gains' under ESA95).

Output components of GDP

The output components of GDP are published in Table A4 of *UK Economic Accounts* and elsewhere. Quarterly output by industry is measured and published only as index numbers at constant prices.



The component of output that showed the highest revisions in both the 5 and 10-year periods was agriculture, forestry and fishing. However, this component is a very small part of total GDP and revisions to it were evenly divided into positive and negative ones and did not show significant evidence of bias (Table 6).

The only output component for which revisions show statistically significant evidence of bias is construction, and then only over the five year period (ending in the first quarter of 1995). For that period 95 per cent of the revisions to initial estimates of construction growth were positive.

Chart 19
Construction
four quarter per cent change

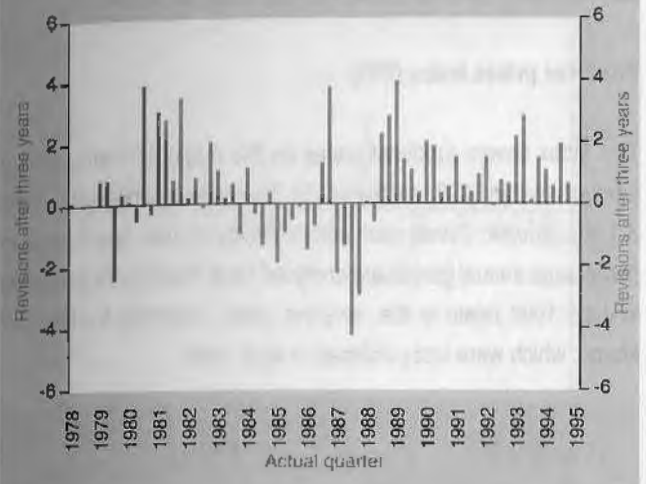
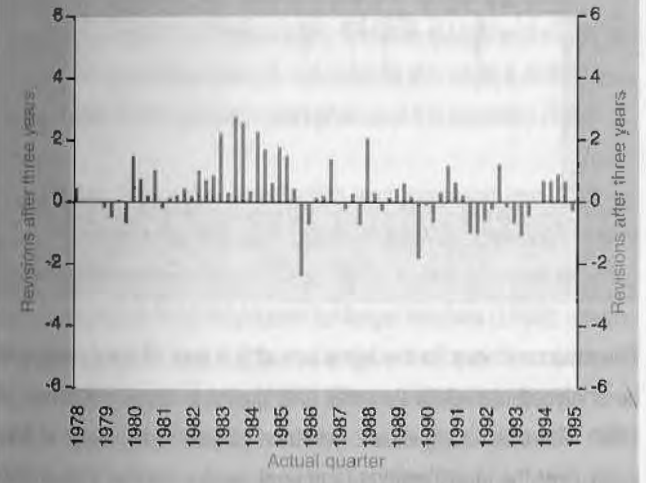


Chart 20
Manufacturing
four quarter per cent change

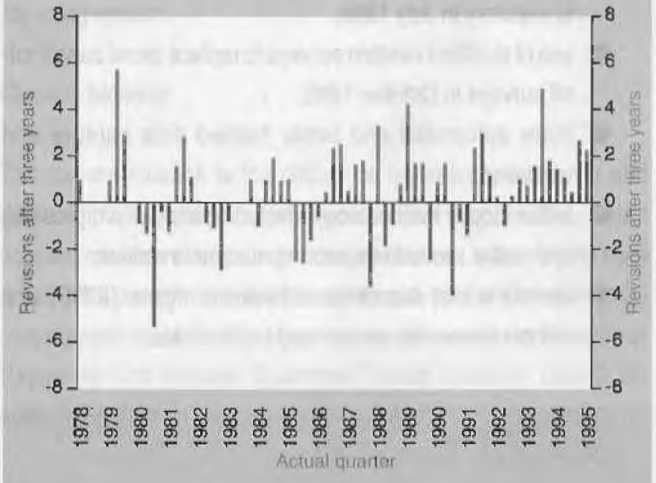


Revisions to manufacturing output show no significant evidence of bias over the standard five and ten year periods. When analysed for expansion phases, there is significant evidence of bias (mean revision +0.41). However, it should be noted that the upward revisions during the early and middle 1980s expansion in the UK economy influence this result. Revisions during the 1990s expansion have been smaller and more evenly divided between positive and negative ones.

Revisions to initial estimates of the growth of the distribution, hotels and catering sector show no evidence of bias in recent years.

Chart 21
Distribution, hotels and catering
four quarter per cent change

Chart 22
Transport and communications
four quarter per cent change



Transport and communications is the remaining output component to be analysed. Revisions to it show no significant bias in recent years, although they tend to be upwards. There is statistically significant evidence of bias in such revisions during expansion periods of the economy (Table 7).

Other sectors are not analysed. However, a recent article 'Plans for the development of a monthly index of services' may be of interest to readers (*Economic Trends*, October 1999).

Index of production (IoP)

This index covers the energy, extraction and water supply and manufacturing industries (sections C to E of SIC92). The monthly index is published in Table 5.1 of *Economic Trends*. As set out in the Framework Document, revisions to the three months on previous three months growth rate are taken as the difference between the fourth and the first estimate. The figure for January 1998 was first published in March 1998 and was compared with what was published for January in June 1998.

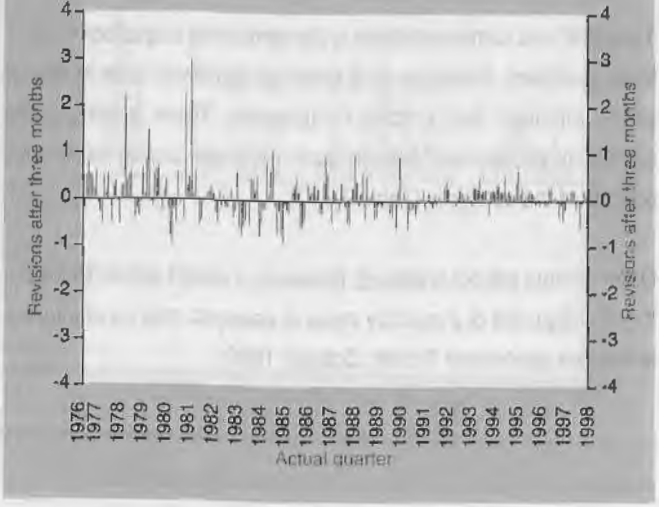
In the 1980s the IoP initial estimates were based on monthly panel surveys which did not pick up new and growing firms. Benchmarking to product inquiries led to large upward revisions six months later. To compensate for this an adjustment was applied to the early estimates in the late 1980s. The improvements in methodology over the last 10 years have not only improved the position but also negated the need for any such adjustment. Changes introduced include:

- increase of the sample from around 3,500 to 8,400 in July 1989;
- the inquiry to the non-engineering industries was changed to statutory in July 1989;
- use of stratified random surveys to replace panel based cut-off surveys in October 1993;
- more automated and better framed data capture and validation;
- better inquiry methodology - including imputation, grossing and outlier procedures, common across inquiries;
- use of the inter-departmental business register (IDBR) as a sample frame with current and frozen fields.

Chart 23

Index of production

three month on three month per cent change



The mean revisions to the index of production for 3, 5 and 10 year periods were all lower than in the 1996 article and all t-values were insignificant. The size of revisions to the growth rate in the 1990s can be seen to be much lower than in the earlier years.

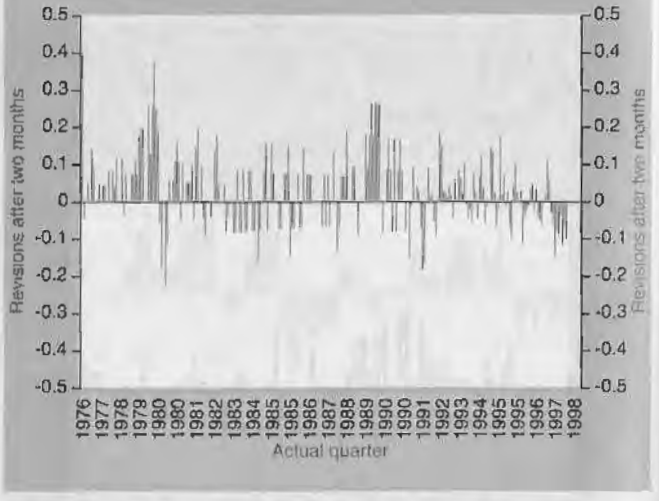
Producer prices index (PPI)

This index covers producer prices for the output of manufactured products (within SIC92 sections C-E). The index is published in Table 3.1 of *Economic Trends* each month. Revisions over two months to percentage annual growth are analysed here. The figures published in June 1998 relate to the revisions (after 2 months) to those for March, which were first published in April 1998.

Chart 24

Producer price index

annual growth rate



The mean revisions for the latest sets of 3, 5 and 10 year periods to be analysed are relatively small and similar to those published in 1996. There is no significant evidence of bias in revisions to this index over the latest periods (and t-values are smaller than in the 1996 study). Revisions to this index show statistically significant bias in expansion phases of the economy, although the mean revisions involved are very small: +0.02. System improvements were made in 1995 that should impact on the quality of the initial PPI estimates from that date onwards.

Retail sales

The index of retail sales volume is published in Table 5.8 of *Economic Trends*. The revisions analysis is based on three months on three months percentage growth as revised three months after the first publication. For example, the value for January 1998 was published in February and the revision analysed is between that and the figure published in May 1998.

Chart 25

Retail Sales

three month on three month per cent change

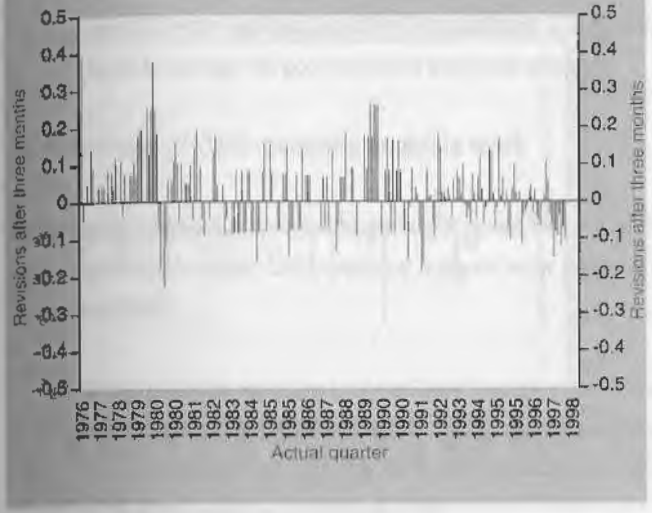
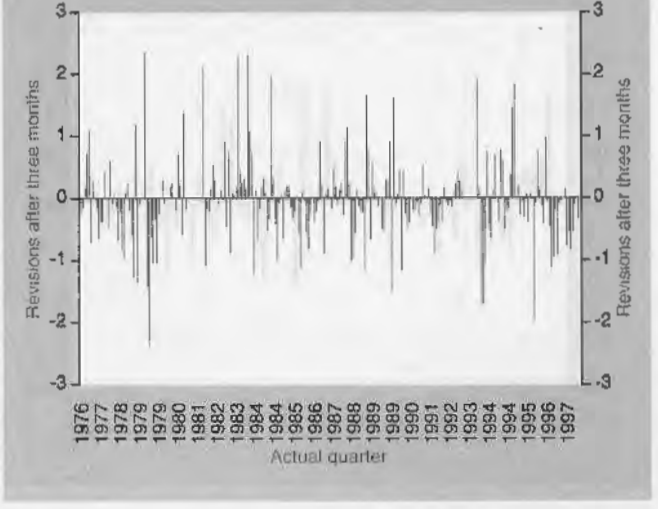


Chart 26

Balance on trade in goods

revision as per cent of total trade



The mean revisions to retail sales (ignoring sign) are slightly smaller over all periods than those in the previous study. This is reflected also in smaller values for their standard deviations and a smaller range of revision values for the two shorter periods. However, this latest research shows that there are still more positive (i.e. upward) revisions than negative ones over all three periods. There is evidence of significant bias (at the 5 per cent level) in revisions for the latest 3 and 10-year periods and during the expansion phases of the economy (Table 2).

In 1992 the retail sales sample size was increased from 3,500 to 5,000, the inquiry was made statutory and the sample structure was made more representative. Other more recent changes are that commodity data were introduced for larger retailers (1993); rotation was introduced to the sample and employment questions added to the inquiry once a quarter (1997). These changes may also have had an impact on the quality of the initial estimates of retail sales data and revisions to them, though it is difficult to draw conclusions at this point in time.

Balance on trade in goods

This is the balance between the values of exports and imports of goods. It was termed 'Visible Trade Balance' in previous articles in this series. Monthly estimates are published in Table 2.14 of *Economic Trends* and these use IMF Balance of Payments Manual (fifth edition) definitions, from the 1998 quarter 2 publication onwards.

