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Economic Trends

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Contents

In Brief

Articles

This month we feature four articles.

Amanda Tuke and Jon Beadle of the ONS explain the effect of annual chain-linking on *Blue Book* 2002 annual growth estimates. Chained volume measures for GDP and GDP components will be published for the first time in the UK on September 30th 2003. This article describes the results from test-running the new annual chain-linking (ACL) systems used for compiling these chained volume measures using inputs consistent with *Blue Book* 2002. The results show that effect on GDP growth rates published in *Blue Book* 2002 as a result of ACL are no larger than +/-0.2 per cent from 1995 to 2001.

Anna Soo and Zina Charmokly of the ONS describe the application of annual chain-linking to the Gross National Income system, which will take effect from September 2003. This article outlines the complexities encountered under the fixed base system and how the new method of annual chain-linking improves the consistency of calculations. It is important to note that the values shown in this article have been constructed to illustrate the calculations not to estimate the effect of annual chain-linking.

Pam Davies and Polly Hopwood of the ONS, outline the interpretation of retail sales data. This article describes the main data sources and current practices used to produce the monthly Retail Sales Index (RSI). It also gives a guide on interpretation of the RSI, including comparisons with other data sources. The final section describes plans to rebase the RSI onto 2000=100 and also describes the triennial review of user need from the RSI.

Gareth Jones of the ONS discusses economic statistics and the Standard Industrial Classification. Classification systems need to be revised periodically because, over time, new products, processes and industries emerge. In January 2003, a minor revision of NACE Rev 1, known as NACE Rev 1.1, was published in the Official Journal of the European Communities. Consequently, the UK was obliged to introduce a new Standard Industrial Classification, SIC(2003) consistent with this. The UK took the opportunity to also update the national Subclasses following a consultation process with businesses, professional bodies, trade associations and other government departments.

Changes

Table 5.4

Building societies commitments and advances on new dwellings series (AHLO and AHLS) have been withdrawn as the data ceased in March 2001.

Table 6.1

Sterling exchange rates against the following currencies have been withdrawn, as the series ceased in 1998: French franc (AJFE), Italian lira (AJFF), Deutsche-mark (AJFH), and Spanish peseta (AJFM). They have been replaced by: Danish kronor (AJFK), Norwegian kroner (AJFJ), Swedish kronor (AJFI) and Hong Kong dollar (AJFU)

Economic Update - April 2003

Michael Wycherley, Macroeconomic Assessment - Office for National Statistics

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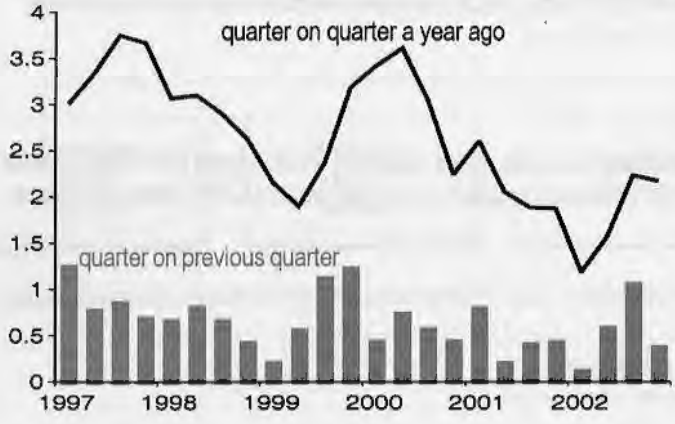
Overview

GDP data shows growth a little weaker at the end of 2002. Manufacturing output is falling slightly and growth in services output is more subdued, although the construction sector continues to show very strong growth. External indices of output generally echo weakening towards the end of 2002 and show this persisting at the start of 2003. From an expenditure perspective there is tentative evidence that household demand is weakening. Private investment declines appear to have arrested, although bankruptcies are increasing. Government demand has remained strong despite weak revenues, which have returned public sector finances to deficit. Trade demand grew strongly in the second quarter of 2002 but has fallen over the second half of the year. The rate of unemployment remains low, although there has been little change over the past 2 years. Private sector wage pressures are minimal. Producer prices have picked up due mainly to oil price rises, and RPIX remained above target.

GDP activity - overview

Gross domestic product (GDP) quarterly growth in the fourth quarter of 2002 was a little subdued, at 0.4 per cent. Growth comparing the fourth quarter of 2002 with the same quarter a year ago was 2.2 per cent, the same as in the year to the third quarter of 2002 (figure 1). For 2002 as a whole, growth was 1.8 per cent compared with the previous year, down from 2.1 in 2001 and 3.1 in 2000. In the medium term, 2002 saw the lowest growth and the first figure below two per cent since 1992.

Figure 1
GDP
growth



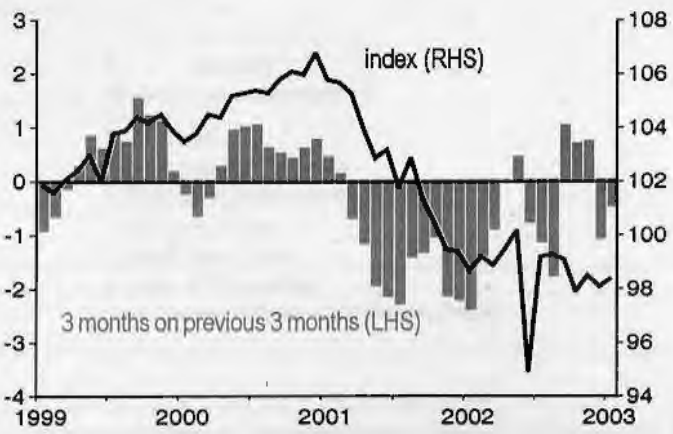
The Jubilee holidays taken in June distort interpretation of the data. The estimated Jubilee adjusted profile produced by the ONS, suggests that growth was weak in the first quarter, rebounded very strongly in the second and fell back alittle in the second half of the year. Demand data shows that the primary determinant of this profile has been movements to trade, which grew very strongly in the second quarter and then deteriorated sharply in the third and fourth quarters.

Overall, movements in the UK economy are similar to those around the world with the recovery in the main industrial economies seen in the first half of 2002 a little more tentative in the second half. Much of this world recovery was export led, and for most economies this may have fallen back in the second half of the year. Moreover, the sharp declines in investment that were the most obvious cause of weakness in 2001 have not yet been reversed to any substantial degree.

Output

The more subdued GDP growth in the fourth quarter is partly due to a quarterly decline of 1.0 per cent in manufacturing output. This followed manufacturing output stabilizing in much of 2002 after the sharp fall in 2001 (figure 2). Latest monthly figures show a rise of 0.3 per cent in manufacturing output in January 2003 compared with December 2002. January also saw the lowest annual fall since the decline began in 2001. Underlying the headline figures, the recent rise was due to an increase in output in the electrical and optical equipment industries of 3.5 per cent, caused by a 24.1 per cent increase in output in the manufacture of computers. Output in these industries has been volatile but broadly flat since the start of 2001.

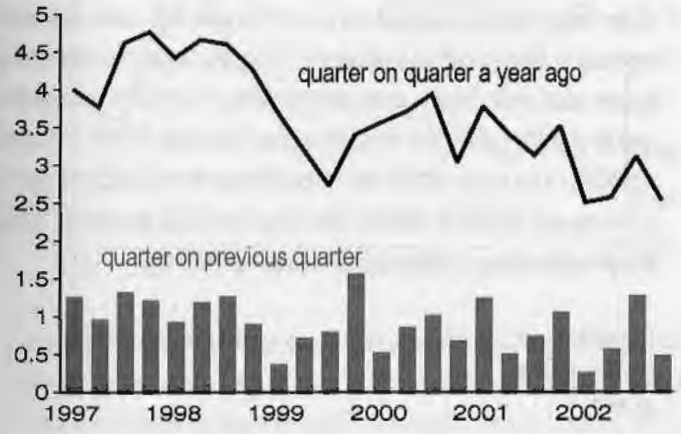
Figure 2
Index of manufacturing
growth



Manufacturing output excluding the computer industry would have fallen by 0.5 per cent in January. The production of motor vehicles peaked in August 2002 and then fell for the rest of 2002, before picking up slightly in January and February. Overall, comparing the three months to February with the same period a year ago there was a decline of 9.3 per cent in the production of passenger vehicles due to a fall in production for home markets of 24.3 per cent.

Service sector growth has slowed recently, fourth quarter quarterly growth in the service sector was 0.5 per cent (figure 3). While this was down from 1.2 per cent in the third, this third quarter figure was again exaggerated by the Jubilee holiday effect. Adjusting for the Jubilee, service sector growth was more subdued in the second half of the year as a whole. Growth in the service sector in 2002 as a whole was 2.7 per cent - the weakest since 1992.

Figure 3
Services output
growth



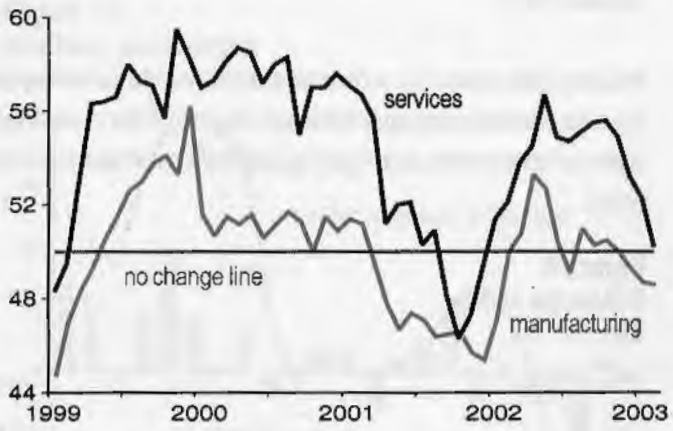
This weaker growth occurred in most service industries compared with the strong third quarter. Comparing the fourth quarter 2002 with the same quarter a year ago 'Hotels and restaurants' is the only sector to show falls, with growth remaining strong in 'Wholesale and retail', 'Financial intermediation' and 'Health and social work'. Growth in 'Post and telecommunications' has weakened significantly from 15.0 per cent at the end of 2000 to 2.6 at the end of 2002. The only sector to see a significant acceleration in the annual growth rate in the fourth quarter was 'Transport and storage', which saw growth change from a fall of 0.2 per cent to a rise of 2.7 per cent.

On the other hand, very strong construction output growth has continued to bolster overall GDP growth, quarterly growth in quarter four was 1.9 per cent. While this is weaker than in the first quarter of 2002 it is in line with average growth over the last two years. Growth in the year to the fourth quarter was 7.9 per cent, the highest since 1988, and this shows few signs of slowing. Lastly, in the second half of 2002 energy has remained volatile, having a negative impact on growth in the third quarter and a modest positive impact in the fourth.

External measures of output

External measures for both manufacturing and service sector suggest a weakening since the fourth quarter of 2002, although the sources are not unanimous.

Figure 4
CIPS
balances



The Confederation of British Industry (CBI) Industrial trends survey shows continued weakness since the middle of 2002, with the March survey indicating particular weakness in exports. The Chartered Institute of Purchasing and Supply (CIPS) figures for the manufacturing sector indicate marginal growth throughout the second half of 2002, but with renewed decline from December 2002 (figure 4). The CIPS services data shows the strengthening from the middle of 2002 fell away towards the end of 2002, with recent data suggesting only marginal growth (also figure 4). On the other hand the British Chamber of Commerce (BCC) survey shows both manufacturing and services sales and orders increasing into the fourth quarter.

Financial Market activity

Echoing the marginally weaker scenario since about the middle of 2002 have been equity indices. Following a levelling off through the first months of 2002, UK equity indices saw substantial declines resuming in the middle of the year. There were substantial falls in June, July and September. The index then rose in October and November, but fell again, by 5.5 per cent in December, and 9.1 per cent in January before ending February up 2.1 per cent on the end of January. The index has been volatile for much of March, being driven mainly by political events.