The revisions over three months are taken as a percentage of total trade (exports plus imports). All three periods covered end in June 1998, the publication date of the revised estimate for March 1998.

The t-values were not significant for any of these periods, nor when the stage of the economic cycle was considered as a factor. Early estimates of trade in goods in 1993 were less soundly based than usual because of the introduction of the EU-wide INTRASTAT reporting system.

Current balance

The current balance is the difference between total credits and debits within the balance of payments' current account. The current account consists of trade in goods and services, plus income from employees as well as investment (interest, profits and dividends) plus current transfers. The figures are published in the Balance of Payments First Release, *Economic Trends* (currently Table 2.13) and *UKEA*.

For this analysis, revisions over six months are taken for the current balance (short term) as a percentage of GDP at factor cost. The last reading for Q2 1998 relates to the revision to Q3 1997 published in Q2 1998.

The t-values for revisions to this balance over the short term (including the expansion/contraction analysis) remain non-significant. The mean revisions over 3 and 5 years have fallen compared with the 1996 analysis.

The long-term revisions to the current balance are taken as revisions after 13 quarters, as a percentage of GDP at factor cost. Revisions over the 10-year period show some evidence of bias, although this is not the case for the 3 and 5-year periods.

Chart 27

Current balance (short term)

as per cent of GDP at factor cost

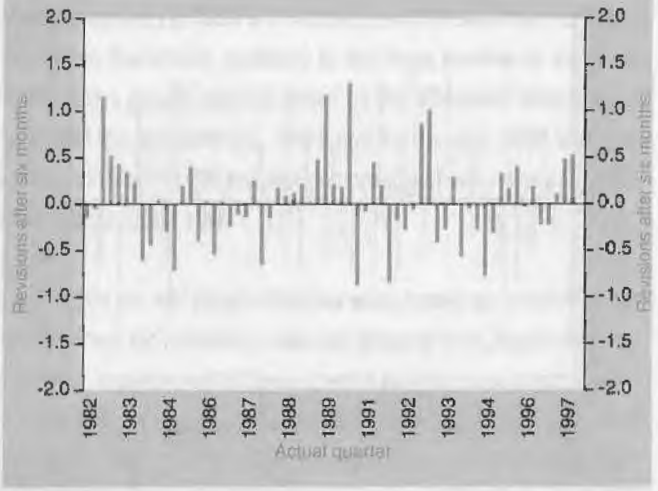
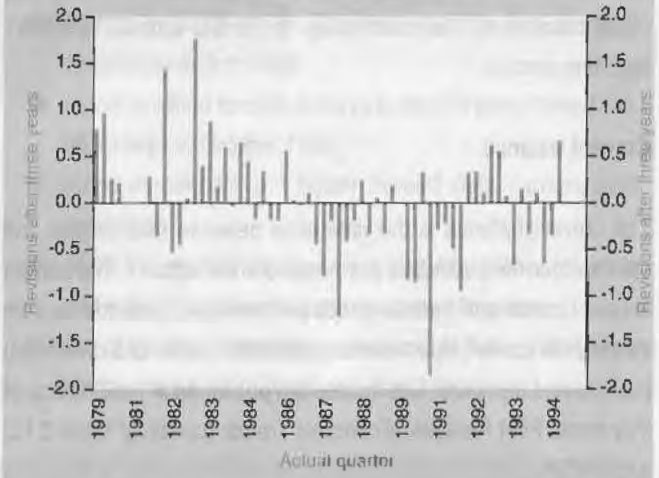


Chart 28

Current balance (long term)

as per cent of GDP at factor cost



Public Sector Net Cash Requirement (PSNCR)

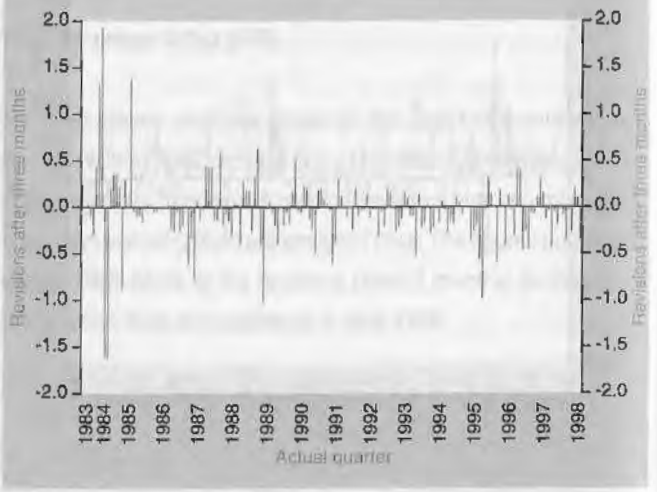
Monthly estimates of this key economic figure are published in a First Release and *Financial Statistics*. Revisions over 3 months are taken as a percentage of GDP.

The revisions show no evidence of significant bias over the last 15 years (Table 2) or the last three years. There is some evidence of statistically significant bias when just the ten and five year periods are analysed, however, the mean revisions are relatively small (Table 1). When revisions to PSNCR are considered by period of the economic cycle there is no significant evidence of bias in either the expansion or contraction phases over the past 15 years (Tables 1 and 2). This indicator was previously called the PSBR (Public Sector Borrowing Requirement).

Chart 29

Public Sector Net Cash Requirement (PSNCR)

as per cent of ½ GDP at market prices



Current challenges

- The move of the UK National Accounts to the new international standards (the European System of Accounts, or ESA95, and the IMF Balance of Payments Manual fifth edition). This has involved both redefinitions of some of key indicators and the creation of some new ones. This poses the question of how we should analyse revisions in future. For example, if a component of GDP has changed, the overall impact on revisions to its growth rate may be slight. Since it is the growth rate that is analysed - is it valid to continue as though there had been no break in the underlying series?
  The periods analysed in this article already span many important changes in the methods used to construct the indicators. Where redefinitions have had little overall effect on the statistics we expect to continue this analysis.

- We would like to do some sort of analysis on a shorter time span to assess the impact of changes to our systems, including the new ESA95 estimation system, more swiftly. The currently favoured ten-year period for quarterly data gives 40 observations for the t-test. This means that it is a number of years before the effects of changes are really seen in the results of the analysis of bias in the revision analysis.
  We are not aware of any suitable tests at present. However, it is useful to look at the other statistics shown in the tables - the mean revisions, spread and range of revisions over the three and five year periods.

- Earlier articles have used the ONS coincident index to identify the phase of the economic cycle that the UK economy was in. ONS ceased to publish the cyclical indicators in early 1997.
  For the current work we are using constant price GDP growth rates to "phase" the economy from that point onwards.

Readers' use of ONS revisions analysis work

We would be interested to hear from readers about the use they have made of the earlier ONS revisions analysis work published during the 1990s.

- When using the variables analysed here in economic models do readers adjust initial estimates of the indicators whose revisions seem to be bias only during an expansion phase? How do you deal with turning points?

- We would be interested in comments on efficiency tests like those done by OECD. These are the so-called 'beta' test (regressing revisions on the preliminary estimates) and 'rho' test (regressing revisions against the previous period's revisions). Do readers consider the OECD approach: of defining an output gap and using this to model the revisions to GDP growth, to be preferable?

- Have any readers tried to predict how initial estimates might be revised by modelling revisions using a number of different economic series? What were the results?

ble 1: Revision analysis (1988 - 1998)

dicator	Revision reference	No. of years	No. of obs	Mean rev. ignoring sign	Mean rev.	Std dev.	Coeff of serial corr.	SE of 1 Mean	t-value	% of + rev.	% of - rev.	Range of revision values	
												from	to
lance on trade in goods	Three months	10	113	0.47	-0.09	0.66	0.13	0.06	-1.34	39	58	-1.98	1.93
nthly balance as	after the first	5	57	0.51	-0.09	0.74	0.32	0.09	-0.83	37	56	-1.98	1.93
of total trade	publication	3	36	0.45	-0.12	0.68	0.31	0.11	-0.86	31	61	-1.98	0.99
dex of Production	Three months	10	120	0.19	0.05	0.26	0.28	0.03	1.63	43	57	-0.63	0.92
month on 3-month	after the first	5	60	0.19	0.08	0.22	0.44	0.05	1.73	67	33	-0.59	0.64
growth	publication	3	36	0.17	0.02	0.23	0.41	0.04	0.31	47	53	-0.59	0.26
oducer Prices Index	Two months	10	120	0.07	0.02	0.09	0.49	0.01	1.52	53	38	-0.19	0.26
annual	after the first	5	60	0.06	0.00	0.07	0.40	0.01	0.04	47	53	-0.15	0.17
owth rate	publication	3	36	0.06	-0.02	0.07	0.44	0.02	-0.84	38	62	-0.15	0.17
etail Sales	Three months	10	120	0.14	0.05	0.17	0.24	0.02	2.43*	59	33	-0.50	0.60
month on 3-month	after the first	5	60	0.11	0.04	0.14	0.32	0.02	1.60	62	37	-0.26	0.50
growth	publication	3	36	0.11	0.07	0.14	0.23	0.03	2.54*	75	22	-0.19	0.50
DP (short term at constant prices)													
(i) Preliminary to month three	Month three est.	10	-	-	-	-	-	-	-	-	-	-	-
quarter on quarter	from preliminary	5	20	0.09	0.02	0.11	-0.38	0.02	0.66	50	50	-0.14	0.21
quarterly growth %	estimate	3	12	0.10	0.01	0.11	-0.67	0.03	0.40	50	50	-0.14	0.15
(ii) Month three to six months later	Six months	10	40	0.23	0.03	0.33	-0.06	0.05	0.48	53	47	-1.13	1.17
quarter on quarter	after the first	5	20	0.16	0.06	0.18	0.05	0.04	1.53	40	60	-0.19	0.40
quarterly growth %	publication	3	12	0.13	-0.01	0.15	-0.45	0.03	-0.19	42	58	-0.19	0.24
GDP (long term at constant prices)	Three years	10	40	0.54	0.41	0.56	0.29	0.12	3.41**	83	17	-0.85	1.67
quarter on quarter	after the first	5	20	0.44	0.31	0.47	0.21	0.13	2.37*	80	20	-0.85	1.00
our quarter growth %	publication	3	12	0.50	0.43	0.37	-0.17	0.11	3.91**	83	17	-0.38	0.82
GDP (long term at current prices)	Three years	10	40	0.82	0.41	0.92	0.37	0.22	1.88	68	32	-1.50	2.42
quarter on quarter	after the first	5	20	0.71	0.14	0.90	0.30	0.28	0.49	60	40	-1.50	2.42
our quarter growth %	publication	3	12	0.76	0.41	0.91	0.32	0.37	1.11	67	33	-0.91	2.42
Current balance (short term)	Six months	10	40	0.38	0.07	0.50	0.12	0.09	0.77	55	45	-0.87	1.30
quarterly balance as %	after the first	5	20	0.38	0.06	0.46	0.30	0.14	0.45	50	50	-0.77	1.01
f GDP at factor cost	publication	3	12	0.31	0.05	0.38	0.46	0.18	0.30	58	42	-0.77	0.53
Current balance (long term)	Three years	10	40	0.41	-0.18	0.53	0.04	0.09	-2.04*	43	57	-1.85	0.66
quarterly balance as %	after the first	5	20	0.49	-0.17	0.63	-0.04	0.14	-1.20	50	50	-1.85	0.66
f GDP at factor cost	publication	3	12	0.38	0.05	0.46	0.09	0.15	0.33	67	33	-0.67	0.66
PSNCR	Three months	10	120	0.22	-0.08	0.26	0.12	0.03	-2.80**	37	63	-1.02	0.63
monthly PSNCR as per cent of 1/3	after the first	5	60	0.21	-0.11	0.26	0.09	0.04	-3.07**	33	67	-0.99	0.40
GDP at market prices	publication	3	36	0.24	-0.10	0.31	0.12	0.06	-1.80	39	61	-0.60	0.40

Note: *All periods end in June (for monthly data) or in Q2 (for quarterly figures) of 1998. Therefore the ten year period starts in July 1988, the five year in July 1993 and the three year in July 1995. These dates relate to the publication dates e.g. revision published in June 1998 for the Index of Production would relate to February 1998.*

1 t-value and Std Error are corrected for the effects of serial correlation except for the cases where the correlation is negative.

* *significant at the 5% level.*

** *significant at the 1% level.*

Table 2 **Tests of the effects of economic cycles on the revisions to initial estimates**
(growth rates per cent)

Indicator	Revised figures published	Overall		Expansion Phase		Contraction Phase	
		Mean	t-value	Mean	t-value	Mean	t-value
Balance on trade in goods	1977-1998	-0.06	-1.13	-0.02	-0.24	-0.10	-1.33
Index of Production	1977-1998	0.07	1.75	0.10	2.29*	0.00	0.03
Producer Prices Index	1977-1998	0.03	2.84**	0.02	2.66*	0.04	1.55
Retail Sales	1985-1998	0.04	1.96	0.05	2.00*	0.02	0.52
GDP (short-term, constant prices)							
(i) Preliminary to month three	1993-1998	0.02	0.66	0.02	0.66	n/a	n/a
(ii) Month three to six months later	1977-1998	0.09	2.29*	0.10	2.47*	0.06	0.68
GDP (long term at constant prices)	1977-1998	0.50	3.12**	0.78	5.27**	0.12	0.56
GDP (long term at current prices)	1985-1998	0.45	2.79**	0.81	4.56**	-0.10	-0.64
Current Balance							
short term (6 months)	1983-1998	0.05	0.67	0.04	0.54	0.05	0.39
longer term (3 years)	1983-1998	0.00	0.00	0.07	0.47	-0.07	-0.52
PSNCR	1984-1998	-0.05	-1.58	-0.07	-1.92	-0.03	-0.47

NOTE: t-values are after allowing for positive correlation
* *significant at the 5% level.*
** *significant at the 1% level.*

le 3

isions analysis: Expenditure components at current prices 1988-1998

ision reference: Three years after the first publication

ır quarter percentage changes

mponent	No. of years	No. of obs	Mean rev. ignoring sign	Mean rev.	Std dev.	Coeff of serial corr.	SE of 1 Mean	t-value	% of + rev.	% of - rev.	Range of revision values	
											from	to
tal GDP components	10	40	0.83	0.42	0.93	0.37	0.22	1.91	67.5	32.5	-1.50	2.42
	5	20	0.71	0.14	0.90	0.30	0.28	0.49	60.0	40.0	-1.50	2.42
onsumer expenditure	10	40	0.85	0.34	1.10	0.63	0.36	0.93	55.0	45.0	-1.39	2.98
	5	20	0.53	-0.19	0.69	0.17	0.18	-1.04	35.0	65.0	-1.16	1.89
General government final	10	40	1.10	0.40	1.26	0.17	0.24	1.69	62.5	37.5	-1.93	3.01
consumption	5	20	1.06	0.42	1.24	-0.01	0.28	1.50	60.0	40.0	-1.71	2.93
Gross domestic fixed	10	40	3.17	2.31	3.37	0.62	1.10	2.09	67.5	32.5	-4.24	9.73
capital formation	5	20	1.78	0.73	2.47	0.35	0.80	0.92	50.0	50.0	-2.38	6.65
Exports	10	40	0.96	0.27	1.23	0.39	0.29	0.93	52.5	47.5	-1.54	4.03
	5	20	1.27	0.71	1.43	0.50	0.52	1.38	65.0	35.0	-1.37	4.03
mports	10	40	0.79	0.31	1.00	0.17	0.19	1.65	62.5	37.5	-2.56	2.12
	5	20	0.90	0.43	1.01	0.31	0.31	1.37	65.0	35.0	-0.96	2.12

Note: Ten year periods runs from September 1988 to June 1998. The five year period runs from September 1993 to June 1998.

These dates relate to the publication dates; e.g. revision published in January 1998 would relate to the initial estimate for Q3 1994.

t-value and Std Error are corrected for the effects of serial correlation except for the cases where the correlation is negative.

* *significant at the 5% level.*

** *significant at the 1% level.*

Table 4

Revisions analysis: Expenditure components at constant prices 1988-1998

Revision reference: Three years after the first publication

Four quarter percentage changes

Component	No. of years	No. of obs	Mean rev. ignoring sign	Mean rev.	Std dev.	Coeff of serial corr.	SE of 1 Mean	t-value	% of + rev.	% of - rev.	Range of revision values	
											from	to
Total GDP components	10	40	0.84	0.68	1.00	0.39	0.24	2.88**	77.5	22.5	-0.85	4.40
	5	20	0.46	0.30	0.48	0.24	0.14	2.21*	75.0	25.0	-0.85	1.07
Consumer expenditure	10	40	0.72	0.13	0.95	0.53	0.27	0.46	50.0	50.0	-1.64	2.85
	5	20	0.55	-0.23	0.71	0.10	0.17	-1.29	35.0	65.0	-1.64	0.95
General government final consumption	10	40	1.04	0.41	1.23	0.01	0.20	2.07*	57.5	42.5	-2.06	2.56
	5	20	1.05	0.58	1.14	-0.18	0.26	2.22*	65.0	65.0	-1.68	2.29
Gross domestic fixed capital formation	10	40	2.75	2.12	3.01	0.62	0.99	2.15*	70.0	30.0	-2.29	8.88
	5	20	1.41	0.52	1.74	0.28	0.52	1.00	50.0	50.0	-1.79	3.60
Exports	10	40	1.21	0.23	1.50	0.08	0.26	0.89	55.0	45.0	-3.37	3.19
	5	20	1.46	0.45	1.71	-0.08	0.38	1.15	65.0	35.0	-3.37	3.19
Imports	10	40	1.48	-0.16	2.13	0.46	0.55	-0.28	47.5	52.5	-7.92	5.18
	5	20	1.93	-0.20	2.74	0.49	1.05	-0.19	55.0	45.0	-7.92	5.18

Note: Ten year periods runs from September 1988 to June 1998. The five year period runs from September 1993 to June 1998.

These dates relate to the publication dates; e.g. revision published in January 1998 would relate to the initial estimate for Q3 1994.

t-value and Std Error are corrected for the effects of serial correlation except for the cases where the correlation is negative.

* *significant at the 5% level.*

** *significant at the 1% level.*

Table 5

Revisions analysis: Income components at current prices 1988-1998

Revision reference: Three years after the first publication

Four quarter percentage changes

Component	No. of years	No. of obs	Mean rev. ignoring sign	Mean rev.	Std dev.	Coeff of serial corr.	SE of 1 Mean	t-value	% of + rev.	% of - rev.	Range of revision values	
											from	to
Total GDP Income components	10	40	0.91	0.54	1.08	0.28	0.23	2.35*	70.0	30.0	-1.73	3.23
	5	20	0.94	0.25	1.23	0.29	0.37	0.68	55.0	45.0	-1.73	3.23
Income from Employment	10	40	0.76	0.09	1.00	0.67	0.36	0.26	52.5	47.5	-2.52	2.02
	5	20	0.76	-0.08	1.07	0.70	0.58	-0.14	60.0	40.0	-2.52	2.02
Gross trading profits	10	40	6.73	1.38	7.70	0.27	1.60	0.86	60.0	40.0	-13.58	19.47
of companies	5	20	7.20	0.10	8.27	0.19	2.24	0.04	55.0	45.0	-13.58	12.74
Other income	10	40	2.53	1.80	2.43	0.62	0.80	2.26*	72.5	27.5	-3.27	6.89
	5	20	2.21	1.50	2.21	0.63	1.03	1.45	70.0	30.0	-2.47	5.36

Note: Ten year periods runs from September 1988 to June 1998. The five year period runs from September 1993 to June 1998.

These dates relate to the publication dates; e.g. revision published in January 1998 would relate to the initial estimate for Q3 1994.

t-value and Std Error are corrected for the effects of serial correlation except for the cases where the correlation is negative.

* *significant at the 5% level.*

** *significant at the 1% level.*

Table 6

Revisions analysis: Output components at constant prices 1988-1998

Revision reference: Three years after the first publication

Four quarter percentage changes

Component	No. of years	No. of obs	Mean rev. ignoring sign	Mean rev.	Std dev.	Coeff of serial corr.	SE of 1 Mean	t-value	% of + rev.	% of - rev.	Range of revision values	
											from	to
Total GDP output components	10	40	0.41	0.14	0.50	0.28	0.10	1.37	67.5	32.5	-1.24	0.99
	5	20	0.44	0.29	0.45	0.16	0.17	2.49*	75.0	25.0	-0.74	0.99
Agriculture, forestry	10	40	3.62	-0.08	4.36	0.70	1.63	-0.05	47.5	52.5	-8.33	12.18
and fishing	5	20	3.68	0.76	4.46	0.60	1.99	0.38	50.0	50.0	-5.12	12.18
Manufacturing	10	40	0.67	0.06	0.88	0.19	0.17	0.33	55.0	45.0	-2.35	2.07
	5	20	0.63	0.03	0.74	0.48	0.28	0.10	50.0	50.0	-1.07	1.23
Construction	10	40	1.36	0.61	1.66	0.47	0.43	1.41	72.5	27.5	-4.23	3.96
	5	20	1.01	1.01	0.79	-0.11	0.18	5.59**	95.0	5.0	-0.06	2.86
Distribution, hotels	10	40	0.90	-0.06	1.19	0.43	0.30	-0.20	55.0	45.0	-2.54	2.38
and catering	5	20	0.85	0.01	1.18	0.71	0.64	0.01	55.0	45.0	-2.31	2.38
Transport and	10	40	1.81	0.64	2.05	0.17	0.39	1.66	70.0	30.0	-3.97	4.90
communications	5	20	1.70	0.99	1.87	0.29	0.56	1.75	80.0	20.0	-3.97	4.90
Other services	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-

Note: Ten year periods runs from September 1988 to June 1998. The five year period runs from September 1993 to June 1998.

These dates relate to the publication dates; e.g. revision published in January 1998 would relate to the initial estimate for Q3 1994.

t-value and Std Error are corrected for the effects of serial correlation except for the cases where the correlation is negative.

* *significant at the 5% level.*

** *significant at the 1% level.*

Table 7
Summary of tests for cyclical variation, 1982-1998

Component	Expansion Phase		Contraction Phase	
	Mean	t-value1	Mean	t-value1
Expenditure (Current prices)				
Total	0.74	4.26**	0.00	0.02
Consumer Expenditure	0.54	1.81	0.24	0.74
General Government Final Consumption	0.55	2.42*	0.17	0.49
Gross Domestic Fixed Capital Formation	2.33	2.12*	1.39	1.52
Exports	0.52	1.98	-0.06	-0.23
Imports	0.57	2.66*	-0.04	-0.22
Expenditure (Constant Prices)				
Total	0.83	3.09**	0.28	1.50
Consumer Expenditure	0.39	2.17*	-0.10	-0.30
General Government Final Consumption	0.17	0.91	0.04	0.15
Gross Domestic Fixed Capital Formation	2.01	1.75	1.05	1.16
Exports	0.53	2.53*	-0.38	-1.38
Imports	0.37	1.06	-1.16	-2.48*
Income (Current Prices)				
Total	0.87	3.62**	-0.16	-0.73
Income from Employment	0.54	2.45*	-0.37	-1.02
Gross Trading Profits of companies	0.50	0.33	0.27	0.12
Other Income	2.55	3.11**	0.94	1.13
Output (Constant Prices)				
Total	0.51	2.58*	0.25	1.39
Agriculture, Forestry & Fishing	0.60	0.47	3.11	1.41
Manufacturing	0.41	2.21*	0.26	0.94
Construction	0.53	1.55	0.68	2.47*
Distribution, Hotels and Catering	-0.01	-0.05	-0.82	-0.75
Transport & Communications	0.91	2.40*	-0.13	-0.25

Note: *These dates relate to the publication dates; e.g. revision published in January 1998 would relate to the initial estimate for Q3 1994. t-values are corrected for the effects of serial correlation except for the cases where the correlation is negative.*

* *significant at the 5% level.*

** *significant at the 1% level.*

How the preliminary estimate of GDP is produced

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Introduction

This article explains how the preliminary quarterly estimate of Gross Domestic Product (GDP) is produced and describes the developments in statistics of output which made it practicable. This estimate of the change in GDP is based mainly on output information and is produced three and a half weeks after the end of the quarter to which it relates: the earliest regular production of such an estimate in the world.

The preliminary estimate is mainly derived from the output or production measure of GDP, commonly known as GDP(O). The output methodology is essentially the same for the preliminary and subsequent estimates. The subsequent estimates for each quarter are improved, not only by incorporating additional output data, but also by a greater emphasis on National Accounts' coherence and balancing through the income and expenditure measures of GDP. The article considers the influence of these wider relationships on the preliminary output-based estimates.

Improvements which led to the publication of a preliminary estimate

The GDP(O) indicator series have been subject to a considerable degree of change and improvement during the past decade. This followed the recommendations of the 'Pickford' review of economic statistics in 1989. Articles in *Economic Trends* No. 448 [1a] and No. 460 [1b] describe the widespread resulting improvements in data collection for the National Accounts. These included new short-term turnover inquiries for selected service industries to help improve the measurement of GDP(O).

Improvements in the quality of the early indicator results made possible an advance in the publication date for the first estimate of change in GDP. The then Central Statistical Office (CSO) announced in May 1993, in *Economic Trends* No. 475 [1d] an arrangement to begin publishing regularly an earlier estimate of the quarterly change in GDP. Publication began in April 1993. Since then a First Release called the 'Preliminary Estimate of GDP' has been published three and a half weeks (about 24 days) - after the end of each quarter, four weeks earlier than hitherto.