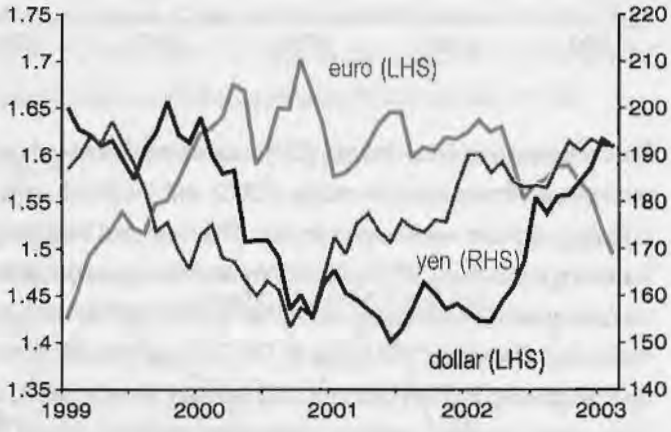
In the medium term, according to the FTSE all-share index, equity values

peaked at 3147 in December 1999. In February 2003 the index was 1755, a total decline of 55.8 per cent. This is the largest and most prolonged deterioration in equity values since the decline in the early 1970s, where the all-share index fell by 71 per cent between August 1972 and December 1974.

Outside the stock market, concerns are echoed in the corporate bond market, which, alongside long-term loans from banks, has been the primary source of corporate borrowing between 1997 and 2000. Spreads between corporate and government bonds rose substantially in the second half of 2002, although pulled back to some extent towards the end of 2002 and the start of 2003.

Recent months have seen a substantial strengthening of the pound against the dollar and weakening against the euro (figure 5). If this is sustained it is likely to have an effect upon both the trade position and input and output prices.

Figure 5
Exchange rates
£1=

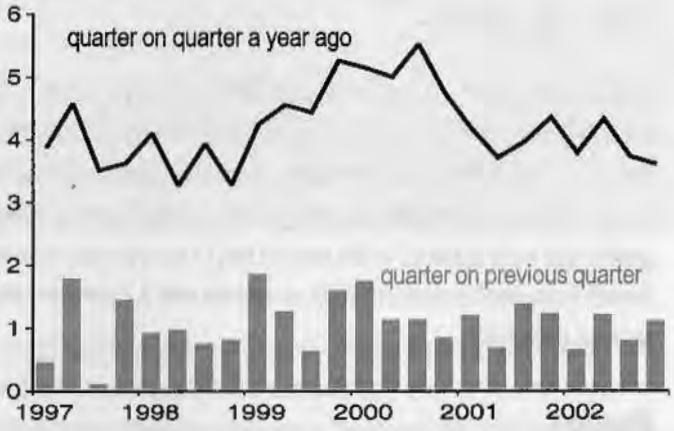


Household demand

National Accounts figures for the fourth quarter of 2002 showed a slight strengthening in quarterly growth of household's final consumption expenditure to 1.0 per cent from 0.7 per cent in quarter three (figure 6). The increase in constant price value terms was twice that of GDP as a whole, so the growth in this component can be seen as underpinning growth in GDP. However, other data is mixed as to whether this growth is likely to continue in 2003.

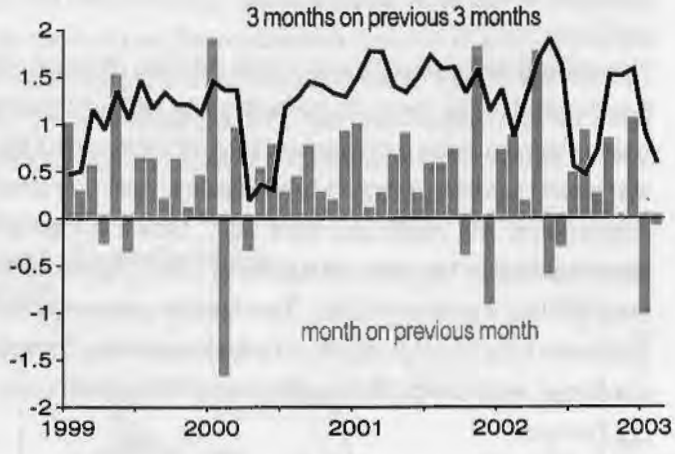
January and February both saw monthly falls in retail sales, with the January fall of 1.0 per cent being the largest fall since 2000. While there may be seasonal factors at work due to the difficulty in seasonal adjustment at Christmas, comparing the latest three months with the previous three months, which is less volatile, also indicates a slowdown (figure7) to 0.6 per cent in February. Comparing the three months to January with the same period a year ago shows growth of 4.5 per cent which is the lowest since the start of 2001.

Figure 6
Household Consumption
growth



Both the British Retail Consortium (BRC) and CBI figures showed a fairly sharp deterioration in sales at the end of the year with some degree of recovery in January before a fallback in February. Consumer confidence figures also show a fairly clear deterioration in confidence since the middle of 2002, particularly from December. However, the GfK measure attributes much of the deterioration in confidence to declining confidence in the general economic outlook rather than individual prospects, it may therefore have less relevance for purchasing decisions

Figure 7
Retail sales
growth

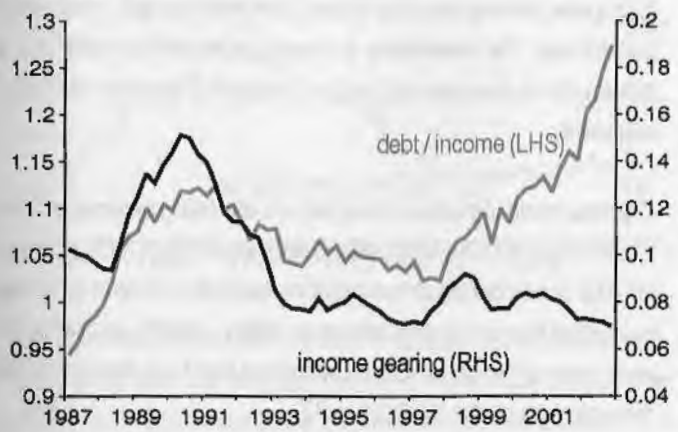


Similarly there is evidence that consumer credit growth may be easing. Gross consumer credit fell by 0.2 per cent in the fourth quarter, apart from the third quarter of 2001 this is the first fall since 1992. Annual growth in the fourth quarter has also eased to 6.5 per cent, continuing the downward

trend of 2002 from the peak of 14.3 per cent in the last quarter of 2001.

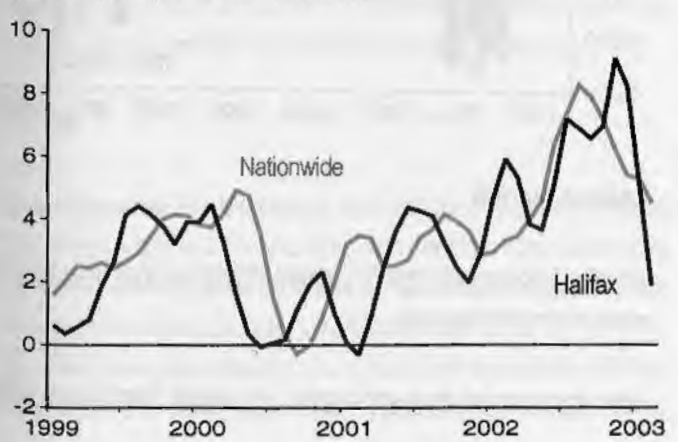
Nevertheless, the prolonged period of high growth in consumer credit shows that the present level of consumer demand is supported by continued addition to the stock of household debt. Debt to income ratios continue to attain new historic highs. As a result household demand is at least partly dependent on bank and building societies' willingness to lend and on households continuing to be willing to take on more debt and to be able to meet the interest payments on previous and new borrowing. Many emphasise though that with interest rates low, these debt servicing costs continue to remain relatively low as can be seen from the low income gearing ratio in figure 8.

Figure 8
Household
debt ratios



Part of this continued willingness to take on additional debt appears to be related to the very strong growth of house prices through 2002, and there are indications that this might be at least slowing. Looking at the three monthly growth in house prices suggests that there has been a marked slowdown in house price inflation since the middle of 2002 (figure 9). Aside from these latest trends house prices remain high relative to a year ago, with the rate in the year to February still over 20 per cent.

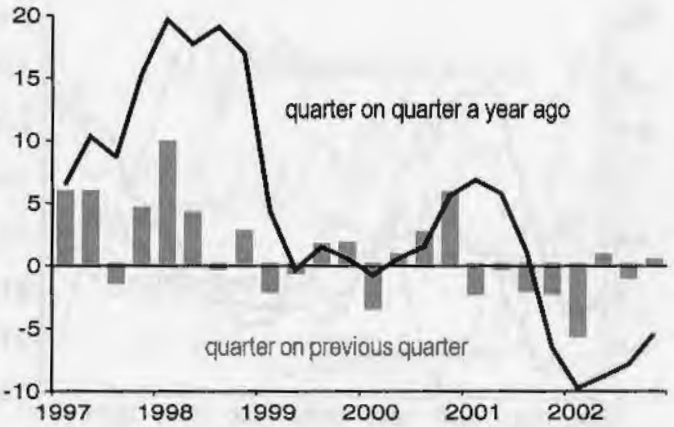
Figure 9
House prices
growth:3 months on previous 3 months



Business demand

Latest data now suggests that the decline in UK business investment appears to have been arrested after sharp falls in 2001 and the first quarter of 2002, although there are few signs of renewed growth. The fourth quarter of 2002 saw a rise of 0.4 per cent, which coming after a fall of 0.9 per cent in the third quarter and a rise of 0.8 per cent in the second quarter indicates flat investment. Annually business investment is 5.4 below the fourth quarter of 2001, however this is due to a large fall in the first quarter of 2002 (figure 10).

Figure 10
Business investment
growth



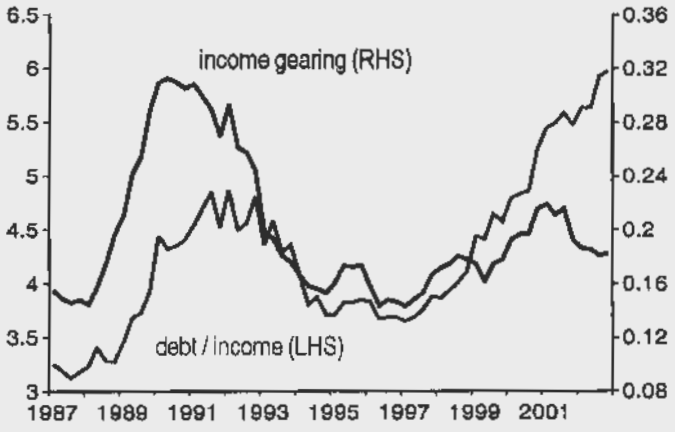
The annual decline is seen in both the manufacturing and service sectors, although there was an increase in investment from the distribution services sector, mainly from the retail industry in 2002. The fourth quarter saw a quarterly fall of 0.7 per cent in investment in manufacturing, while private sector investment in services rose by 0.02 per cent and construction and other production investment rose by 3 per cent. Analysis by industry within manufacturing shows the first quarterly rise in 'engineering and vehicles' investment since 2001, however with the exception of 'chemicals and man made fibres' and 'solid & nuclear fuels, oil refining' the other industries all saw falls in the fourth quarter. Private sector manufacturing investment by asset shows a fall of 14.4 in investment in vehicles, reversing a rise of 12.7 per cent in the third quarter. Investment in new building work fell by 1.0 per cent whilst investment in other capital equipment rose by 0.4 per cent.

External indices have shown a degree of weakening in investment intentions in the second half of the year, which appears to have stabilized at a low level at the end of the year but show little sign of improving.

The lower levels of investment set against some recovery to profits, lower dividends and a return to net lending have seen a recovery in the financial situation of the private non-financial corporation (PNFC) sector

in recent quarters. The sector switched from net borrowing in 2001 to net lending in 2002 of £13.1 billion. The switch to net lending has been accompanied by increases in both assets and liabilities and the ratio of liabilities to income continues to reach historic highs, although low interest rates leave the relative cost burden below that of the early 1990s (figure 11). DTI data show sharp increases in both company and individual insolvencies in the fourth quarter potentially suggesting increasing problems with debt and weakness in the corporate sector. Over the year the trend appears to be upwards, although company insolvency rates fell back a little between the second and third quarters.

Figure 11
PNFC
debt ratios



Government demand

Government demand has continued at a relatively robust pace, although growth throughout 2002 has been somewhat below the very strong growth in the second half of 2001. In the fourth quarter of 2002 constant price government expenditure rose by 0.8 per cent compared with the previous quarter, following growth of 1.3 per cent in quarter three. Constant price annual growth in 2002, at 4.2 per cent, was the highest since 1975. In cash terms, government expenditure grew by 9.5 per cent in 2002.

The ongoing strong growth in government expenditure has come as revenue growth is slowing, reflecting the slowdown in the economy. The effect is that the central Government sector has returned to net borrowing in 2002, following four years of net lending. Monthly public sector net borrowing data now extends to February 2003 and shows cumulative net borrowing for the financial year 2002-03 stands at £18.1 billion, this compares with net lending of £3.6 billion over the same period of the previous financial year. The data also illustrate the weakness in Inland Revenue tax receipts, with both income and corporation tax revenues seen falling in 2002 compared with 2001.

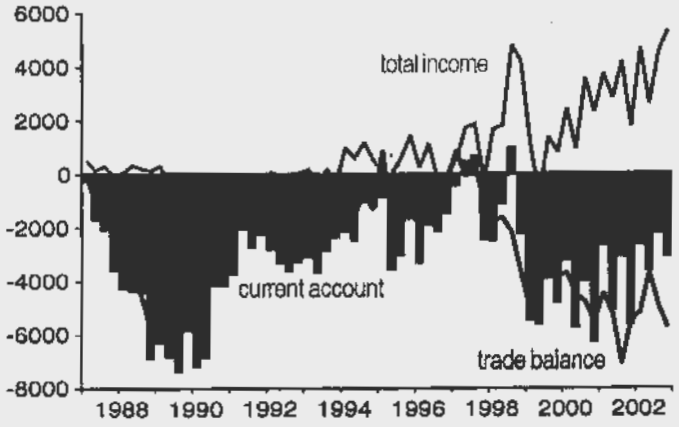
Trade and the Balance of Payments

Total import growth weakened in the second half of 2002, following stronger growth in the first half of the year. Quarters three and four both saw falls of 0.3 per cent compared with the previous quarter compared with a rise of 1.3 per cent in the second quarter. Monthly data shows imports growing by 4.0 per cent in January, however this follows falls in November and December and the trend has been for a gradual rise in imports. The movement in imports since the second half of the year has been due largely to falls in imports of goods, which fell in November and December before rising by 5.2 per cent in January 2003.

Total export growth also weakened in the second half of 2002, following strong quarterly growth in the second quarter of 3.8 per cent. Quarter four saw a fall of 3.4 per cent compared with a fall of 0.9 per cent in the third quarter, although monthly figures show improvements in December and January. The movements in exports have been primarily due to movements in the export of goods, the export of services has grown consistently.

The broad trend of gradually rising imports and falling exports has led to a worsening of the UK's trade balance since the middle of 2002. However, for 2002 as a whole the worsening of the balance on trade in goods has been offset by an improving balance on trade in services, and especially by an increasing income surplus, which has lead to an improvement in the current account in 2002 (figure 12).

Figure 12
Balance of payments
£ million



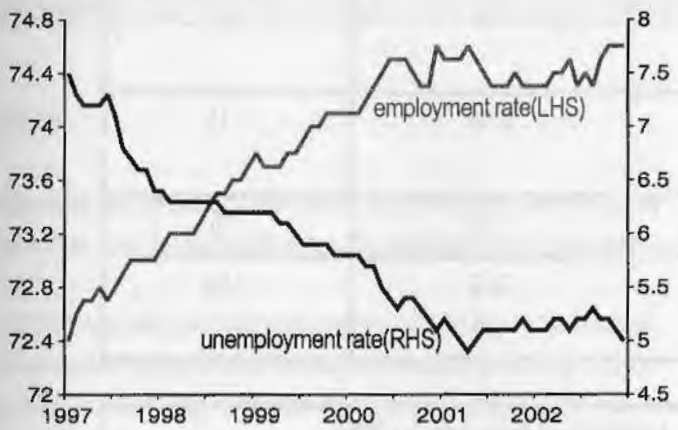
Labour Market

Headline labour market statistics remain fairly flat, as they have done for much of the past two years.

From the perspective of employment, the labour force survey (LFS)

employment rate rose to 74.6 per cent in Nov-Jan from 74.5 per cent in Aug-October (figure 13), the LFS count of employment increasing by 57,000 between the two periods. Employer survey 'workforce jobs' data has also shown a modest rise in the fourth quarter of 2002 (by 47,000 in total). From the perspective of unemployment, the ILO rate was 5.0 per cent in Nov-Jan, a modest improvement on both the previous period and a year ago (figure 13), and the claimant count rate at 3.1 per cent in February, the same as both the previous month and a year ago.

Figure 13
Labour Force Survey



The pattern seen in the middle of 2002 of rising part-time and stable full-time employment has reversed itself in recent months, with full-time employment rising 0.6 per cent and part-time employment falling by 0.9 per cent, although annual figures continue to show higher growth in part-time employment. The industry dis-aggregation from 'workforce jobs' figures shows that over the year to the fourth quarter: 154,000 manufacturing jobs have been lost and 255,000 service sector jobs created, and this trend continues in the fourth quarter. Of the new service jobs, 60 per cent were in the public sector areas (public administration, health and education), reflecting the importance of the public sector in job creation, although this has diminished somewhat in recent months.

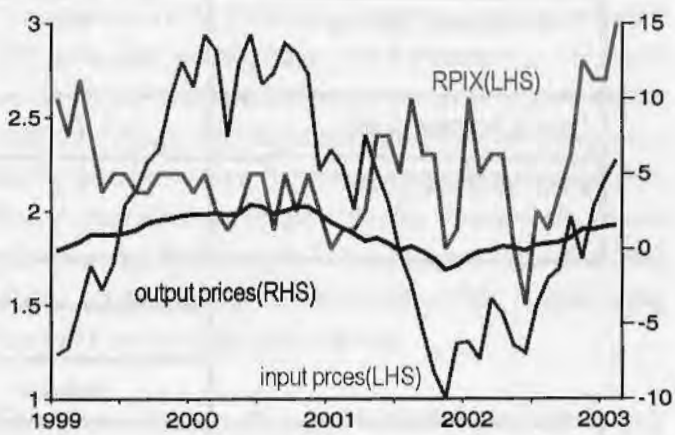
The average earnings index continues to suggest a lack of wage pressure. In January 2003 the headline rate was 3.6 per cent, slightly down on recent months and still well below the 4.5 per cent figure that the Bank of England consider broadly consistent with their inflation target.

Prices

Over the past few months producer price inflation has shown increases on both the output and the input sides, with the rise in input prices being particularly marked (figure 14). These figures primarily reflect the recent oil price increase and the recent improvement in the terms of trade. More generally, the ongoing relatively low outturns for producer price inflation may continue to reflect the deteriorating global conditions that began in 2001, with over-supply remaining a significant phenomenon.

Consumer price inflation has also picked up a little in recent months. The Government's target measure, RPIX, rose to 3.0 per cent in February, the highest rate since 1998, having been above the target of 2.5 per cent since November (figure 14). The higher recent figures were partly attributable to ongoing increases to the effects of high oil prices and the depreciation of housing component that is due to house price increases. Other sources of higher inflation are rises in household and leisure services prices.

Figure 14
Prices
growth, month on a year ago



Forecasts for the UK Economy

A comparison of independent forecasts, March 2003

The tables below are extracted from HM Treasury's "FORECASTS FOR THE UK ECONOMY" and summarise the average and range of independent forecasts for 2003 and 2004, updated monthly.

	Independent Forecasts for 2003		
	Average	Lowest	Highest
GDP growth (per cent)	2.0	-0.4	2.7
Inflation rate (Q4: per cent)			
- RPI	2.6	1.5	4.1
- RPI excl MIPs	2.5	1.8	3.7
Unemployment (Q4, mn)	0.99	0.85	1.15
Current Account (£ bn)	-21.1	-30.4	-9.8
PSNB *(2003-04, £ bn)	27.3	22.0	34.0

	Independent Forecasts for 2004		
	Average	Lowest	Highest
GDP growth (per cent)	2.4	-0.3	3.3
Inflation rate (Q4: per cent)			
- RPI	2.7	1.5	3.9
- RPI excl MIPs	2.4	1.5	3.3
Unemployment (Q4, mn)	1.04	0.75	1.45
Current Account (£ bn)	-21.3	-41.1	-8.0
PSNB* (2004-05, £ bn)	31.0	20.0	46.2

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 Claire Coast-Smith, Public Enquiry Unit 2/S2, HM Treasury, 1 Horse Guards Road, London SW1A 2HQ (Tel: 020-7270 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 - April 2003

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Overview

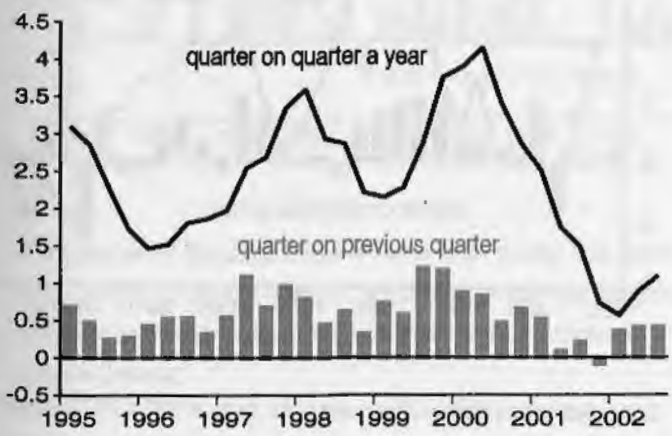
The fourth quarter shows growth in the major economies, although at a declining rate, with the exception of Germany, which did not grow in quarter four and Italy, where growth accelerated throughout 2002. Consumer demand is weak in most major economies with the USA in particular showing a marked slowdown. Trade also slowed in the latest period and investment demand is still at best weak or in decline in most major economies. Industrial output declined in all major economies in quarter four, reversing growth made in the earlier quarters of 2002. Unemployment is at best broadly flat or inching up in most economies, employment growth is weakening. Headline prices figures remain subdued, although rose mainly due to increases in the price of oil.

EU15

The latest data for 2002 quarter three shows that the EU economy grew by 0.4 per cent, the same rate of growth as the two preceding quarters.

EU GDP has been subdued since the start of 2001 (figure 1). The main driver of this has been falls in investment and falls in exports. In 2001 quarter four GDP declined for the first time since 1993 quarter one. A demand breakdown for quarter three shows a strengthening in consumer expenditure and exports over the last two quarters. Investment demand also made a modest contribution to quarterly GDP after six consecutive quarters of contraction.

Figure 1
GDP: EU15
growth



As with GDP, industrial production in the EU has been subdued since 2001, when the index grew by just 0.2 per cent. The index contracted in quarter four by 0.5 per cent, following three consecutive quarters of expansion. Annual growth for the year shows the index falling by 1.2 per cent.

Consumer prices in the EU have been inching up in the second half of 2002, with growth reaching 2.5 per cent in December up from 1.8 per cent in August. January 2003 figures show consumer price inflation slowing to 2.2 per cent although this is still above the ceiling targeted by the European Central Bank. However, the recent increase in the CPI is likely to reflect mainly an increase in oil prices. The same effect can be seen on prices at the factory gate, which had been falling for the first half of 2002, but started rising in the second half of 2002. Producer prices rose by 1.6 per cent in the year to January.