The new quarterly turnover inquiries (QTIs) were directed to many of the important private sector service industries which were previously relatively neglected in terms of statistical collections. As well as producing results more quickly, they offered conceptual and quality improvements: in many cases they replaced employment series which provided a measure of the level of input to an industry rather than of its output. Estimates from turnover inquiries can implicitly include quality adjustments through the deflation process and in the short-term the change in deflated turnover is considered to be representative of that in constant price value-added.

Challenges resulting from the Improvements

The introduction of service sector QTIs and the subsequent development of prices to deflate the results posed a number of difficulties. The new surveys drew samples from parts of the ONS business register that had hitherto been little used. As a result the quality of those parts of the register was initially relatively poor and this inevitably affected the survey results based on them.

Conceptual Basis of the Output or Production Measure of GDP

The value-added by an economic activity is defined as the total output of the activity less the inputs of other economic activities required to produce the output. The output estimate of GDP is defined as the sum of the value added of all the economic activities which produce goods and services. A definition of the production boundary, which marks the dividing line between what is included in economic activity and what is excluded, by international agreement, can be found in *National Accounts Concepts, Sources and Methods* [3]. The output approach provides an estimate of short-term change in economic net output, or value-added at constant basic prices, using a range of industry surveys and other sources as indicators to provide estimates of the changes for individual industries.

These industry estimates generally do not measure the short-term change in constant-price value-added directly. Rather they are 'proxy' indicators for that change. These are indicators that are considered to serve as an adequate alternative estimator of the change in value-added in the short term. Preferably the proxy indicator is the deflated turnover of a business, although volume and other indicators are used where necessary, or where they are considered adequate.

Any current price indicator series is deflated to constant price volume terms. Then it is indexed and aggregated with other volume indicators, using value-added weights for each industry for the base year - currently 1995. Base year value-added weights are taken from the annual *Current Price Supply and Use Tables* [9] produced by the ONS, supplemented by more detail where necessary. The result - an estimate of the constant price change in value-added in the economy - is then used as an estimate for the short term change in GDP. Since the introduction of the ESA95 the output results are compiled as estimates of industry value-added at constant basic prices. For publication the aggregate is converted into a quarterly change in GDP at constant market prices.

A range of published sources describes the output methodology more fully. Much can be found in *National Accounts Concepts, Sources and Methods* [3] while the complete range of present output indicators and their deflators can be found listed in the GSS Methodology Series publication No. 15: *Gross Domestic Product: Output Approach (Gross Value Added)* [5] edited by Peter Sharp. This latter publication also gives the detailed set of up-to-date value-added weights used to aggregate the series following the recent rebasing of the fixed-base Laspeyres indices onto 1995=100. A previous edition of this publication, GSS Methodology Series No. 5 [4], contains more on the output approach methodology.

The new QTIs have been accompanied by a vigorous programme of improvements in ONS survey practices. Since 1993, many improvements have been made: in the business register, in collection techniques and sample design. Some changes have also been necessary for other reasons: for instance to improve employment estimates; or so that the ONS could reduce the burden of survey forms on small businesses as required by the Osmotherley Group report [10] whereby small businesses are exempt from all surveys for a period. Other sample changes or reductions have been driven by ONS cost imperatives.

Since the introduction of QTIs the gradual improvement in the quality of the service industries parts of the register meant that the sequence of estimates produced for individual service industries was subject to a series of discontinuities. To overcome these, bridging adjustments are often necessary in industry series.

The new range of QTIs also brought a need for a range of new deflators: industry specific service industry price series were rare. The ONS's extensive programme to collect new service industry deflators to remedy this deficiency has been discussed elsewhere, e.g. in *Economic Trends* No. 538 [19]. That programme is still far from complete: not only for cost reasons, though they are important, but also because much of the work is intrinsically difficult. The lack of a full set of industry specific deflators may have greater long-term rather than short-term effects on the estimates; an inadequate deflator may have only a small effect on a single quarter but may cause the estimated change in an industry's output to drift incorrectly over time. This may show up as an imbalance in the National Accounts and if significant it will be remedied in due course through National Accounts' balancing adjustments.

Where data series are of inadequate quality, National Accountants use their expertise to improve the quality of estimates generated from the raw data series, making adjustments as necessary. For GDP(O) some pre-1991 indicators and data collections were less timely and less conceptually appropriate, but they exhibited greater stability and continuity. Adjustments were made less frequently and to remedy temporary problems. Liaison with a supplier, or natural data revision, would generally result in an improved series and the removal of adjustments. As a result of the accelerated pace of operational change and the process of frequent collection improvement since the first QTIs were introduced in 1991, this situation no longer holds. Frequent data collection, register and other changes have necessitated more frequent adjustments and their long-run retention for some industries.

Timetable for the Preliminary Estimate.

The estimate produced three and a half weeks after the end of the quarter is appropriately called 'preliminary'. A 'provisional' estimate is produced four weeks later and a so-called 'final' estimate is produced after a further five weeks as part of the full quarterly National Accounts. This last is not definitive: revisions still occur due to data updates, National Accounts' quarterly balancing and as part of the preparation of data for the annual *National Accounts Blue Book* [6].

A timetable of the main events leading to the production of the preliminary estimate is below. The dates are those for October 1999: the schedule is typical.

- Index of Industrial Production (IoP), to end of August, published Wednesday 6 October.
- Supply deadline for most input series to the preliminary round: Friday 8 October.
- Receipt of later data and data entry processing runs: 11 - 15 October.
- GDP(O) Retail sales series received and processed: Friday 15 October.
- Distribute material for the Balancing meeting, p.m. Monday 18 October.
- Balancing meeting: a.m. Tuesday 19 October.
- Retail sales to end of September published: Wednesday 20 October.
- Supply draft First Release [8] with near final figures to selected Government ministers, 5.00 p.m. 20 October.
- Pre-release ONS Press Office review a.m. Thursday 21 October.
- Publication; almost always on a Friday: 9.30 a.m. 22 October 1999.
- Press conferences to the electronic agencies and to the National Press: 9.30 and 10.30 am.

As with all ONS regular First Releases, the date of publication is pre-announced several months in advance. Typically, as here, the preliminary estimate of GDP is published two days after the retail sales for the full quarter: the retail sales publication is one of the key determinants of the date for the publication of the preliminary estimate.

Preliminary Estimate: processes carried out by GDP(O) Branch

Calculation Processes

About two-thirds of GDP(O), measured by value-added in the economy, comes from the service industries: see Chart 1. Of the

Chart 1

Industry Contributions to GDP: by Value-Added Weight

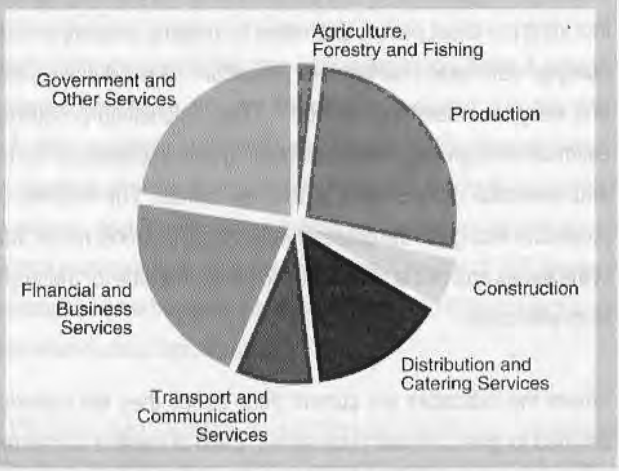
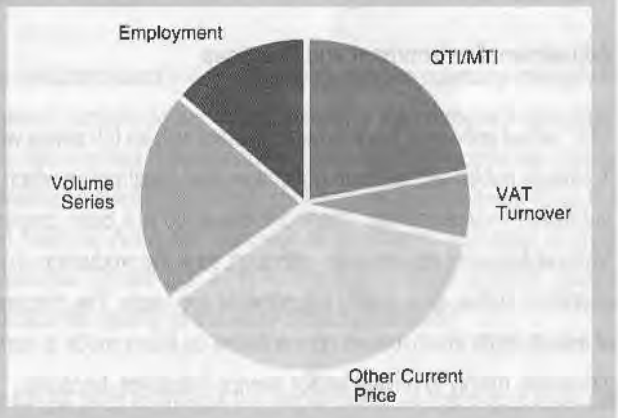


Chart 2

Types of Indicator used for GDP Service Industries: by Value-Added Weight



remainder, the largest single component - about a quarter - is the IoP: agriculture and construction make up the rest. Each of these last three is delivered to the quarterly National Accounts as aggregated series: three for the IoP, three from the Ministry of Agriculture, Fisheries and Food and two for construction - from the Department of the Environment, Transport and the Regions, and the Northern Ireland Departments. For the service industries the GDP(O) measure uses over 600 indicator series - including about 130 deflators. They are supplied by over 50 different suppliers in over 20 different organisations, although the majority come from within the ONS. About 55 of the QTI series are used and these often represent industry components with relatively large weights. Chart 2 shows the main types of indicator used for services.

The production of the preliminary estimate is based on output sources and estimates only: it relates to other National Accounts estimates

only where common indicator sources are used. Each month data is requested from suppliers to a timetable, received and checked. Late supply and queries are chased up. Estimates are necessary where data is missing so that all component series have a value up to and including the latest period. Estimates for missing data are produced using an automatic Holt-Winters' procedure - a well-known, reliable and easy-to-understand method [11]. This calculation produces an estimate through exponential smoothing and incorporates the trend and seasonal components of the raw series. The Holt-Winters' procedure also gives the greatest weighting to the most recent values in the series and this is considered to be appropriate for these short-term estimates.

Where the indicators are current price series they are individually deflated to give constant price series. Each of these is converted to a fixed base Laspeyres volume index series. These are aggregated together, using gross value-added base-year weights and seasonally adjusted. The results - the published level industry series and the GDP(O) index - are all presented as base-weighted index series and percentage changes, each suitably rounded.

Adjustment Environment and Practices

GDP output estimates have to be consistent with an IoP series which is already published, and with agriculture and construction which are published independently. Therefore these do not bear long-term National Accounts adjustments - although, as in the production of most economic series, data quality adjustments are made. The discussion of adjustments which follows concentrates on those made to service industries, mainly to private sector service industries, because:

- the service industries make up two thirds of the value-added in GDP(O);
- the quality of some, mainly private sector, services indicator series is considered to be relatively poor and so they sometimes bear relatively large quality adjustments;
- any GDP(O) balancing or coherence adjustments are usually made to service industries.

For the preliminary round, the scrutiny of suspect indicator series concentrates on the most recent quarter. Where a particular indicator series or value is considered unacceptable the GDP(O) estimate used will depend on the application of judgement to supplement the calculation process. This judgement is applied to individual industry indicator series: in some cases at a detailed level, in others to more aggregated series. For the preliminary round any new adjustments will be made only to the latest quarter to give the best estimates of quarterly change.

QTIs are one of the major indicator sources for service industry output estimates - not only in terms of the number of series used: they tend to be used for indicators with large value added weights. They are also - unsurprisingly, given the new departure they initially represented and the subsequent register and methodology changes - a major source of discontinuity and variability; hence a need for adjustments.

The 1996 *Report on the Review of the Quarterly Turnover Inquiries* [2] included a list of the sources of discontinuity which had arisen in the most recent single year, then 1995:

- moving QTIs more fully onto the new inter-departmental business register (the IDBR);
- introducing new common survey processing software;
- reducing the sample sizes;
- introducing a system of rotational sampling;
- changing the industry classification system to the SIC92;
- replacing some quarterly inquiries by monthly ones (MTIs).

The number and importance of the changes to data collection processes each year have rarely been this great, although since 1995 improvements have been introduced every year. Resources have not been available to carry out any direct assessment of the effects on the continuity of the time series, so any consequences have to be estimated indirectly.

At a 'final' quarterly round the coefficients of variation (the ratio of the standard error of a turnover estimate to the estimate itself) for detailed individual QTI series may range from about two per cent to ten per cent, with around half about four per cent or more. A 95 per cent confidence range around the resulting quarterly growth estimates for many of these individual indicator series may be of the order of 10 per cent. Volatility and coefficients of variation will be greater at a preliminary round when response rates are lower.

Table 1 shows the variability which can exist at a 'final' round, using figures for a variety of familiar industries with value-added weights totalling over three percent of GDP(O) where growths can sometimes appear erratically high. The series are presented as growths over the corresponding quarter of the previous year to remove any seasonal effects. Corresponding quarterly turnover series are published by the ONS in a quarterly News Release [7]: 'Distributive and services trades'.

TABLE 1

Quarterly Turnover Results for selected industries: percentage growths over the corresponding quarter a year earlier

Period	Scheduled passenger land transport other than by rail	Computer software consultancy and supply	Accounting, book-keeping and auditing activities; tax concsultancy	Business and management consultancy activities
1995 Q1	+16.7%	+12.7%	+10.6%	+20.1%
1995 Q2	+5.4%	+16.3%	+8.7%	+21.4%
1995 Q3	+8.6%	+20.0%	+6.0%	+14.2%
1995 Q4	+5.5%	+22.1%	+4.9%	+18.5%
1996 Q1	+4.7%	+19.9%	+10.5%	+17.8%
1996 Q2	-8.0%	+26.3%	+6.7%	+20.2%
1996 Q3	-12.9%	+12.9%	+8.8%	+18.2%
1996 Q4	-12.0%	+21.3%	+14.2%	+17.4%
1997 Q1	+4.9%	+13.7%	+21.3%	-1.0%
1997 Q2	-6.4%	+11.7%	+6.0%	+0.1%
1997 Q3	+3.6%	+14.3%	+8.5%	+21.5%
1997 Q4	+13.6%	+22.6%	-2.9%	+18.2%
1998 Q1	-6.7%	+27.1%	+12.6%	+44.1%
1998 Q2	+32.9%	+33.6%	+32.4%	+66.0%
1998 Q3	+22.6%	+45.5%	+34.7%	+43.6%
1998 Q4	+13.0%	+38.9%	+37.4%	+30.4%
1999 Q1	+16.3%	+25.5%	+7.5%	+18.4%
1999 Q2	+7.1%	+13.6%	+2.6%	-0.7%

The process of evaluation and the application of judgement each round is carried out over a short period. Therefore the focus tends to be on major series of suspect quality: most investigation is of series whose gross value-added weight, or contribution to GDP(O), is greatest. The first step is the observation that a value appears to be inconsistent with those that precede it. Investigation is undertaken of possible reasons; enquiries are made to the supplier; and alternative estimates may be produced.

The main criteria for deciding whether a series value seems inadequate are:

- comparison with the earlier values of the series;
- the comparative movements of related output series;
- changes in other source indicators for the same industry.

Two other quarterly data sources are available for many industries where QTIs have been introduced: employment and VAT turnover data. Employment data comes from ONS employment surveys. VAT turnover data is aggregated HM Customs and Excise VAT returns of businesses' turnover: not a survey but an administrative data source covering VAT registered businesses - with all the strengths and weaknesses associated with that.

Employment is conceptually the poorer indicator, since it actually measures input to an industry rather than its output: it is also less timely. Consequently early VAT turnover data is the alternative most often used to provide a source for checks on the output indicator movements, and for alternative estimates; as well as serving as an indicator in its own right for some industries. The use of VAT turnover data requires care because it is subject to its own different seasonal patterns and other limitations.

For the preliminary estimate detailed industry series are considered not to be of publishable quality so generally only broad indications of the nature of the changes are given. Detailed industry series are published later, with the 'final' estimate each quarter.

Relationship to the Income and Expenditure Measures of GDP

The indicators used in GDP(O) to estimate the quarterly changes in economic activity do not measure directly the changes in constant-price value-added in the economy. However ONS experience of early estimates, including revisions, shows the output measure to be the best National Accounts' indicator of short-term economic change (*Economic Trends* No. 471) [1c]. The introduction of QTIs helped reinforce the quality of the early output estimates.

For longer term estimates the dependence of the output estimate on a range of input, volume and gross output indicators limits its value. Annual growth is better estimated using the input/output process for balancing the income, expenditure and output approaches to GDP at current prices, then deriving annual growth at constant prices by deflating using the expenditure approach.

During each quarter's subsequent rounds the preliminary estimates of GDP change are revised through balancing adjustments to reduce the inconsistencies which would otherwise exist between the different approaches to measuring the National Accounts (*Economic Trends* No. 504) [1e]. This allows the preliminary estimate to take more account of the expenditure and income measures of GDP, as these become stronger. The result, for each quarter's estimates, is a consistent and firm view of GDP through the three different approaches with credible estimates for the components of each. Any annual balancing adjustments to the output-based estimates follow these quarterly quality and balancing adjustments and are published, most recently in notes to Chapter 2 in the 1999 *Blue Book* [6].

The Preliminary Round Balancing Meeting

The preliminary industry output results are scrutinised at a National Accounts' balancing meeting whose aim is to ensure the estimates are the best possible and consistent with the information available elsewhere in the National Accounts. At the preliminary round the amount of expenditure information available is small and income data is almost totally lacking. For the balancing meetings held during the 'provisional' and 'final' monthly rounds each quarter, more expenditure and income data is available.

For the preliminary round balancing meeting, the limited internal balancing information for the latest quarter is usually supplemented by a range of indirect and 'softer' sources:

- knowledge from previous rounds' monthly balancing meetings of the extent and direction of any longer term balancing stresses;
- a National Accounts 'trial balance' giving limited information on expenditure and income;
- a presentation on the Index of Industrial Production;
- results produced from a modelling approach to output;
- an assessment of the economic background by ONS professional economists;
- a review of wider ONS economic indicators and of external econometric indicators, put together by ONS economists; including employment, earnings, retail sales, trade, any results from the Confederation of British Industry, British Chambers of Commerce and Chartered Institute of Purchase and Supply, and consumer confidence surveys;
- a paper explaining the quality of the preliminary GDP estimate and the component GDP(O) industrial series, highlighting major changes, adjustments made and their effects.

The meeting assesses the preliminary GDP(O) estimate against the other sources and agrees amendments when necessary. The implications of the wider sources are considered for individual industry sectors and overall. Industries are identified where estimates are suspect and where further adjustments may be needed. External data and 'softer' sources play a limited role but may help resolve conflicts in ONS data.

The GDP(O) information to the meeting is considered to be the strongest component presented. Consequently small adjustments are imposed and then only on a minority of occasions: about one third of the time. Where a balancing adjustment is required, the size along with the broad industry revisions to achieve it, are decided. The result is a preliminary estimate of GDP change which, while based mainly on output indicators, takes account of other National Accounts' data.

Service industry series usually carry any coherence adjustment that is needed. This is partly due to the convention of not adjusting the other components, and partly because the quality of the service industry estimates is considered weaker. Occasionally during a preliminary round coherence adjustments are made to agriculture or construction, or to the Index of Production (IoP), though any such adjustments are removed when these series are published for the full quarter. The overall effect of any balancing adjustment on the preliminary estimate of GDP is rarely more than 0.1 per cent. Effects on individual service industries are of course larger.

Through this process the ONS develops a preliminary estimate of GDP where:

- GDP(O) is the lead - but not the sole - indicator of change for the latest quarter, and
- the ONS has satisfied itself that the result is the best central estimate of change in GDP.

Results and Outputs

All GDP estimates are published to a pre-announced timetable, through a First Release supported by press conferences and through the ONS electronic databank. Advance information is also supplied to a restricted set of Government customers - officials and ministers mainly at the Treasury and the Bank of England - about 36 hours in advance of publication, in line with the ONS code of practice.

For the preliminary estimate, some of the industry series delivered will be subject to considerable later revision and much data will not have arrived. Consequently the ONS publishes only a small amount of industry detail at this stage. Furthermore, the preliminary estimate shows no revisions for previous quarters, following a National Accounts convention, so the only new figures presented are the changes for the latest quarter in:

- the Distribution and Catering Trades;
- all services;
- total GDP.

All the detailed industry series, whether published or not at the preliminary round, contribute to the aggregates. To explain that, and to increase user understanding of, and confidence in, the published figures, additional briefing is given at the press conferences: qualitative information about the unpublished industry contributions; their direction; broad magnitude and previously published results to show the historical context.

One of the high quality components is the contribution of retailers, where retail sales results have already been published for the full quarter. This is one reason why a 'distributive and catering trades' value for the latest quarter is published in the preliminary round. The GDP(O) measure uses retail sales aggregated by value-added weight - rather than by sales as published in the retail sales index two days earlier - so the quarterly changes are rarely the same. The detailed GDP(O) retail estimate itself is published along with all detailed industry series, at the time of the 'final' estimate. The unpublished IoP estimate supplied to the preliminary round is also of relatively high quality. A detailed qualitative briefing for the IoP is included as part of the preliminary round press conference briefing.

Other unpublished industry components are of poorer quality. A summary assessment of the quality of the industry estimates is presented to the preliminary round balancing meeting. The assessment presented to the Q3 1999 preliminary round in October 1999 is at Table 2: the percentages are representative of the position for preliminary rounds. The first column gives a guide to the proportions of firm supplier data in the preliminary estimate. For instance the 67 per cent 'Supplier data' for Production industries (the IoP) represents the inclusion of two months' survey results in the latest quarter's estimate. The 'supplier estimates' column indicates roughly the proportions estimated by suppliers for the preliminary round. The final column shows the remainder - where values for the latest quarter have been estimated as part of the calculation processes described earlier.

For the preliminary round many sources, such as the QTI survey results, are based on a small proportion of early returns. So only a small fraction of their weight is included in the 'supplier data' column, the rest being assumed to be a 'supplier estimate' until response rates are more complete. The estimates are plainly a rough guide but on this basis the result for the Q3 1999 preliminary round, of between 50 per cent and 60 per cent supplier data, is typical. For the 'final' round, two months later, this will increase to about 95 per cent.

TABLE 2

Proportions of data in October 1999 for the Q3 1999 preliminary estimate

Industry group	Supplier Data	Supplier Estimates	GDP(0) Branch Estimates
Agriculture	94%	nil	6%
Production industries	67%	33%	Nil
Construction	10%	90%	Nil
Distribution and catering	78%	17%	5%
Transport, storage and communication	22%	40%	38%
Finance and business services	47%	23%	30%
Government and other services	47%	21%	32%
TOTAL	**58%**	**26%**	**16%**

The largest industry quality adjustments are most often in transport and communication and in finance and business services. One potential justification for this may be apparent from Table 2. For the Q3 1999 preliminary round the net effects of quality adjustments of the type described in the section on adjustment processes was to add about 0.2 per cent to the latest quarter's growth. From quarter to quarter the net effect of adjustments is variable and this magnitude of overall effect is not untypical, though it is often less. Although the net overall effect on growth can be of either sign it is more usually negative rather than this positive example.

Assessment of Revisions and Estimates

The preliminary estimate is subject to a performance target agreed with the Treasury - initially to the effect that no more than one estimate in four should be revised by more than 0.25 per cent between 'preliminary' and 'final' publication. This was changed to a more demanding 0.2 per cent from 1997 Q1. Since its first publication the preliminary estimate has always met its performance target.

Revisions to the preliminary estimate since it began in 1993 are shown in Table 3. The greater revisions tend to occur from the 'final' estimate to the present one: a period that differs for each row of the table, though for all the early rows it is considerable. Chart 3 shows the relatively small revisions between the 'preliminary' and 'final' monthly rounds in comparison to the - generally much larger - current estimates of quarterly growth.

Amongst the many important factors which contribute to the longer term revisions is the five-yearly rebasing - most recently onto a 1995 base year - and the conversion of the UK National Accounts data onto ESA95. Only the last five rows of Table 3 are unaffected by these two factors.

The preliminary estimate of GDP is always subject to revision and improvement - as part of a coherent and balanced set of data. The generally moderate size of the revisions, between the preliminary and both the 'final' estimates and later, demonstrates that the preliminary estimate performs well in this respect.

Chart 3

Estimates of quarterly change in GDP since 1993 and preliminary to 'final' round revisions