EU employment figures continue to show growth, although at a declining rate. Annual growth in the year to the third quarter was 0.5 per cent. The unemployment rate however is inching up with 7.9 per cent of the workforce unemployed as at January, up from a trough of 7.3 per cent in the second and third quarters of 2001.

Annual earnings showed growth in the year to the third quarter, of 3.3 per cent, following growth in the second quarter of 2.5 per cent and 3.4 per cent in the first quarter; the figures are volatile.

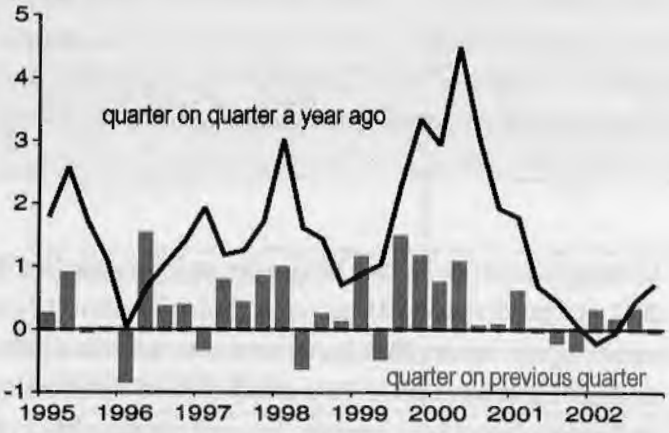
Germany

The German economy did not grow in the fourth quarter of 2002, having posted growth of 0.3 per cent in the previous quarter. Overall GDP grew by just 0.2 per cent for 2002 as a whole compared with 0.7 per cent in 2001(figure 2).

Recently, there has been a lack of any appreciable domestic momentum in the German economy. Household consumption fell by 0.4 per cent in 2002 and did not add to quarterly GDP growth in quarter four. Investment expenditure has been in decline showing contractions in annual growth in both 2001 and 2002 and government demand has made only small contributions in recent years. The impetus that came mainly from exports

in quarters two and three slowed considerably in quarter four. Germany's growth rate remains below the EU average with quarterly GDP being below the quarterly GDP growth rate of the EU as a whole in every quarter of 2002.

Figure 2
GDP : Germany
growth



Having grown for three consecutive quarters, the IOP contracted by 1.1 per cent in quarter four. This was dominated by a very large contraction in December of 3.5 per cent which was last approached in January 1995, when the index fell by 3.4 per cent, although monthly changes can be volatile. Overall in 2002, the index fell by 1.4 per cent. Growth in the index has been subdued since 2001, when it grew by only 0.5 per cent, compared to growth of 6.2 per cent in 2000.

The CPI shows consumer prices growing by 1.1 per cent in the year to December, down from growth of 2.1 per cent growth seen at the start of the year. Figures for the PPI extend till January 2003 and show prices at the factory gate increasing by 1.6 per cent in the year to January. This is a significant increase compared to the previous month's 0.9 per cent increase in producer prices and reflects recent increases in oil prices. Despite this, Germany has the lowest consumer price inflation of the largest Euro economies.

Unemployment in Germany continues to increase steadily, with the rate in January at 8.6 per cent, up from 8.5 per cent in December. There has been a gradual increase in the unemployment rate from the recent trough of 7.6 per cent in quarter one 2001. Similarly employment growth contracted in the third quarter of 2002, with annual growth figures for the quarter showing a decline of 0.8 per cent, accelerating from a decline of 0.4 per cent in the previous quarter.

Having hovered between 1.0 per cent and 1.1 per cent between 2001 quarter three and 2002 quarter two and despite the increase in unemployment, earnings growth has picked up in the year to the fourth quarter, growing by 2.4 per cent, the largest growth in earnings since 2000 quarter four.

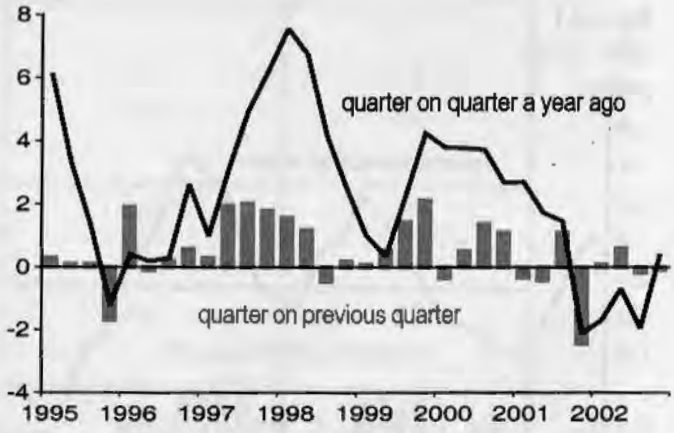
France

The latest data show that growth in the French economy slowed in the fourth quarter to 0.2 per cent, having grown by 0.3 per cent in the previous quarter. Overall in 2002, the economy grew by 1.2 per cent, the lowest growth rate since 1996.

The French economy has slowed significantly over the last two years, in line with global trends, although it outperformed the EU in the first quarter of this year. Consumer spending (helped by recent income tax cuts of five per cent in September) and government consumption drove growth in both 2002 as a whole and 2002 quarter four. This was offset by falls in investment and stocks (which has had a negative contribution to quarterly GDP in six of the last eight quarters).

Industrial production has contracted in France in the latest quarter, by 0.1 per cent, the second consecutive quarter of negative growth in the index. Quarter four's contraction was driven by a sharp fall in December, which wiped out the November rebound. Overall in 2002, the IOP contracted by 0.9 per cent having made an equivalent positive contribution to annual GDP growth in the previous year (figure 3).

Figure 3
France : IOP
growth



Consumer price inflation after rising in the second half of 2002 slowed slightly in January to 2.0 per cent from 2.3 per cent in the previous month, despite the increase in oil prices. Similarly, producer prices have been rising since the second half of 2002, having fallen in the previous five months. There was a 0.2 percentage point rise in the PPI from 0.4 per cent in December to 0.6 per cent in January.

The unemployment rate in France stabilised at 8.8 per cent of the workforce between July and October, up from the recent trough of 8.5

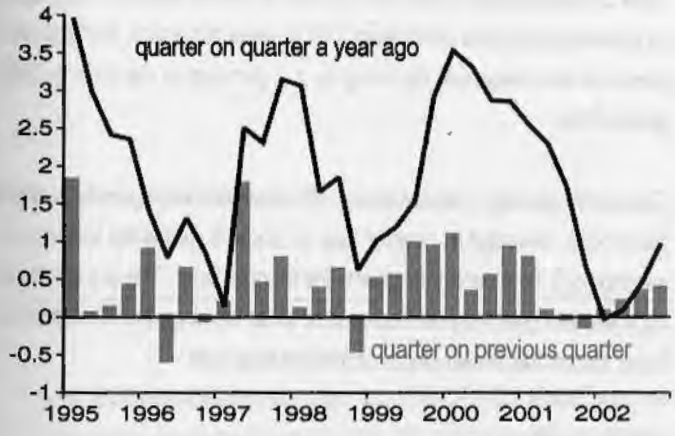
per cent in quarters two to four of 2001. However, as with most major economies, the unemployment rate has inched up in January by 0.1 percentage points to 9.0 per cent of the workforce. Employment growth also continued its slowdown in the third quarter of 2002, with an annual rate of 0.2 per cent, well down on growth of 2.1 per cent at the start of 2001.

Following on from the labour market conditions, annual earnings growth continued to ease, slowing from 4.1 per cent in the fourth quarter of 2001 to 3.5 in the third quarter of 2002.

Italy

Available data for 2002 quarter four show the Italian economy growing by 0.4 per cent, following growth of 0.3 per cent in quarter three. The Italian economy is alone in the major economies seeing an acceleration of growth through 2002 (figure 4). Overall in 2002, the economy grew by 0.4 per cent compared to growth of 1.8 per cent in the previous year and down from 3.1 per cent in 2000.

Figure 4
GDP: Italy
growth



A breakdown of the components of demand for quarter four are not available with this dataset, however, as with other economies, weakness is likely to be driven by low or falling investment and weak consumer and external demand.

Having grown in quarter three by 0.6 per cent, the IOP contracted in the fourth quarter by 0.5 per cent. Industrial production has contracted for six out of the last eight quarters. Annual figures show that for 2002 as a whole, the index contracted by 2.1 per cent, following a contraction of 1.0 per cent in the previous year. More generally, the IOP has contracted in Italy in three years out of the last six.

Inflation in Italy has stabilised somewhat for the past three months at 2.8 per cent, which is considerably above the ECB's ceiling of 2.0 per cent. However the increase in the CPI in the last few months can be attributed in part to the recent increases in oil prices. The PPI has also shown increases in the second half of 2002.

Latest figures on the Italian labour market shows unemployment falling slightly by 0.1 percentage points in October, having remained at 9.0 per cent of the workforce for eight months since February. Apart from the UK, the Italian labour market is currently the only one of the major EU economies where unemployment continues to improve. Employment growth was 0.9 per cent in the year to the fourth quarter of 2002.

Earnings growth picked up in the year to the fourth quarter to 2.8 per cent, but the figures are volatile from quarter to quarter.

USA

The latest figures for the US economy for 2002 quarter four show the economy growing by 0.4 per cent, following strong growth in the previous quarter of 1.0 per cent.

The US economy grew at between 3.6 per cent and 4.1 per cent between 1996 and 2000. However, in 2001, the effect of the global slowdown saw annual growth in that year slow to 0.3 per cent, with three quarters of negative growth from quarters one to three. Quarterly GDP growth in 2002 has been below growth rates seen in the 1990s although performance has been better than in every quarter in 2001 except quarter four. Overall, growth in 2002 was 2.4 per cent, driven mainly by strong consumer spending (stimulated in part by interest free credit on car deals) and strong government demand. The slightly weaker performance in quarter four is largely due to much weaker consumer spending as the impact of the one-off factors faded and also to a fall in exports. Import growth also weakened substantially in the last two quarters of 2002.

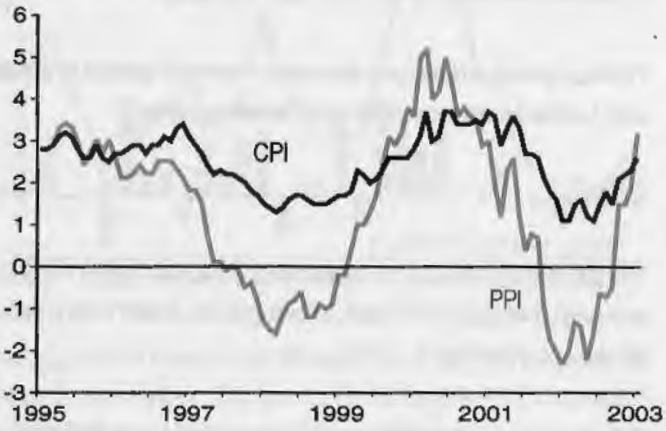
The index of production contracted in quarter four for the first time in 2002, by 0.8 per cent. Overall in 2002, the index contracted by 0.7 per cent which although negative is an improvement over the previous year's 3.5 per cent contraction.

Inflationary pressures had remained subdued since January 2002, and have only started increasing since October. Compared with December, the index inched up by 0.3 percentage points to 2.6 per cent in January. The Producer prices index also show prices increasing substantially at the factory gate in January by 3.2 per cent compared to an increase in December of 1.9 per cent (figure 5). These latest increases may be due in part to the recent increase in oil prices.

The US saw a sharp increase in unemployment in 2001 from 4.1 per

cent in January to 5.8 per cent in December. The deterioration slowed somewhat in the first three months of 2002, but the volatility in the figures since then offers no clear signs of recovery. The latest data shows the unemployment rate rising to 6.0 per cent in December and falling back in January to 5.7 per cent. Annual figures show that for 2002, unemployment was 5.8 per cent up from 4.8 per cent in the previous year.