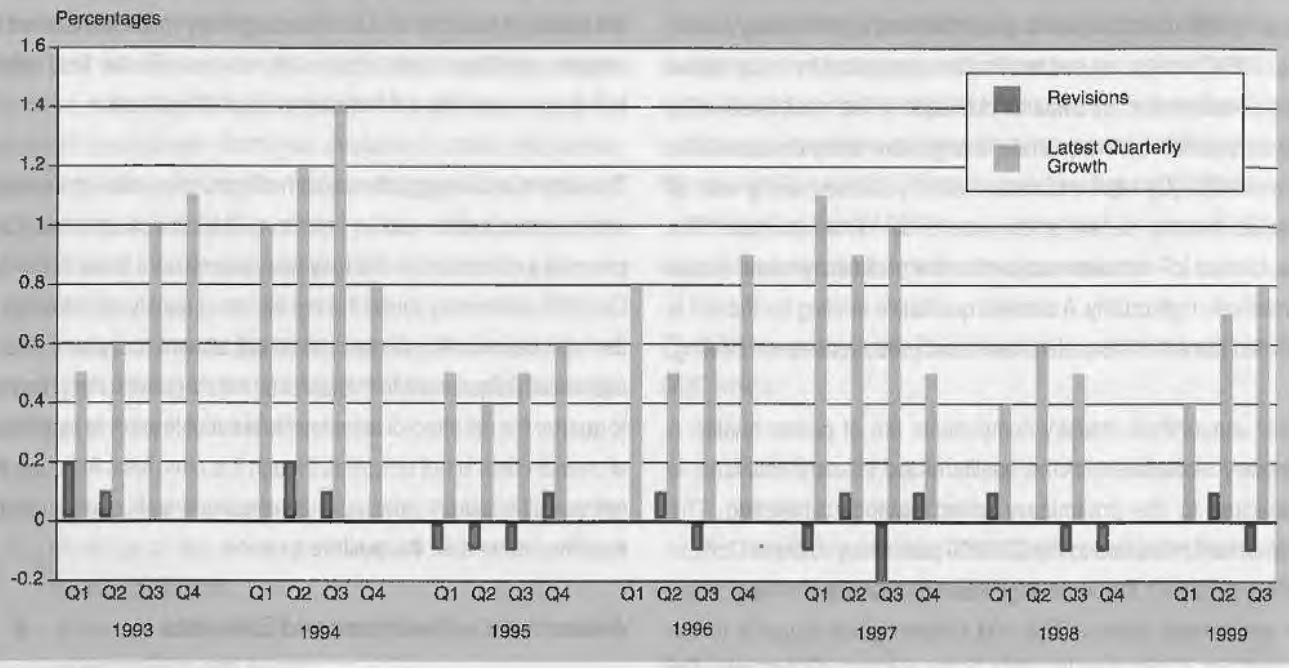


TABLE 3

Estimates of quarterly change in GDP since 1993, showing revisions

Year and Quarter	'Preliminary' estimate	'Final' estimate	Present estimate
1993 Q1	+0.2%	+0.4%	+0.5%
1993 Q2	+0.5%	+0.6%	+0.6%
1993 Q3	+0.6%	+0.6%	+1.0%
1993 Q4	+0.7%	+0.7%	+1.1%
1994 Q1	+0.7%	+0.7%	+1.0%
1994 Q2	+0.9%	+1.1%	+1.2%
1994 Q3	+0.7%	+0.8%	+1.4%
1994 Q4	+0.8%	+0.8%	+0.8%
1995 Q1	+0.8%	+0.7%	+0.5%
1995 Q2	+0.6%	+0.5%	+0.4%
1995 Q3	+0.5%	+0.4%	+0.5%
1995 Q4	+0.4%	+0.5%	+0.6%
1996 Q1	+0.4%	+0.4%	+0.8%
1996 Q2	+0.4%	+0.5%	+0.5%
1996 Q3	+0.8%	+0.7%	+0.6%
1996 Q4	+0.8%	+0.8%	+0.9%
1997 Q1	+1.0%	+0.9%	+1.1%
1997 Q2	+0.9%	+1.0%	+0.9%
1997 Q3	+1.0%	+0.8%	+1.0%
1997 Q4	+0.5%	+0.6%	+0.5%
1998 Q1	+0.4%	+0.5%	+0.4%
1998 Q2	+0.5%	+0.5%	+0.6%
1998 Q3	+0.5%	+0.4%	+0.5%
1998 Q4	+0.2%	+0.1%	+0.0%
1999 Q1	+0.1%	+0.1%	+0.4%
1999 Q2	+0.5%	+0.6%	+0.7%
1999 Q3	+0.9%	+0.8%	+0.8%

The output-based estimate of GDP can sometimes exceed the estimates from the other measures for a number of quarters. The cause might be a change in the relationship of gross output or turnover to value-added. Or our existing statistical sources may be finding it more difficult to track short-term change in the economy. This may give rise to a need for annual balancing adjustments as described in the *Blue Book*.

In considering the merits of the adjustments made before publishing estimates, care must be taken to avoid a conclusion that results prior to adjustment are somehow 'true' estimates of quarterly change or that the size of adjustment gives an indication of the extent to which the final estimate of GDP may be inaccurate. This would take no account of the National Accounts imbalances that would result. Evaluation of the raw data and the use of adjustments is a key contribution to high quality National Accounts estimates.

Estimates of GDP change are subject to regular analysis for potential bias. Analysis published in *Economic Trends* No. 510 [11] in 1996 showed no significant bias in the revisions to the short-term estimates. The article did suggest that revisions to the longer term estimates over a period of three years tend to be upwards, but over the longer period changes in the economy and in definitions as well as improvements in measurement, make interpretation complex. More recently, the first revisions analysis of the preliminary estimate, comparing each with the corresponding 'final' estimate, concludes again that there is no significant bias in the revisions to the short term estimates, while once more suggesting an upward bias in the

longer term ones. Without the adjustments made in compiling the preliminary estimates those too may be more likely to show an upward bias compared with the balanced National Accounts' estimates published after three months.

Table 2 shows that almost half the preliminary GDP estimate consists of estimates rather than supplier data. While this limits its quality, the estimated components, together with any adjustments, reduce the sensitivity to short-term random variation. Any resultant tendency to smoothness in the preliminary estimate might contribute to the positive user perception of reliability.

Although the preliminary estimate of GDP is derived only from output sources it does not stand-alone. It is the most up-to-date and least complete of a series of quarterly GDP estimates and is part of a set of balanced National Accounts where the effect of the other measures on previous preliminary estimates is known. Anticipation of the influence of the other GDP measures on each preliminary estimate might help reduce revisions.

The ONS presents each preliminary estimate at a press conference where it gives some qualitative explanation of the unpublished figures to explain how the aggregate is derived and to increase confidence in the limited results published. The response from customers suggests that supporting the published figures with some explanatory indications of the unpublished components contributes to the value the customers get from the preliminary estimate and to their confidence in it.

The ultimate value of the preliminary estimate of quarterly GDP change lies in the quality of the estimate produced and in the value customers find in what is provided. In both respects, the UK preliminary estimate of GDP, for the past six years the earliest such publication in the world, is a clear success.

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Harmonised Index of Consumer Prices: update on methodological developments

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Summary

The Harmonised Index of Consumer Prices (HICP) has been developed as a comparable measure of inflation for Member States of the European Union, as required by the Maastricht Treaty. It is published monthly. Since its launch in 1997, a number of methodological changes to the HICP have been developed and agreed by the Member States of the European Union, in conjunction with Eurostat. The main focus of this article is to describe the significant changes which came into effect with the January 2000 index, in particular:

- extension of the coverage of goods and services in the HICP;
- harmonisation and extension of the geographical and population coverage of the weights;
- changes to the classification system.

The article presents estimates of the effect of these new Regulations on the UK HICP and summarises other methodological developments since the HICP was launched.

Background

The HICP has been developed by the National Statistical Institutes of Member States of the European Union, in conjunction with Eurostat (the European Communities' Statistical Office), as required by the Maastricht Treaty. It was used in the assessment of countries' eligibility to join Monetary Union in 1998 and, since January 1999, has been used by the European Central Bank to measure inflation in the European Monetary Union area. It is also used to measure inflation in the European Union as a whole and for comparisons of inflation between countries.

This is the latest in a series of articles reporting on the development of the HICP. Earlier articles in *Economic Trends* [1,2] presented:

- the background to the HICP and its uses, how it is constructed and how it compares with the UK Retail Prices Index (RPI);
- historical estimates of the UK HICP from 1988 to 1995, with indicative figures for 1975-1987.

The rules to be followed in constructing HICPs are laid down in a series of Regulations (legal documents) and Guidelines (agreements between Member States and Eurostat, setting out recommended practices). An initial Council Regulation, establishing the framework for the HICP, was passed in October 1995. This has been followed up with a series of detailed implementing measures.

The first implementing measures laid out the basic approach to be followed in constructing the HICP and ensured that the figures, when they were first published in early 1997, were broadly comparable. Since then, Eurostat and National Statistical Institutes have worked together to develop the HICP further. The result has been a number of Guidelines and Regulations. Some of these came into effect with the January 1999 index; several more came into effect with the January 2000 index. Generally, they are not retrospective in effect.

This article summarises the key points of the Guidelines and Regulations, which have been adopted since HICPs, were launched and describes their effect on the UK HICP. In particular, it focuses on the significant changes which came into effect with the January 2000 index.

Summary of new implementing measures

The rules governing the construction of HICPs when first launched were described in an earlier article[1]. These rules established a common expenditure classification based on COICOP (*Classification of Individual Consumption by Purpose*), a common coverage of goods and services, and a series of minimum standards. The latter covered such things as:

- the incorporation of newly significant goods and services (e.g. personal computers);
- quality adjustment;
- the use of comparable formulae for aggregating prices at the most basic level;
- representativity of the sample;
- population coverage of the weights;
- minimum standards for the construction of weights (with effect from January 1998).

Since then, several more implementing measures have come into effect to improve harmonisation and the methodology or coverage of the index. Four implementing measures came into effect with the January 1999 index:

- minimum standards for the treatment of tariffs;
- treatment of price reductions;
- treatment of rejected price observations;
- treatment of data processing equipment, particularly personal computers.

Five Regulations came into effect with the January 2000 index:

- adoption of the final version of the COICOP / HICP classification system;
- extension of the coverage of goods and services in the HICP;
- minimum standards for the treatment of health, education and social protection;
- harmonisation of the geographical and population coverage of the weights;
- minimum standards for the treatment of insurance.

Each of these measures is summarised in the following sections, starting with the Regulations, which came into effect most recently.

Regulations which came into effect with the January 2000 index

Adoption of the final version of the COICOP / HICP classification system

When the HICP was launched in 1997, the COICOP classification system had not been finalised and the provisional version of COICOP, which existed at that time, was used for the HICP. COICOP has now been finalised. This Regulation[3] specifies the data to be published and transmitted to Eurostat, based on the final version of COICOP.

The structure of COICOP now used for the HICP is shown in Table 1, along with the new weights for 2000. The main changes compared with the previous version of COICOP are:

- other services relating to the dwelling (COICOP group 04.4) has been split into its component classes;
- a more detailed breakdown for health (COICOP division 06) reflecting extensions to product coverage (see later section);
- revised structure and numbering for the whole of recreation and culture (COICOP division 09);
- inclusion of social protection (COICOP group 12.4) and health insurance (COICOP class 12.5.3), reflecting extensions to product coverage (see later section).

The major changes to some of the COICOP categories, particularly in recreation and culture, mean that it is not possible to make reliable comparisons of the new sub-indices with those they replace. Because of this, the HICP has been recalculated on to the final COICOP classification, back to January 1996. These recalculated figures replace the previous data and are available electronically from StatBase®/TimeZone (which can be accessed via the Internet at *www.ons.gov.uk*) and the ONS Databank.

The recalculation of the HICP has resulted in occasional revisions (generally no more than +/- 0.1 index points) to some of the HICP sub-indices, and the overall UK HICP index. The revisions are due to minor changes in the item weights for the new sub-indices, to ensure that the new section weight totals round to whole parts per thousand. Changes to item weights have proportionately the greatest impact on sub-indices with small weights. That explains why the health index, which had a weight of only 7 parts per thousand in 1999, is 0.6 index points lower in December 1999 than previously. Other COICOP divisions changed by no more than +/- 0.1 index points.

Extension of the coverage of goods and services in the HICP

When the HICP was launched, there were a number of goods and services excluded from its coverage. These tended to be areas, such as health and social protection services, where differences in national markets made it difficult to construct comparable indices. This Regulation[4] extends the range of goods and services covered by the HICP to these areas. Figure 1 summarises when the extensions to coverage come into effect, and gives examples of the types of goods and services brought into the UK HICP as a consequence.

The requirements of this Regulation have generally been met by using indicators already calculated for the Retail Prices Index or Final Expenditure Price Index. The main exception is in the area of financial services where a number of new price indicators will be introduced with the January 2001 index.

Several categories of expenditure will continue to be excluded from the coverage of the HICP. The most notable exclusion is owner-occupier housing costs, although a special Task Force is currently considering the issue. Other exclusions are narcotics, service charges for games of chance (such as lotteries, bookmakers, and casinos), life insurance and financial intermediation services indirectly measured (FISIM, which in effect equates to the difference between financial institutions' borrowing and lending rates). These are areas where there are considerable practical or conceptual difficulties in constructing reliable weights or price indices.

Minimum standards for the treatment of health, education and social protection

This Regulation[5] specifies the level of detail at which indices for health, education and social protection should be published. This can be seen in Table 1 (COICOP divisions 06, 10 and 12.4). It also specifies the treatment of:

- products (goods or services) which go from zero to a positive price;
- products where prices are related to the income of the purchaser.

Figure 1: Extensions to coverage of goods and services in the HICP

Type of good / service	Coverage in HICP up to December 99	Coverage from January 2000	Coverage from January 2001
Health	Health goods outside the social security system, mainly medical products.	All health goods and services except hospital in-patient services. Additions include NHS prescription charges, dental charges and eyesight test charges.	All health goods and services
Education	Education commonly paid by consumers in the EU	All education paid for by consumers, including university tuition fees	As from Jan 2000
Social protection services	None	Child minding and nurseries	All relevant services, including nursing & retirement homes
Insurance	Motor and house contents insurance	All insurance except life insurance and buildings (structural) insurance: in practice, for the UK this means the addition of travel and health insurance	As from Jan 2000
Financial services	Charges other than those expressed as a proportion of the transaction value	As for Dec 1999	All charges for financial services

Examples of products, which have gone from zero to a positive price in the UK, are eyesight test charges in April 1989 and university tuition fees in October 1998. For such products, the Regulation states that the movement from a zero to a positive price should be taken into the index in the month when the price change occurs.