Figure 5
CPI & PPI : USA
growth, month on a year ago



Possibly reflecting the slight improvement in the labour market, earnings growth improved in the year to January, with growth of 3.3 per cent up on 2.4 per cent in the year to the previous month.

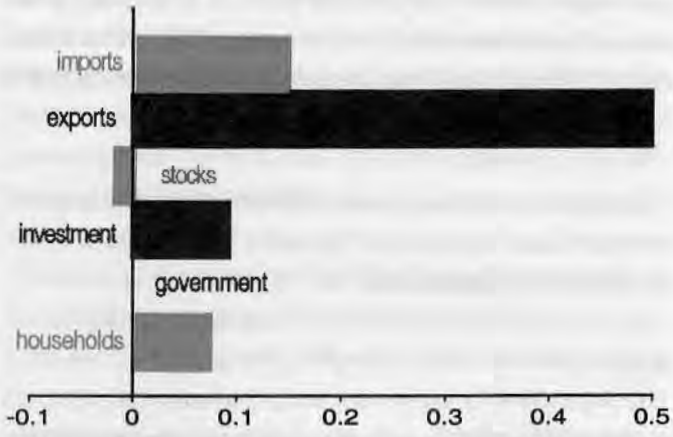
Japan

The Japanese economy grew by 0.5 per cent in the fourth quarter of 2002, following growth of 0.7 per cent in the previous quarter.

Japan has had low or negative GDP growth since 1997. Annual figures for 2002 shows the economy growing by just 0.3 per cent, similar to the previous year. The stronger growth in the later quarters of 2002 has been driven by a combination of stronger consumer demand, substantial stockbuilding (particularly in quarters two and three), and a fairly strong rebound in exports (figure 6). Consumer demand has been weak especially in the three years prior to 2001 possibly due to falling prices. Export growth has also been low due in part to the global economic slowdown. Investment spending contracted in 1998, 1999, 2001 and 2002.

Having shown strong growth in quarters two and three; the index of production has again contracted in quarter four by 0.9 per cent. Overall in 2002, the index contracted by 1.5 per cent, which, although negative, is a substantial improvement over the previous year's contraction of 7.0 per cent.

Figure 6
GDP : Japan
contributions in 2002 Q4



Consumer and producer price falls continue the deflation that began in mid-1998. Figures for the year to January show the consumer prices index falling by 0.4 per cent. Producer prices also show a similar story.

The slight improvement in the unemployment rate in November has been reversed with the unemployment rate increasing by 0.2 percentage points to 5.5 per cent in December and remaining at that rate in January. Recent rates of unemployment are very high by historical standards for Japan (unprecedented since 1960 when OECD records began). Employment growth is also negative, declining by 1.1 per cent in the year to 2002 quarter four.

Despite the present unemployment situation, earnings growth declines have been reversed in quarter four to show a moderate increase in earnings of 0.1 per cent in the year to the fourth quarter. This is a significant improvement over the previous quarter when earnings were 2.2 per cent lower than in the same quarter of the previous year.

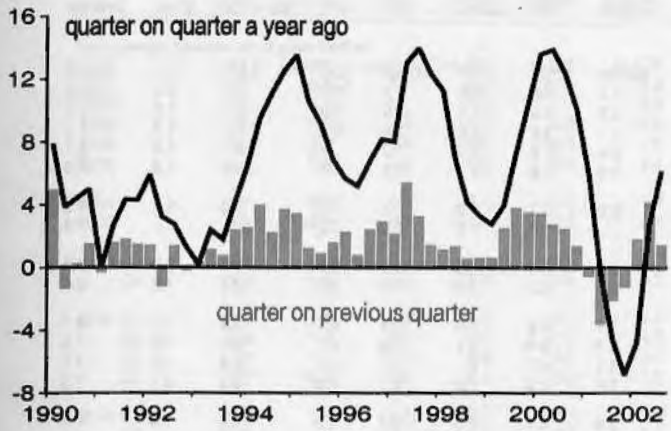
World Trade

Some data for world trade now extends to quarter three and generally shows a fall back in trade from the levels seen in the first half of 2002.

Growth in total manufactures exports slowed considerably from 4.3 per cent in quarter two to 1.9 per cent in quarter three. The slowdown was primarily due to slowing export growth to OECD countries (figure 7). On the export of goods side, OECD exports slowed from 3.8 per cent in quarter two to just 1.5 per cent in quarter three.

Import data for quarter three is only available for OECD countries and shows that import of manufactures also slowed considerably from 3.7 per cent to 1.7 per cent. Similarly, imports of goods data shows OECD imports slowing from 3.3 per cent in quarter two to 1.6 per cent in quarter three.

Figure 7
OECD exports of manufactures
growth



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 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. For world trade, goods includes manufactures, along with food, beverages and tobacco, basic materials and fuels.

Data for EU15, France, Germany, Italy, the USA and Japan are all available on an SNA93 basis. Cross country comparisons are now more valid

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
1996	1.7	1.2	0.3	0.4	–0.5	1.5	1.2	0.6	0.6	2.5	0.7	3.5	0.4	10.2
1997	2.6	1.3	0.2	0.7	0.1	3.1	2.7	3.8	1.5	2.0	0.9	3.1	1.0	10.0
1998	2.9	1.9	0.3	1.3	0.4	2.1	3.1	3.8	2.8	1.8	–0.3	2.8	1.9	9.4
1999	2.8	2.1	0.4	1.1	–0.2	1.8	2.4	1.8	2.0	1.2	–	2.7	1.9	8.7
2000	3.6	1.8	0.4	1.0	–0.1	4.3	3.9	4.6	2.3	2.5	4.6	3.3	1.9	7.8
2001	1.6	1.3	0.4	–	–0.4	0.9	0.6	0.2	1.9	2.5	1.2	3.0	1.3	7.3
2002	..	..	..	..	..	..	..	–1.2	1.5	2.0	0.2	..	..	7.6
1999 Q3	2.9	2.1	0.4	1.2	–0.3	2.1	2.5	2.1	1.9	1.2	0.6	3.6	2.0	8.6
Q4	3.8	2.1	0.4	1.2	–	3.3	3.4	4.2	2.8	1.6	2.3	2.7	1.8	8.4
2000 Q1	3.9	1.8	0.4	1.1	–0.1	4.3	3.7	4.2	2.4	2.1	4.1	3.6	1.7	8.1
Q2	4.1	2.2	0.4	1.2	–	4.4	4.1	5.5	3.1	2.3	4.7	3.6	1.9	7.9
Q3	3.4	1.8	0.4	1.0	–	4.3	4.1	4.7	2.1	2.7	4.8	2.6	1.8	7.7
Q4	2.9	1.5	0.4	0.9	–0.2	4.2	3.9	4.2	1.6	2.7	4.8	3.5	2.1	7.5
2001 Q1	2.5	1.4	0.4	0.5	–0.3	3.1	2.6	4.1	2.5	2.7	3.2	2.6	1.9	7.4
Q2	1.8	1.2	0.3	0.2	–0.2	1.5	1.3	0.5	2.2	2.9	2.4	3.4	1.4	7.3
Q3	1.5	1.2	0.4	–0.1	–0.4	0.2	–0.2	–0.6	1.8	2.5	0.8	3.4	1.2	7.3
Q4	0.8	1.2	0.4	–0.4	–0.7	–1.1	–1.4	–3.3	1.2	2.1	–0.9	2.5	0.8	7.4
2002 Q1	0.6	0.7	0.5	–0.6	–0.1	–1.1	–1.2	–3.1	1.2	2.2	–0.6	3.4	0.7	7.5
Q2	0.9	0.7	0.6	–0.7	–0.3	0.2	–0.4	–1.1	1.4	1.9	–0.4	2.5	0.7	7.6
Q3	1.1	0.8	0.5	–0.4	–0.1	1.1	0.8	–0.8	1.8	1.8	0.3	3.3	0.5	7.6
Q4	..	..	..	..	..	..	..	0.4	1.5	2.4	1.2	..	..	7.7
2002 Feb	..	..	..	..	..	..	..	–3.6	1.8	2.0	–0.7	..	..	7.5
Mar	..	..	..	..	..	..	..	–2.6	1.8	2.2	–0.4	..	..	7.5
Apr	..	..	..	..	..	..	..	–1.0	1.8	2.1	–0.3	..	..	7.5
May	..	..	..	..	..	..	..	–1.0	1.8	1.8	–0.4	..	..	7.6
Jun	..	..	..	..	..	..	..	–1.4	0.9	1.7	–0.5	..	..	7.6
Jul	..	..	..	..	..	..	..	–0.5	1.8	1.8	0.1	..	..	7.6
Aug	..	..	..	..	..	..	..	–1.3	1.8	1.8	0.4	..	..	7.6
Sep	..	..	..	..	..	..	..	–0.5	1.8	1.9	0.5	..	..	7.7
Oct	..	..	..	..	..	..	..	0.4	2.7	2.2	1.0	..	..	7.7
Nov	..	..	..	..	..	..	..	1.9	0.9	2.4	1.1	..	..	7.7
Dec	..	..	..	..	..	..	..	–0.7	0.9	2.5	1.4	..	..	7.8
2003 Jan	..	..	..	..	..	..	..	..	..	2.2	1.6	..	..	7.9

Percentage change on previous quarter										
	ILGL	HUDY	HUDZ	HUEA	HUEB	HUEC	HUED	ILHF	ILHZ	ILIT
1999 Q3	1.2	0.5	0.1	0.4	–	1.1	1.0	1.7	1.6	0.9
Q4	1.2	0.6	0.1	0.3	0.3	1.0	1.0	1.5	1.2	0.1
2000 Q1	0.9	0.5	0.1	0.2	–0.2	1.2	1.0	0.3	0.3	–0.4
Q2	0.8	0.5	0.1	0.3	–	1.0	1.0	1.9	–	1.3
Q3	0.5	0.2	0.1	0.2	–0.1	1.0	0.9	1.0	0.6	0.7
Q4	0.6	0.2	0.1	0.2	0.1	0.9	0.9	1.0	0.6	0.4
2001 Q1	0.5	0.5	0.1	–0.1	–0.3	0.1	–0.2	0.2	1.2	–0.6
Q2	0.1	0.3	0.1	–0.1	–	–0.5	–0.3	–1.6	–0.3	0.8
Q3	0.2	0.2	0.1	–0.1	–0.3	–0.3	–0.6	–0.2	0.3	0.6
Q4	–0.1	0.2	0.2	–0.1	–0.2	–0.4	–0.3	–1.7	–	–
2002 Q1	0.4	–	0.1	–0.2	0.3	–	–0.1	0.4	1.2	–0.6
Q2	0.4	0.3	0.1	–0.1	–0.1	0.8	0.5	0.4	–	0.8
Q3	0.4	0.3	0.1	0.1	–0.1	0.6	0.6	0.2	0.6	0.3
Q4	..	..	..	..	..	..	..	–0.5	–0.3	..

Percentage change on previous month		
	ILKF	ILKP
2002 Feb	–0.2	1.8
Mar	0.4	–
Apr	0.3	–0.9
May	–0.1	0.9
Jun	–	–0.9
Jul	–0.1	0.9
Aug	0.4	–
Sep	–0.2	–
Oct	–0.4	–
Nov	0.8	–
Dec	–1.7	–0.9
2003 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
IoP = Industrial Production
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
Unempl = Standardised Unemployment rates: percentage of total labour force

Source: OECD - SNA93

1 Includes statistical discrepancy

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
1996	0.8	0.5	0.4	–0.2	–0.4	1.3	0.8	0.7	–1.1	1.4	–1.2	3.5	–0.4	8.7
1997	1.5	0.4	0.1	0.2	–	2.9	2.0	3.7	–1.5	1.9	1.1	1.5	–0.3	9.6
1998	1.7	0.9	0.4	0.5	0.3	1.8	2.2	4.1	1.0	1.0	–0.4	1.8	1.5	9.1
1999	1.9	2.0	0.2	0.8	–0.4	1.5	2.3	1.6	0.4	0.6	–1.0	2.6	0.9	8.4
2000	3.1	0.9	0.2	0.7	0.2	4.4	3.3	6.2	1.4	1.9	3.4	2.7	0.6	7.8
2001	0.7	0.9	0.2	–1.1	–0.6	1.8	0.4	0.5	0.2	2.5	2.9	1.5	0.4	7.8
2002	0.2	–0.4	0.3	–1.4	0.1	0.9	–0.7	–1.4	–2.1	1.3	–0.4	1.7	..	8.2
1999 Q3	2.3	2.2	0.2	1.0	–0.6	2.0	2.5	1.9	–0.2	0.7	–0.7	2.7	1.4	8.4
Q4	3.3	1.9	0.2	1.2	–0.2	3.3	3.0	4.3	0.7	1.0	0.6	3.0	0.8	8.2
2000 Q1	2.9	0.5	0.2	0.8	–0.1	4.4	2.8	5.1	–0.2	1.7	2.3	2.8	0.5	7.9
Q2	4.5	1.9	0.3	0.9	0.2	4.2	2.9	6.7	4.4	1.6	2.6	2.4	0.8	7.8
Q3	3.0	1.1	0.1	0.6	0.2	4.0	3.0	7.1	1.6	2.0	3.7	3.3	0.5	7.7
Q4	1.9	0.3	0.4	0.4	0.3	4.9	4.4	5.9	–0.1	2.4	4.5	2.4	0.8	7.6
2001 Q1	1.8	1.1	0.2	–0.4	–0.3	3.5	2.3	6.0	1.0	2.5	4.8	2.0	0.7	7.6
Q2	0.7	0.8	0.2	–0.9	–0.3	2.3	1.4	1.4	–	3.2	4.7	2.0	0.6	7.7
Q3	0.5	0.8	0.2	–1.5	–1.0	1.8	–0.1	–1.2	0.6	2.5	2.6	1.1	0.2	7.8
Q4	0.1	0.9	–	–1.6	–0.9	–0.2	–1.8	–3.7	–0.7	1.8	0.3	1.0	–0.1	7.9
2002 Q1	–0.2	–0.3	0.2	–1.4	–0.8	–	–2.0	–4.0	–3.1	1.9	–0.2	1.1	–0.2	8.0
Q2	–0.1	–0.7	0.4	–1.8	0.1	0.6	–1.3	–1.8	–2.1	1.2	–0.9	1.0	–0.4	8.2
Q3	0.4	–0.4	0.4	–1.4	0.5	1.3	–	–0.5	–1.3	1.0	–1.0	2.1	–0.8	8.3
Q4	0.7	–0.1	0.2	–1.0	0.4	1.8	0.6	0.8	–2.0	1.2	0.5	2.4	..	8.4
2002 Feb	..	..	..	..	..	..	..	–4.7	–2.4	1.7	–0.3	..	..	8.0
Mar	..	..	..	..	..	..	..	–3.1	–2.8	1.8	–0.2	..	..	8.0
Apr	..	..	..	..	..	..	..	–1.4	–1.1	1.6	–0.8	..	..	8.0
May	..	..	..	..	..	..	..	–3.0	–2.4	1.1	–0.9	..	..	8.2
Jun	..	..	..	..	..	..	..	–0.8	–2.8	0.8	–1.1	..	..	8.3
Jul	..	..	..	..	..	..	..	–0.5	–1.4	1.0	–1.0	..	..	8.2
Aug	..	..	..	..	..	..	..	–0.7	–1.8	1.1	–1.0	..	..	8.3
Sep	..	..	..	..	..	..	..	–0.3	–0.7	1.0	–0.9	..	..	8.3
Oct	..	..	..	..	..	..	..	–	1.2	1.3	0.3	..	..	8.4
Nov	..	..	..	..	..	..	..	3.1	–3.6	1.1	0.4	..	..	8.4
Dec	..	..	..	..	..	..	..	–0.6	–3.5	1.1	0.9	..	..	8.5
2003 Jan	..	..	..	..	..	..	..	..	..	..	1.6	..	..	8.6
Percentage change on previous quarter	ILGI	HUCC	HUCD	HUCE	HUCF	HUCG	HUCH	ILHC	ILHW				ILIQ	
1999 Q3	1.5	0.8	0.1	0.5	–	1.0	0.7	1.6	1.4				1.0	
Q4	1.2	0.5	0.1	–0.1	0.2	0.7	0.3	1.3	1.8				0.6	
2000 Q1	0.7	–	0.1	0.2	–	1.4	1.1	0.9	–0.1				–1.8	
Q2	1.1	0.8	–0.1	0.2	–	1.0	0.8	2.6	1.1				1.1	
Q3	–	–0.1	–0.1	0.2	–	0.9	0.8	2.1	–1.3				0.7	
Q4	0.1	–0.3	0.4	–0.2	0.3	1.6	1.7	0.2	0.1				0.9	
2001 Q1	0.6	0.8	–0.1	–0.6	–0.5	–	–1.0	1.0	1.0				–1.9	
Q2	–	0.5	–	–0.3	–0.1	–0.2	–0.1	–1.8	0.2				1.0	
Q3	–0.2	–0.1	–	–0.4	–0.7	0.3	–0.7	–0.5	–0.7				0.3	
Q4	–0.3	–0.3	0.1	–0.3	0.4	–0.4	–	–2.4	–1.1				0.6	
2002 Q1	0.3	–0.4	0.1	–0.4	–0.4	0.2	–1.1	0.7	–1.5				–2.0	
Q2	0.2	0.1	0.1	–0.7	0.8	0.4	0.5	0.4	1.2				0.8	
Q3	0.3	0.2	–	–	–0.3	1.0	0.7	0.8	0.1				–0.1	
Q4	–	–	–0.1	0.2	0.3	0.1	0.6	–1.1	–1.8				..	
Percentage change on previous month								ILKC	ILKM					
2002 Feb								–0.3	0.4					
Mar								0.2	0.4					
Apr								0.6	1.3					
May								–1.2	–0.2					
Jun								2.0	–1.1					
Jul								–0.9	0.7					
Aug								1.4	0.1					
Sep								–0.8	0.4					
Oct								–1.4	–0.1					
Nov								2.3	–2.2					
Dec								–3.5	–1.6					
2003 Jan								..	..					

GDP = Gross Domestic Product at constant market prices
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ChgStk = Change in Stocks at constant market prices
Exports = Exports of goods and services
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IoP = Industrial Production
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
Unempl = Standardised Unemployment rates: percentage of total workforce

Source: OECD - SNA93

1 Excludes members of armed forces

3 France

	GDP	Contribution to change in 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
1996	1.1	0.7	0.5	–	–0.6	0.7	0.4	0.9	–0.3	2.0	–2.7		2.6	0.3	11.9
1997	1.9	0.1	0.5	–0.1	0.1	2.8	1.5	3.9	1.1	1.2	–0.6		2.6	0.7	11.8
1998	3.5	2.0	–	1.3	0.7	2.1	2.6	5.2	2.6	0.8	–0.9		2.2	2.0	11.4
1999	3.2	1.9	0.3	1.6	–0.3	1.1	1.5	1.9	2.4	0.5	–1.6		2.5	2.2	10.7
2000	4.2	1.5	0.7	1.6	0.4	3.6	3.7	3.6	0.5	1.7	2.1		5.2	2.7	9.3
2001	1.8	1.5	0.5	0.5	–1.0	0.4	0.2	0.9	–0.2	1.7	1.5		4.2	1.5	8.5
2002	1.2	1.0	0.8	–0.1	–0.6	0.4	0.3	–0.9	–	1.9	0.1		..	..	8.7
1999 Q3	3.2	2.0	0.4	1.6	–0.7	1.4	1.4	2.3	2.3	0.5	–1.6		2.7	2.2	10.6
Q4	4.0	1.9	0.6	1.6	–0.1	2.4	2.4	4.3	2.1	1.0	–		3.4	2.5	10.2
2000 Q1	4.6	2.0	0.5	1.8	0.1	3.2	3.1	3.8	1.9	1.5	1.2		5.2	2.6	9.8
Q2	4.5	1.6	0.7	1.7	0.1	3.9	3.6	3.8	1.4	1.5	2.1		5.4	2.7	9.4
Q3	3.9	1.3	0.7	1.5	1.0	3.5	4.1	3.7	0.1	1.9	2.7		5.2	2.6	9.1
Q4	3.7	1.2	0.7	1.6	0.4	4.0	4.1	2.7	–1.3	1.9	2.4		5.0	2.5	8.8
2001 Q1	3.0	1.4	0.6	1.1	–0.4	2.9	2.5	2.7	1.1	1.2	2.5		4.3	2.1	8.6
Q2	2.1	1.4	0.5	0.6	–0.3	0.9	1.0	1.7	–0.4	2.1	1.8		4.2	1.8	8.5
Q3	1.9	1.7	0.6	0.5	–1.1	–0.2	–0.3	1.5	–0.7	1.9	1.1		4.2	1.2	8.5
Q4	0.4	1.5	0.5	–	–2.0	–1.7	–2.1	–2.1	–0.8	1.4	0.6		4.1	0.8	8.5
2002 Q1	0.7	1.1	0.7	–0.1	–0.7	–1.0	–0.7	–1.7	–1.6	2.2	–0.2		3.9	0.4	8.6
Q2	1.2	1.0	0.9	–	–0.9	0.3	0.2	–0.7	–0.6	1.6	–0.1		3.9	0.2	8.7
Q3	1.2	0.9	0.7	–0.2	–0.7	1.0	0.6	–1.9	1.0	1.8	0.3		3.5	0.2	8.8
Q4	1.7	1.0	0.9	–0.2	–0.2	1.4	1.3	0.4	1.0	2.2	0.3		..	..	8.9
2002 Feb	..	..	..	..	..	..	..	–2.1	–0.6	2.1	–0.4		..	..	8.6
Mar	..	..	..	..	..	..	..	–1.0	–0.6	2.1	–0.3		..	..	8.6
Apr	..	..	..	..	..	..	..	–0.3	–0.6	1.9	–0.1		..	..	8.7
May	..	..	..	..	..	..	..	–0.9	2.0	1.5	–0.1		..	..	8.7
Jun	..	..	..	..	..	..	..	–1.0	–3.1	1.5	–0.1		..	..	8.7
Jul	..	..	..	..	..	..	..	–2.4	1.7	1.7	0.3		..	..	8.8
Aug	..	..	..	..	..	..	..	–2.0	2.7	1.8	0.4		..	..	8.8
Sep	..	..	..	..	..	..	..	–1.4	–1.3	1.8	0.4		..	..	8.8
Oct	..	..	..	..	..	..	..	–	3.0	1.9	0.4		..	..	8.8
Nov	..	..	..	..	..	..	..	1.5	2.1	2.2	0.3		..	..	8.9
Dec	..	..	..	..	..	..	..	–0.1	–1.8	2.3	0.4		..	..	8.9
2003 Jan	..	..	..	..	..	..	..	..	3.3	2.0	0.6		..	..	9.0
Percentage change on previous quarter	ILGJ	HUBQ	HUBR	HUBS	HUBT	HUBU	HUBV	ILHD	ILHX					ILIR	
1999 Q3	1.1	0.5	0.1	0.4	–0.6	1.2	0.5	1.4	1.3					0.7	
Q4	1.3	0.5	0.3	0.3	0.8	0.6	1.1	2.1	1.0					0.7	
2000 Q1	1.2	0.4	0.1	0.6	–	0.9	0.9	–0.3	–0.2					0.8	
Q2	0.8	0.2	0.2	0.4	–0.1	1.1	0.9	0.5	–0.7					0.6	
Q3	0.5	0.2	0.1	0.1	0.3	0.8	1.1	1.4	–					0.6	
Q4	1.2	0.3	0.2	0.4	0.2	1.0	1.0	1.1	–0.4					0.6	
2001 Q1	0.4	0.6	0.1	0.1	–0.8	–0.1	–0.6	–0.3	2.3					0.4	
Q2	–0.1	0.2	0.1	–0.1	–	–0.9	–0.6	–0.4	–2.2					0.2	
Q3	0.3	0.5	0.3	0.1	–0.5	–0.2	–0.2	1.1	–0.3					0.1	
Q4	–0.3	0.2	0.1	–0.1	–0.7	–0.5	–0.8	–2.4	–0.5					0.2	
2002 Q1	0.7	0.2	0.3	0.1	0.4	0.5	0.8	0.1	1.4					–0.1	
Q2	0.4	0.2	0.2	–	–0.1	0.5	0.4	0.6	–1.2					–	
Q3	0.3	0.4	0.1	–0.1	–0.3	0.5	0.2	–0.2	1.3					0.1	
Q4	0.2	0.2	0.3	–0.1	–0.1	–0.1	–0.1	–0.1	–0.5					..	
Percentage change on previous month								ILKD	ILKN						
2002 Feb								–0.3	1.7						
Mar								0.8	0.1						
Apr								0.4	–2.0						
May								–0.4	1.4						
Jun								–	–2.4						
Jul								–0.2	3.1						
Aug								0.3	1.0						
Sep								–0.3	–3.8						
Oct								–	2.8						
Nov								0.9	–						
Dec								–1.7	–2.7						
2003 Jan								..	4.4						