University tuition fees are also an example of a product with income-related prices since the costs of the service are related to the income of the student or their parents. For these products, the Regulation states that if the cost of a good or service changes because the purchaser's income has increased, this should be treated as a price increase and taken into the index.

The requirements of this Regulation are consistent with UK practice for the Retail Prices Index (RPI)[6].

Harmonisation of the geographical and population coverage of the weights

This Regulation[7] states that the weights are to be based on the consumption expenditure made by all individuals in the domestic territory (e.g. UK). It covers expenditure by residents of private households, institutional households (such as nursing and retirement homes) and foreign visitors. It excludes expenditure for business purposes and expenditure abroad.

When the HICP was launched, the weights were harmonised to the extent that they had to cover, as a minimum, the expenditure of all private households resident in any part of the economic territory. There was no harmonisation in the way the other categories of individual consumption expenditure (institutional households and foreign visitors) were treated. Some countries included all or part of this expenditure and others, such as the UK, excluded it completely.

In order to comply with this Regulation, the weights for the UK HICP from January 2000 will be based on household final consumption expenditure estimates from the National Accounts. Previously, the main data source had been the Family Expenditure Survey (FES). The National Accounts data are less timely than the FES data. For the year 2000, the National Accounts data used covers the calendar year 1998; FES data would have covered the period July 1998 - June 1999. The weights for 2000 are shown in Table 1.

The overall effect of this Regulation, and the Regulation extending the coverage of goods and services in the HICP, is to increase the proportion of total household expenditure covered by the UK HICP by nearly 10 per cent, made up as follows:

- 3½ per cent is due to the inclusion of foreign visitors expenditure;
- a little over 1½ per cent is due to the goods and services brought in from January 2000;
- 3½ per cent is due to the goods and services to be brought in from January 2001 (including expenditure by residents of nursing and retirement homes);
- about 1 per cent is due to the inclusion of expenditure by residents of institutional households, other than nursing and retirement homes.

In order to illustrate the effect of this Regulation, weights have been constructed for 1999 on the same basis as for 2000. Table 2 shows how these illustrative weights compare with the actual weights for 1999; they also include the weight of the goods and services brought in due to the extension of product coverage. The table clearly shows:

- the increased weight for health, education and social protection services (COICOP groups, 06, 10 and 12.4 respectively) because of extensions to product coverage;
- the effect of including the expenditure of foreign visitors, in particular for catering and accommodation services (COICOP division 11).

Significant changes can also arise from differences in data sources. Although the National Accounts make considerable use of the FES, particularly for expenditure on services, data from other sources, such as the Retailing Inquiries and the International Passenger Survey, are also used extensively[8]. For instance, the Retailing Inquiries are the primary source for COICOP groups 03.1, 09.1 and 09.2 - clothing, audio visual equipment etc and other major durables for recreation and culture (mainly boats and caravans). For each of these groups, weights are significantly higher compared with those based on the FES.

Examples of groups where weights have fallen due to the change in data source are COICOP groups 07.1 and 07.2, purchase of vehicles and operation of personal transport equipment. Purchases of new vehicles in the National Accounts are based on new registrations at the Driver and Vehicle Licensing Agency (DVLA). Within the group covering operation of personal transport equipment, the fall in weight is mainly for fuels and lubricants, the data for which are mainly sourced from Department of Trade and Industry surveys of energy suppliers.

Treatment of insurance in the HICP

This Regulation [9] codifies the treatment of insurance in the HICP which has been followed since its launch in that it states that the weights shall reflect the service charge element of the insurance premium, while prices shall reflect movements in the gross premium. It also redefines how the insurance service charge should be calculated so that it is consistent with the new European System of Accounts 1995 [8,10] and introduces a new requirement for the weights to be based on an average of three years data.

These changes were implemented in the UK with the switch to using National Accounts as the primary data source for the weights.

Implementing measures which came into effect with the January 1999 index

Minimum standards for treatment of tariffs

This Regulation[11] sets out the rules for the treatment of tariff prices. In the UK, the main products covered by this Regulation are services delivered by utilities, such as telecommunications, postage, domestic gas supplies and rail fares. It also covers national prices set by Government, such as NHS prescription charges.

The Regulation specifies that indices comprising tariff prices should be calculated as base weighted changes in the tariff prices. It also specifies that in the event of the tariff structure changing, the revised tariff rates should be taken into the index with weights (estimated where necessary) which preserve the pattern of expenditure in the base period. Implementation of this Regulation required no changes to the UK HICP.

Treatment of price reductions

This Guideline sets out the circumstances in which price reductions should be taken into the HICP. These accord with the approach adopted in the UK [6]. The basic principle is that reductions should be available to all potential customers, with no special conditions attached. Normal sales prices should be recorded but not end-of-line sales, where the products on sale might be of a lower quality. Implementation of this Regulation required no changes to the UK HICP.

Treatment of rejected price observations

This Guideline states that prices should only be rejected or edited if there is supporting evidence, and that rejected prices should be treated as missing observations. This is not entirely consistent with UK practice and the requirements of this Guideline are being taken into account in the current review of RPI and HICP editing and validation procedures.

Treatment of data processing equipment

This Guideline states that personal computers should be included in the HICP and their weight should be reviewed annually. Prices may be obtained from magazines as well as, or instead of, by direct observation. Implementation of this Guideline required no changes to the UK HICP.

Effect of new Regulations on the HICP

In order to gauge the effect of the new Regulations, particularly the extensions to product coverage and harmonisation of the population coverage, the HICP for 1999 has been recalculated as if the new Regulations had come into effect a year earlier. The weights used in the calculation are shown in Table 2. The results are summarised in Table 3. It should be noted that the results are illustrative only and, because they are based on a single year's analysis, should not be used to draw general conclusions about the effect of the new Regulations in future years. It should also be noted that the official 12-month percentage changes for 2000 will be calculated by reference to the HICP indices for 1999 calculated on the basis prevailing prior to the new Regulations.

Table 3 shows that the effect of the new Regulations in 1999 would have been to lower the overall UK HICP slightly, by 0.1 index points on average over the year. The changes within COICOP divisions are more substantial. For education and health, this largely reflects changes to the coverage of goods and services. For others, such as food and non-alcoholic beverages and furniture, household equipment etc, the changes reflect movements in the relative weights between the component sub-indices.

More detailed illustrative results for 1999 are available electronically from the author on request.

Future development of the HICP

The HICP is still under development. Further extensions to the coverage of goods and services will come into effect with the January 2001 index (as described in a previous section). Eurostat and Member States are also considering the possibility of extending the HICP to include owner-occupier housing costs. Work is also proceeding on a number of other fronts, such as quality adjustment and sampling, with a view to improving the comparability of the HICPs still further.

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1 HICP: Detailed weights data for 2000

	Weight
HICP (Overall Weight)	1 000
01 Food and Non-Alcoholic Beverages	121
02 Alcoholic Beverages and Tobacco	57
03 Clothing and Footwear	70
04 Housing, Water, Electricity, Gas and other Fuels	118
05 Household Furnishings,Equipment and Maintainance	78
06 Health	14
07 Transport	161
08 Communications	25
09 Recreation and Culture	149
10 Education	13
11 Resturants and Hotels	137
12 Miscellaneous Goods and Services	57
01.1 Food	109
01.1.1 Bread and Cereals	19
01.1.2 Meat	27
01.1.3 Fish	5
01.1.4 Milk, Cheese and Eggs	14
01.1.5 Oils and fats	2
01.1.6 Fruit	9
01.1.7 Vegetables including potatoes and tubers	18
01.1.8 Sugar,jam,syrups,chocolate and confectionery	12
01.1.9 Food products nec[1]	3
01.2 Non-Alcoholic Beverages	12
01.2.1 Coffee, Tea and Cocoa	3
01.2.2 Mineral Waters, Soft Drinks and Juices	9
02.1 Alcoholic Beverages	26
02.1.1 Spirits	7
02.1.2 Wine	12
02.1.3 Beer	7
02.2 Tobacco	31
03.1 Clothing	60
03.1.2 Garments	56
03.1.3 Other clothing and clothing accessories	2
03.1.4 Dry-cleaning,repair and hire of clothing	2
03.2 Footwear including Repairs	10
04.1 Actual Rentals for Housing	53
04.3 Regular maintainance and repair of the dwelling	20
04.3.1 Products for maintainance and repair	10
04.3.2 Services for maintainance and repair	10
04.4 Misc. services relating to the dwelling	12
04.4.1 Water supply	6
04.4.3 Sewerage collection	6
04.5 Electricity, gas and other fuels	33
04.5.1 Electricity	17
04.5.2 Gas	13
04.5.3 Liquid Fuels	2
04.5.4 Solid Fuels	1
05.1 Furniture,furnishings,decorations,carpets	33
05.1.1 Furniture and furnishings	27
05.1.2 Carpets and other floor coverings	6
05.2 Household Textiles	8
05.3 Household appliances, fitting and repairs	12
05.3.1/2 Major appliances and small electric goods	11
05.3.3 Repair of household appliances	1
05.4 Glassware,tableware and household utensils	7
05.5 Tools and equipment for house and garden	6
05.6 Goods and services for routine maintainance	12
05.6.1 Non-durable household goods	7
05.6.2 Domestic services and home care services	5
06.1 Medical products, appliances and equipment	10
06.1.1 Pharmaceutical products	7
06.1.2/3 Other medical and therapeutic equipment	3
06.2 Out-patient services	4
06.2.1/2 Medical services and paramedical services	2
06.2.3 Dental services	2
07.1 Purchase of vehicles	55
07.1.1 New and second-hand cars	52
07.1.2/3 Motorcycles and bicycles	3
07.2 Operation of personal transport equipment	74
07.2.1 Spare parts and accessories	7
07.2.2 Fuels and lubricants	38
07.2.3 Maintainance and repairs	21
07.2.4 Other services	8
07.3 Transport Services	32
07.3.1 Passenger Transport by railway	8
07.3.2 Passenger Transport by road	14
07.3.3 Passenger Transport by air	9
07.3.4 Passenger Transport by sea and inland waterway	1
08.1 Postal services	2
08.2/3 Telephone and telefax equipment and services	23
09.1 Audio-visual equipment and related products	20
09.1.1 Reception and reproduction of sound and pictures	7
09.1.2 Photographic,cinematographic and optical equipment	3
09.1.3 Data processing equipment	3
09.1.4 Recording media	6
09.1.5 Repair of audio-visual equipment an related products	1
09.2 Other major durables for recreation and culture	7
09.2.1 Major durables for in/outdoor recreation	7
09.3 Other recreational items, gardens and pets	33
09.3.1 Games, toys and hobbies	15
09.3.2 Equipment for sport and open-air recreation	5
09.3.3 Gardens, plants and flowers	5
09.3.4 Pets and related products	8
09.4 Recreational and cultural services	36
09.4.1 Recreational and sporting services	14
09.4.2 Cultural services	22
09.5 Books, newspapers and stationery	25
09.5.1 Books	4
09.5.2 Newspapers and periodicals	10
09.5.3 Misc. printed matter, stationery and drawing materials	11
09.6 Package Holidays	28
10.0 Education	13
11.1 Catering services	116
11.1.1 Restaurants and cafes	109
11.1.2 Canteens	7
11.2 Accomodation services	21
12.1 Personal Care	29
12.1.1 Hairdressing and personal grooming establishments	8
12.1.2/3 Appliances and products for personal care	21
12.3 Personal effects nec[1]	9
12.3.1 Jewellery, clocks and watches	7
12.3.2 Other personal effects	2
12.4 Social protection	6
12.5 Insurance	6
12.5.2 Contents insurance	2
12.5.3 Health insurance	2
12.5.4 Car Insurance	2
12.6 Financial services nec[1]	1
12.6.2 Other financial services nec[1]	1
12.7 Other Services nec[1]	6