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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
Unempl = Standardised Unemployment rates: percentage of total workforce
IoP=Index of Production

1 Producer prices in manufactured goods
2 Excludes members of armed foces

Source: OECD - SNA93

4 Italy

	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PPI	Earnings	Empl	Unempl
	Contribution to change in GDP													
Percentage change on a year earlier														
	ILGA	HUCI	HUCJ	HUCK	HUCL	HUCM	HUCN	ILGU	ILHO	HYAA	ILAH	ILAQ	ILII	GABE
1996	1.1	0.7	0.2	0.7	–0.7	0.2	–0.1	–1.6	1.2	4.0	1.9	3.1	0.5	11.5
1997	2.0	1.9	–	0.4	0.3	1.7	2.3	3.8	0.9	2.0	1.3	3.9	0.4	11.6
1998	1.8	1.9	–	0.7	0.3	1.0	2.2	1.4	1.0	2.0	0.1	3.0	1.1	11.7
1999	1.7	1.5	0.2	1.1	0.1	0.1	1.4	–0.1	1.0	1.7	–0.2	1.8	1.2	11.3
2000	3.1	1.6	0.3	1.3	–1.1	3.3	2.5	4.0	–0.5	2.5	6.0	2.0	1.9	10.4
2001	1.8	0.7	0.4	0.5	–	0.2	–	–1.0	–1.4	2.7	1.9	1.9	2.0	9.4
2002	0.4	..	..	..	..	..	..	–2.1	1.9	2.5	–0.2	2.6	1.4	..
1999 Q3	1.5	1.4	0.2	1.2	–0.3	0.2	1.3	0.3	0.6	1.7	–	1.9	1.2	11.2
Q4	2.9	1.3	0.2	1.6	–0.1	2.0	2.1	3.2	2.3	2.1	2.2	1.5	1.4	11.0
2000 Q1	3.5	1.4	0.2	1.5	–1.1	4.0	2.9	3.4	–0.3	2.4	4.7	1.6	1.0	10.9
Q2	3.3	1.9	0.3	1.5	–0.9	3.0	2.7	5.8	–0.3	2.6	6.2	2.6	1.6	10.5
Q3	2.9	1.7	0.3	1.4	–1.6	3.5	2.7	3.5	–	2.6	6.7	1.9	2.1	10.3
Q4	2.9	1.6	0.4	0.7	–0.8	2.7	2.0	3.5	–1.3	2.6	6.5	1.8	2.8	9.9
2001 Q1	2.5	1.3	0.4	0.7	–0.5	1.1	0.4	2.5	–0.6	2.9	4.8	2.2	3.2	9.7
Q2	2.3	0.9	0.4	0.6	–0.2	1.4	0.9	–0.8	–1.0	3.0	3.2	1.3	2.0	9.5
Q3	1.7	0.4	0.4	0.3	1.2	–0.6	–	–1.3	–2.2	2.8	0.9	2.0	1.8	9.4
Q4	0.7	0.2	0.3	0.4	–0.4	–1.0	–1.1	–4.3	–1.9	2.5	–1.0	2.1	1.2	9.2
2002 Q1	–	–0.1	0.3	–0.4	1.2	–1.7	–0.8	–3.6	2.9	2.4	–1.3	2.2	1.7	9.0
Q2	0.1	–	0.3	–0.6	0.8	–0.5	–0.2	–2.8	1.3	2.2	–1.0	3.1	1.9	9.0
Q3	0.5	0.5	0.3	0.1	–0.2	1.2	1.4	–1.6	1.6	2.4	0.4	2.3	1.3	9.0
Q4	1.0	..	..	..	..	..	..	–0.5	1.6	2.7	1.3	2.8	0.9	..
2002 Feb	..	..	..	..	..	..	..	–3.0	2.9	2.3	–1.4	1.6	..	9.0
Mar	..	..	..	..	..	..	..	–4.4	2.9	2.5	–1.3	2.8	..	9.0
Apr	..	..	..	..	..	..	..	–3.4	1.0	2.3	–1.2	3.1	..	9.0
May	..	..	..	..	..	..	..	–1.8	1.9	2.3	–0.9	3.1	..	9.0
Jun	..	..	..	..	..	..	..	–3.2	1.0	2.2	–0.7	3.2	..	9.0
Jul	..	..	..	..	..	..	..	–1.6	2.9	2.2	0.1	2.2	..	9.0
Aug	..	..	..	..	..	..	..	–1.7	2.0	2.4	0.3	2.2	..	9.0
Sep	..	..	..	..	..	..	..	–1.4	–	2.6	0.5	2.4	..	9.0
Oct	..	..	..	..	..	..	..	–2.0	2.0	2.7	1.1	2.8	..	8.9
Nov	..	..	..	..	..	..	..	1.5	1.0	2.8	1.2	2.8	..	..
Dec	..	..	..	..	..	..	..	–0.8	2.0	2.8	1.5	2.7	..	..
2003 Jan	..	..	..	..	..	..	..	..	..	2.8	..	..	..	..
Percentage change on previous quarter														
	ILGK	HUCO	HUCP	HUCQ	HUCR	HUCS	HUCT	ILHE	ILHY				ILIS	
1999 Q3	1.0	0.4	0.1	0.3	–0.5	0.7	0.1	2.0	–				1.4	
Q4	0.9	0.4	0.1	0.5	0.4	1.0	1.3	1.5	1.3				–0.1	
2000 Q1	1.1	0.6	0.1	0.3	–0.8	1.7	1.3	0.4	–1.9				–1.2	
Q2	0.3	0.4	0.1	0.3	–0.1	–0.5	–0.1	1.8	0.3				1.6	
Q3	0.5	0.3	0.1	0.2	–1.1	1.3	0.1	–0.2	0.3				1.9	
Q4	0.9	0.3	0.1	–0.1	1.1	0.2	0.6	1.5	–				0.6	
2001 Q1	0.8	0.2	0.1	0.3	–0.4	0.1	–0.3	–0.5	–1.3				–0.8	
Q2	0.1	0.1	0.1	0.2	0.3	–0.1	0.4	–1.6	–				0.4	
Q3	–	–0.2	0.1	–	0.2	–0.8	–0.8	–0.7	–1.0				1.7	
Q4	–0.1	0.1	0.1	–	–0.5	–0.2	–0.4	–1.6	0.3				–	
2002 Q1	0.1	–0.1	0.1	–0.5	1.2	–0.6	–	0.2	3.6				–0.4	
Q2	0.2	0.2	0.1	–	–0.1	1.1	1.0	–0.8	–1.6				0.6	
Q3	0.3	0.3	–	0.6	–0.8	0.9	0.8	0.6	–0.6				1.1	
Q4	0.4	..	..	..	..	..	..	–0.5	0.3				–0.4	
Percentage change on previous month														
								ILKE	ILKO					
2002 Feb								–	–					
Mar								–0.7	–					
Apr								–1.0	–1.9					
May								1.5	1.0					
Jun								–0.9	–1.0					
Jul								0.6	1.0					
Aug								0.4	–1.0					
Sep								–0.5	–1.9					
Oct								–0.6	2.0					
Nov								0.8	–					
Dec								–0.6	–					
2003 Jan								..	..					

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Unempl = Standardised Unemployment not seasonally adjusted