(1) nec - not elsewhere covered

Source: Office for National Statistics

Table 2
HICP weights for 1999

parts per thousand

	Published weights for 1999	Estimated weights for 1999 consistent with coverage of weights for 2000	Difference
COICOP division			
01 Food and non-alcoholic beverages	141	123	-18
02 Alcoholic beverages and tobacco	63	54	-9
03 Clothing and footwear	68	75	7
04 Housing, water, elelctricity, gas and other fuels	133	115	-18
05 Household furnishings, equipment and maintenance	92	79	-13
06 Health	7	14	7
07 Transport	167	155	-12
08 Communication	23	26	3
09 Recreation and culture	133	154	21
10 Education	10	13	3
11 Hotels, cafes and restaurants	115	135	20
12 Miscellaneous goods and services	48	57	9
All divisions	**1000**	**1000**	**0**
COICOP Group			
01.1 Food	127	111	-16
01.2 Non-alcoholic beverages	14	12	-2
02.1 Alcoholic beverages	30	26	-4
02.2 Tobacco	33	28	-5
03.1 Clothing	56	65	9
03.2 Footwear including repairs	12	10	-2
04.1 Actual rents for housing	57	52	-5
04.3 Regular maintenance and repair of the dwelling	20	19	-1
04.4 Other services relating to the dwelling	16	11	-5
04.5 Electricity, gas and other fuels	40	33	-7
05.1 Furniture, furnishings, carpets & other floor coverings	42	33	-9
05.2 Household textiles	7	8	1
05.3 Major household appliances	14	12	-2
05.4 Glassware, tableware and household utensils	7	8	1
05.5 Tools and equipment for house and garden	8	6	-2
05.6 Goods and services for routine household maintenance	14	12	-2
06.1 Medical products appliances and equipment	7	10	3
06.2 Out-patient services	..	4	4
07.1 Purchase of vehicles	68	56	-12
07.2 Operation of personal transport equipment	78	67	-11
07.3 Transport services	21	32	11
08.1 Postal services	2	2	0
08.2 Telephone and telefax equipment and services	21	24	3
09.1 Audio-visual photographic and data processing equipment	18	24	6
09.2 Other major durables for recreation and culture	0	7	7
09.3 Other recreational items & equipment; gardens & pets	28	36	8
09.4 Recreational and cultural services	35	35	0
09.5 Newspapers books and stationery	19	25	6
09.6 Package holiday	33	27	-6
10.0 Education	10	13	3
11.1 Catering	109	114	5
11.2 Accommodation services	6	21	15
12.1 Personal care	26	29	3
12.3 Personal effects n.e.c.	8	10	2
12.4 Social protection	..	5	5
12.5 Insurance	6	6	0
12.6 Financial services n.e.c.	1	1	0
12.7 Other services n.e.c.	7	6	-1
Total	**1000**	**1000**	**0**

n.e.c. = not elsewhere classified

Table 3

Estimated HICP for 1999, consistent with coverage from 2000

	Food and non-alcoholic beverages	Alcoholic beverages and tobacco	Clothing and footwear	Housing, water, electricity, gas and other fuels	Household furnishings equipment and maintenance	Health	Transport	Communication	Recreation and culture	Education	Hotels, cafes and restaurants	Miscellaneous goods and services	HICP (overall index)
Estimated index (1996=100)													
1999 Jan	102.6	113.6	87.8	103.9	98.7	107.5	106.7	94.6	101.5	115.0	109.9	108.5	103.6
Feb	102.6	113.7	88.6	103.8	99.9	107.7	106.7	94.4	101.3	115.0	110.1	108.8	103.8
Mar	101.9	115.8	89.9	103.9	101.4	107.8	108.1	94.4	101.3	115.0	110.2	108.5	104.3
Apr	101.3	116.6	89.5	105.2	99.8	108.6	109.7	94.1	101.6	115.0	110.8	109.4	104.7
May	102.1	116.8	90.2	105.1	100.9	108.8	109.8	93.6	101.9	115.0	111.2	109.6	105.0
Jun	101.3	117.3	90.1	105.2	100.2	109.0	109.7	93.2	101.8	115.0	111.6	109.9	104.9
Jul	100.2	118.0	85.0	105.4	98.5	109.3	109.9	92.7	101.5	115.0	111.7	110.6	104.3
Aug	100.0	118.4	86.5	105.6	99.3	109.4	110.5	92.9	101.4	115.0	111.9	110.9	104.7
Sep	99.8	118.2	90.2	105.8	100.1	109.9	110.4	92.5	101.5	121.3	112.1	110.9	105.1
Oct	99.7	118.3	89.5	105.9	99.3	110.1	110.4	91.1	101.7	124.2	112.3	111.0	105.0
Nov	100.1	117.9	89.7	106.1	100.6	110.3	110.3	91.2	101.7	124.2	112.3	111.0	105.2
Dec	100.3	117.5	89.0	106.4	102.5	110.2	110.8	91.7	101.6	124.2	112.5	110.9	105.4
Difference compared with actual index													
1999 Jan	0.0	0.0	0.0	0.0	-0.1	0.4	-0.2	0.0	-0.2	-0.1	0.0	0.0	-0.1
Feb	0.0	0.0	0.0	0.0	-0.1	0.1	-0.1	0.0	-0.1	-0.1	-0.1	0.0	-0.1
Mar	-0.1	0.0	0.0	0.0	-0.2	0.2	-0.4	0.0	-0.2	-0.1	-0.1	0.0	-0.2
Apr	-0.2	0.1	0.0	-0.1	-0.2	0.8	-0.5	0.0	-0.3	-0.2	-0.1	0.0	-0.2
May	0.0	0.1	0.0	0.0	-0.2	0.9	-0.5	0.0	-0.2	-0.3	-0.1	0.0	-0.2
Jun	-0.2	0.1	0.0	0.0	-0.1	1.2	-0.4	0.1	-0.3	-0.3	-0.1	0.1	-0.1
Jul	-0.3	0.1	0.1	0.0	-0.2	1.2	-0.3	0.1	-0.2	-0.4	-0.1	0.2	-0.1
Aug	-0.3	0.1	0.0	0.0	-0.2	0.7	-0.3	0.1	-0.3	-0.4	-0.1	0.1	-0.1
Sep	-0.3	0.1	0.0	0.0	-0.2	0.4	-0.2	0.1	-0.4	5.8	-0.1	0.2	-0.1
Oct	-0.3	0.1	0.0	0.0	-0.2	0.4	-0.1	0.2	-0.6	2.7	-0.1	0.1	-0.1
Nov	-0.2	0.1	0.0	0.0	-0.2	0.2	0.2	0.2	-0.6	2.6	-0.1	0.1	0.0
Dec	-0.2	0.1	0.0	0.0	-0.4	0.3	0.3	0.2	-0.7	2.6	-0.1	0.1	-0.1

ONS plans for the 2000 and 2001 Blue Book and Pink Book

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Introduction

The United Kingdom National Accounts and Balance of Payments are undergoing a sustained process of development. Some of these developments arise from later stages in the implementation of the European System of Accounts 1995 (ESA95); others from the development of new methodology and new data sources. There is also a continuing need to ensure that new economic developments are properly accounted for. As part of our policy to inform users about forthcoming changes to the national accounts and balance of payments, we have for the past few years published articles describing developments planned for subsequent *Blue Books* and *Pink Books* and related publications such as the *Input-Output Supply and Use Tables*. The most recent was published in July 1999 and covered publications in 2000 and 2001. This article updates the plans described there.

Revisions policy for 2000 and 2001

The policy for the 2000 *Blue Book, Pink Book* and related publications is to restrict revisions, with one exception, to 1998 and later. The exception is new estimates for capital consumption, capital stock and balance sheets; details are given below.

Last July's *Economic Trends* also included an article that described our plans for improving the coherence of annual and monthly inquiry estimates of manufacturing output. At that early stage, we had hoped to be in a position to introduce these improved estimates in this year's *Blue Book* and *Input-Output Supply and Use Tables*. However, because of the complexity of the problem and the desire to fully quality assure this process, we now plan to make these changes next year. This process should result in improved estimates of the distribution of value added by industry, but have little, if any, impact on estimates of growth for GDP.

We have begun the review of national accounts methodology described in last July's *Economic Trends* article. Specific reviews have been supported by the introduction of processes and peer group appraisals that have ensured that each methodological change is subject to rigorous scrutiny. We plan to include these improved methodologies in the 2001 *Blue Book*. Details of the substantial package of improvements include the following:

- inclusion of estimates for smuggling of alcohol and tobacco;
- change in treatment of interest rate swaps in line with proposed new international standard;
- reclassification of detailed series for individual consumption expenditure to ESA 95 standard;
- expansion of the use of direct measures of government output;
- improved quality of indicators of value added in the service industries;
- clarification of the application of ESA95 changes to taxes;
- review of treatment of individual transaction lines within sector and financial accounts;
- co-ordinated portfolio investment survey to measure overseas assets held by UK residents;
- inclusion of results from the new and improved Annual Business Inquiry (ABI), the PRODCOM inquiry and the annual all-industry Purchases Inquiry.

Publications in 2000

There will be no major changes to presentation in the 2000 *Blue Book* or *Pink Book*, though there will be some minor amendments to table contents and formats. Last year saw the inclusion of a new chapter on environmental accounts in the *Blue Book*; there are plans to include in this year's chapter new analyses of the accounts for natural assets, energy, air emissions and environmental taxes. The *Input Output Supply and Use Tables* will include new analyses. A new edition of the *Methodological Guide* to *Input-Output Supply-Use Tables* based on ESA95 will be issued towards the end of the year.

Issues for the 2000 *Blue Book* and *Pink Book*

Capital consumption, capital stock and non-financial balance sheets

Over the last few years substantial progress has been made in improving the methodology for estimating capital stocks and non-financial balance sheets, to ensure that where possible estimates use data rather than model-based methodologies. This progress has been reported in *Economic Trends*, most recently in the November 1999 issue. Full and definitive balance sheets together with detailed analyses of capital stock and consumption of fixed capital will be published in the 2000 *Blue Book*. The new estimates of capital consumption will affect GDP and the production, income and capital accounts.

Government output at constant prices

There is a continuing project to measure the output of areas of general government directly, rather than assume that it equals the volume of inputs such as staff numbers (see Caplan (1997)). The coverage of these new measures within GDP will be expanded in 2000 to include the Courts, the Legal Aid Board, the Agricultural Intervention Board and the Prisons and Probation Services. In line with revisions policy, the changes will affect data for 1998 and later. Further developments, and the application of the new methodology to earlier periods, will be included in the 2001 *Blue Book*.

Publications in 2001

The scale of changes to methodology underlying the data in the 2001 *Blue Book* suggests that there will be a need to make available details of the new methodologies through a revised version of *National Accounts Concepts Sources and Methods*. Consultation with users about whether they would prefer a completely new edition, or a package of amendments - possibly as downloadable files via the Internet - suggest that the latter would be more appropriate. Work has commenced on the development of a resource use account for the Environmental Accounts chapter of the *Blue Book*, though it is too soon to say whether it will be ready for 2001.

Treatment of interest rate swaps

Figures currently presented in the *Pink Book* and the quarterly balance of payments first release for portfolio investment income include settlement flows on interest rate swaps (IRS) and forward rate agreements (FRA). This treatment is in line with the original version of the IMF balance of payments manual 5th edition (BPM5). There has been an ongoing international debate as to whether this treatment should be amended, and at the end of 1999 the IMF revised BPM5. The change is currently going through the ESA95 approval process, and will be implemented in the 2001 *Pink Book* and *Blue Book*. The proposed treatment agreed internationally is to reclassify IRS and FRA to the financial account as part of a new financial derivatives category. Apart from ensuring consistent treatment across all derivative products, the rationale for reclassifying interest rate swaps is that interest income is defined as the return on capital but interest rate swap contracts do not provide any capital at their inception. They are increasingly held and traded for purposes other than changing the cost of capital.

An article giving more detail of the changes to annual economic accounts publications in 2001 will be published early next year.

National Accounts developments beyond 2000

As explained earlier, much of the national accounts development programme is driven by ESA95 requirements. The developments after 2001 are focussed on two areas: analytical input-output tables and associated analyses (5-yearly only); and improvement to constant price estimates. Over the period to 2005 we will be contributing to the harmonisation of constant price estimates across EU member states by improving deflation methodology. We plan to introduce improvements to the comparability of UK estimates of growth by introducing chain-linked estimates of GDP and its components by 2002. A summary of changes is given in the box below.

Development	Date of implementation
Input-Output supply and use tables at constant prices (1995-1999).	2002
Input-Output analytical tables: covering symmetric input-output tables for domestic output and imports; 5-yearly tables cross-classified by industry (data for 1995 in 2002, and for 2000 in 2003).	2002
Annually chain-linked estimates of constant price GDP and its components.	2002-2003
5-yearly cross-classification by industry (year 2000): ● production accounts by industry (60 industries) and sector; ● capital formation by industry and product (31 industries x 3 products) (current and constant prices); ● fixed assets by industry and product (31 industries x 3 product groups);	2003
Improved methods for deflation of constant price estimates.	2000-2005
Financial intermediation services indirectly measured.	Implementation date not yet determined
Treatment of monetary gold.	by 2005

An article in the February 2000 edition of *Economic Trends* described a programme of new investment in economic statistics. Among the objectives of this programme is the improvement in the quality and coherence of existing outputs and the strengthening of the statistical infrastructure underpinning data collection, leading to improvements in the quality and coherence of the national accounts.

Timing of annual publications

We intend to publish the revised quarterly national accounts consistent with the 2000 *Blue Book* in late June. The standard quarterly electronic data sets consistent with the *Blue Book* and *Pink Book* will be released on the same day, as will the electronic version of the Input-Output Supply-Use tables. The *Blue Book*, *Pink Book* and *Input-Output Supply and Use Tables* will appear in August 2000.

Publication in 2001 will be somewhat later, to accommodate the extra analyses required that year, and the longer-run revisions planned.

We welcome the views of national accounts users on any of the issues raised in this article. Contact names are given below.

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