Source: OECD - SNA93

5 USA

	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PPI	Earnings	Empl[1]	Unempl
	Contribution to change in GDP													
Percentage change on a year earlier														
	ILGC	HUDG	HUDH	HUDI	HUDJ	HUDK	HUDL	ILGW	ILHQ	ILAA	ILAJ	ILAS	ILIK	GADO
1996	3.6	2.1	0.1	1.5	–	0.9	1.0	4.3	5.8	2.9	2.3	3.3	1.4	5.4
1997	4.4	2.4	0.3	1.6	0.4	1.4	1.7	7.4	4.9	2.3	0.3	3.2	2.3	4.9
1998	4.3	3.2	0.2	2.0	0.2	0.3	1.6	5.6	7.1	1.6	–1.1	2.5	1.5	4.5
1999	4.1	3.3	0.4	1.6	–0.2	0.4	1.6	4.2	8.8	2.1	1.8	2.9	1.5	4.2
2000	3.8	2.9	0.4	1.2	–	1.1	2.0	4.7	5.5	3.4	4.1	3.5	2.5	4.0
2001	0.3	1.7	0.5	–0.6	–1.4	–0.7	–0.5	–3.5	4.8	2.8	0.7	3.2	–	4.8
2002	2.4	2.1	0.6	–0.4	0.7	–0.2	0.6	–0.7	5.3	1.5	–0.6	3.2	–0.3	5.8
1999 Q3	4.2	3.4	0.5	1.7	–0.3	0.7	1.8	4.3	9.6	2.4	2.4	3.7	1.4	4.2
Q4	4.3	3.3	0.5	1.3	0.1	0.6	1.7	5.0	8.2	2.6	3.2	3.6	1.5	4.1
2000 Q1	4.2	3.4	0.4	1.6	–0.4	1.0	2.0	5.2	7.8	3.2	4.6	4.2	2.8	4.0
Q2	4.9	3.0	0.6	1.4	0.7	1.3	2.2	6.0	5.8	3.3	4.4	3.3	2.8	4.0
Q3	3.7	2.9	0.4	1.0	0.2	1.4	2.2	4.8	5.2	3.5	3.9	2.9	2.3	4.1
Q4	2.3	2.4	0.3	0.7	–0.4	0.9	1.7	2.7	3.5	3.4	3.3	3.5	2.3	3.9
2001 Q1	1.5	1.9	0.5	0.1	–0.8	0.4	0.8	–0.2	2.9	3.4	2.1	2.6	0.8	4.2
Q2	–0.1	1.6	0.4	–0.5	–1.6	–0.4	–0.2	–3.4	4.5	3.4	2.1	3.5	0.1	4.5
Q3	–0.4	1.2	0.5	–0.9	–1.4	–1.3	–1.2	–4.6	3.8	2.7	0.8	3.4	–	4.8
Q4	0.1	1.9	0.7	–1.0	–1.7	–1.4	–1.4	–5.7	7.9	1.8	–1.5	3.4	–0.8	5.6
2002 Q1	1.4	2.0	0.7	–0.9	–	–1.1	–0.7	–3.8	5.9	1.2	–1.8	4.0	–1.2	5.6
Q2	2.2	2.1	0.7	–0.6	0.7	–0.4	0.4	–1.3	5.5	1.3	–1.7	3.4	–0.5	5.8
Q3	3.3	2.6	0.6	–0.2	0.9	0.3	1.1	0.8	7.0	1.5	–0.6	2.8	0.1	5.8
Q4	2.9	1.8	0.6	0.2	1.3	0.5	1.6	1.6	3.1	2.2	1.6	2.7	0.3	5.9
2002 Feb	..	..	..	..	..	..	..	–3.9	6.1	1.1	–2.0	4.2	–0.8	5.6
Mar	..	..	..	..	..	..	..	–3.0	6.0	1.5	–1.3	4.2	–1.2	5.7
Apr	..	..	..	..	..	..	..	–2.1	5.8	1.6	–1.4	3.4	–0.8	5.9
May	..	..	..	..	..	..	..	–1.3	4.4	1.2	–2.2	3.4	–0.5	5.8
Jun	..	..	..	..	..	..	..	–0.3	6.2	1.1	–1.6	3.3	–0.5	5.8
Jul	..	..	..	..	..	..	..	0.6	6.9	1.5	–0.6	2.5	–0.5	5.8
Aug	..	..	..	..	..	..	..	0.6	6.5	1.8	–0.7	3.3	0.4	5.8
Sep	..	..	..	..	..	..	..	1.2	7.6	1.5	–0.5	2.5	0.4	5.7
Oct	..	..	..	..	..	..	..	1.0	0.3	2.1	1.5	3.3	0.5	5.8
Nov	..	..	..	..	..	..	..	1.8	3.5	2.2	1.5	2.5	0.2	5.9
Dec	..	..	..	..	..	..	..	1.8	5.8	2.3	1.9	2.4	0.3	6.0
2003 Jan	..	..	..	..	..	..	..	2.0	4.3	2.6	3.2	3.3	1.3	5.7
Percentage change on previous quarter														
	ILGM	HUDM	HUDN	HUDO	HUDP	HUDQ	HUDR	ILHG	ILIA				ILIU	
1999 Q3	1.3	0.8	0.2	0.3	0.2	0.3	0.5	1.2	1.9				0.6	
Q4	1.7	0.8	0.2	0.2	0.5	0.4	0.4	1.6	2.0				0.3	
2000 Q1	0.6	0.9	–0.1	0.6	–0.5	0.2	0.5	1.3	2.2				0.7	
Q2	1.2	0.5	0.3	0.2	0.5	0.4	0.7	1.7	–0.4				1.2	
Q3	0.1	0.6	–	–	–0.3	0.3	0.5	0.1	1.3				0.1	
Q4	0.3	0.3	0.1	–0.1	–	–0.1	–0.1	–0.4	0.4				0.3	
2001 Q1	–0.2	0.4	0.2	–	–0.9	–0.2	–0.3	–1.6	1.6				–0.7	
Q2	–0.4	0.2	0.1	–0.4	–0.3	–0.4	–0.3	–1.5	1.2				0.5	
Q3	–0.1	0.2	0.1	–0.4	–	–0.6	–0.5	–1.2	0.5				–	
Q4	0.7	1.0	0.3	–0.2	–0.4	–0.3	–0.2	–1.5	4.3				–0.5	
2002 Q1	1.2	0.5	0.1	0.1	0.8	0.1	0.3	0.4	–0.2				–1.1	
Q2	0.3	0.3	0.1	–0.1	0.4	0.4	0.8	1.1	0.8				1.1	
Q3	1.0	0.7	0.1	–	0.1	0.1	0.1	0.9	2.0				0.6	
Q4	0.4	0.3	0.2	0.2	0.1	–0.1	0.3	–0.8	0.6				–0.4	
Percentage change on previous month														
								ILKG	ILKQ				ILLA	
2002 Feb								0.2	0.7				0.9	
Mar								0.4	–0.4				0.1	
Apr								0.4	0.8				0.3	
May								0.3	–0.7				0.5	
Jun								0.3	1.6				0.5	
Jul								0.7	1.4				0.3	
Aug								–0.2	0.4				–0.2	
Sep								–0.1	–1.5				0.1	
Oct								–0.6	0.2				0.1	
Nov								0.2	0.8				–0.6	
Dec								–0.5	2.2				–	
2003 Jan								0.8	–1.2				–0.5	

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
IoP = Industrial Production
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
Unempl = Standardised Unemployment rates: percentage of total workforce

Source: OECD - SNA93

1 Excludes members of armed forces

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
1996	3.5	1.3	0.4	1.9	0.3	0.6	1.0	2.2	0.6	0.1	–1.7	2.5	0.5	3.4
1997	1.9	0.6	0.1	0.2	–	1.1	0.1	4.0	–2.1	1.7	0.6	2.8	1.0	3.4
1998	–1.2	–	0.3	–1.1	–0.6	–0.2	–0.6	–6.7	–6.0	0.7	–1.3	–0.9	–0.6	4.1
1999	0.2	0.1	0.7	–0.2	–0.3	0.1	0.2	1.0	–2.6	–0.3	–1.4	–0.7	–0.8	4.7
2000	2.8	0.5	0.7	0.7	0.3	1.3	0.7	5.2	–1.1	–0.7	0.1	1.7	–0.3	4.7
2001	0.4	0.9	0.4	–0.3	–	–0.7	–	–7.0	–1.2	–0.7	–2.4	–	–0.5	5.0
2002	0.3	0.8	0.4	–1.2	–0.4	0.9	0.2	–1.5	–2.9	–1.0	–1.9	–1.0	–1.3	5.4
1999 Q3	1.1	0.6	0.8	–	–0.3	0.3	0.3	2.7	–2.2	–	–1.3	–0.3	–0.7	4.7
Q4	–0.5	–0.9	0.7	0.2	–0.2	0.7	0.8	5.1	–1.1	–1.0	–0.5	–0.3	–0.2	4.7
2000 Q1	1.3	0.3	0.6	0.1	–0.1	1.2	0.7	4.3	–2.2	–0.6	0.8	1.9	–0.5	4.8
Q2	1.9	0.2	0.9	0.2	0.1	1.4	0.8	6.6	–1.5	–0.7	0.5	2.1	–0.4	4.7
Q3	2.7	–	0.8	0.9	0.5	1.3	0.8	5.3	–0.4	–0.6	–	1.7	–0.4	4.7
Q4	5.1	1.4	0.8	1.9	0.6	1.2	0.8	4.4	–0.4	–0.8	–0.6	1.1	0.2	4.8
2001 Q1	3.5	1.1	0.7	1.2	1.0	0.2	0.7	0.6	2.3	–0.5	–1.9	0.3	0.5	4.7
Q2	1.1	1.1	0.4	0.3	0.1	–0.6	0.2	–5.2	–1.1	–0.7	–2.1	0.5	–0.4	4.9
Q3	–0.6	0.8	0.2	–0.5	–0.4	–1.0	–0.2	–10.4	–2.6	–0.8	–2.5	–0.2	–0.8	5.1
Q4	–2.4	0.7	0.4	–2.3	–0.6	–1.2	–0.6	–12.8	–3.4	–1.0	–3.0	–0.6	–1.3	5.4
2002 Q1	–2.8	0.4	0.4	–2.2	–1.6	–0.3	–0.5	–10.1	–4.4	–1.4	–2.8	–1.5	–1.5	5.3
Q2	–0.2	0.5	0.4	–1.4	–0.5	0.8	–	–3.0	–3.0	–0.9	–2.2	–0.8	–1.6	5.3
Q3	1.6	1.3	0.5	–1.0	0.2	1.1	0.5	3.4	–2.3	–0.8	–1.9	–2.2	–1.0	5.4
Q4	2.6	1.0	0.2	–	0.3	1.8	0.8	4.9	–1.9	–0.5	–1.1	0.1	–1.1	5.4
2002 Feb	..	..	..	..	..	..	..	–10.8	–4.4	–1.6	–2.7	–0.8	–1.6	5.3
Mar	..	..	..	..	..	..	..	–8.5	–4.4	–1.2	–2.7	–1.0	–1.3	5.3
Apr	..	..	..	..	..	..	..	–6.4	–3.4	–1.1	–2.3	0.1	–1.4	5.2
May	..	..	..	..	..	..	..	–1.6	–2.3	–0.9	–2.2	–0.4	–1.9	5.4
Jun	..	..	..	..	..	..	..	–1.1	–3.4	–0.7	–2.1	–1.8	–1.4	5.4
Jul	..	..	..	..	..	..	..	1.7	–4.5	–0.8	–1.9	–4.9	–1.2	5.4
Aug	..	..	..	..	..	..	..	2.6	–1.1	–0.9	–1.9	–2.8	–1.1	5.5
Sep	..	..	..	..	..	..	..	5.8	–1.1	–0.7	–1.8	1.3	–0.7	5.4
Oct	..	..	..	..	..	..	..	5.5	–2.3	–0.9	–1.3	1.0	–0.8	5.5
Nov	..	..	..	..	..	..	..	5.9	–1.1	–0.4	–1.1	0.5	–1.3	5.3
Dec	..	..	..	..	..	..	..	3.4	–2.4	–0.3	–1.0	–1.3	–1.1	5.5
2003 Jan	..	..	..	..	..	..	..	6.8	–2.3	–0.4	–0.9	0.2	–1.0	5.5
Percentage change on previous quarter														
	ILGN	HUDA	HUDB	HUDC	HUDD	HUDE	HUDF	ILHH	ILIB				ILIV	
1999 Q3	–0.2	0.1	0.3	–0.4	–0.2	0.3	0.2	2.7	–0.4				–	
Q4	–1.0	–0.9	0.1	–	–	0.2	0.3	1.2	–0.7				–0.6	
2000 Q1	2.1	0.9	0.2	0.4	0.1	0.6	–	0.6	–0.7				–2.1	
Q2	0.9	0.2	0.4	0.1	0.3	0.3	0.3	1.9	0.4				2.3	
Q3	0.6	–0.1	0.2	0.4	0.2	0.2	0.2	1.5	0.8				–	
Q4	1.3	0.4	0.1	1.0	0.1	0.1	0.3	0.3	–0.7				–	
2001 Q1	0.5	0.5	–	–0.2	0.4	–0.4	–0.1	–3.1	1.9				–1.8	
Q2	–1.4	0.1	0.1	–0.8	–0.6	–0.4	–0.2	–4.0	–2.9				1.4	
Q3	–1.1	–0.3	–	–0.4	–0.3	–0.3	–0.2	–4.0	–0.8				–0.4	
Q4	–0.4	0.3	0.2	–0.8	–0.1	–0.2	–0.2	–2.4	–1.5				–0.5	
2002 Q1	0.1	0.2	0.1	–0.2	–0.6	0.5	0.1	–0.1	0.8				–2.0	
Q2	1.3	0.2	–	0.1	0.5	0.7	0.3	3.7	–1.5				1.3	
Q3	0.7	0.4	0.1	–	0.4	–	0.3	2.3	–				0.2	
Q4	0.5	0.1	–	0.1	–	0.5	0.1	–0.9	–1.2				–0.6	
Percentage change on previous month														
								ILKH	ILKR				ILLB	
2002 Feb								0.9	–				–0.3	
Mar								0.5	–1.1				0.7	
Apr								0.3	–1.2				0.6	
May								4.0	1.2				0.3	
Jun								–0.2	–1.2				0.3	
Jul								0.4	–1.2				–	
Aug								1.2	2.4				..	
Sep								–0.3	–				–0.3	
Oct								–0.2	–2.3				–	
Nov								–1.1	2.4				–0.1	
Dec								–0.6	–3.5				–0.9	
2003 Jan								1.8	2.4				–1.3	

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
Unempl = Standardised Unemployment rates: percentage of total workforce
IoP=Index of Production

1 Not adjusted for unequal number of working days in a month
2 Figures monthly and seasonally adjusted

Source: OECD - SNA93

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	manufact-ures	goods
Percentage change on a year earlier	ILIZ	ILJA	ILJB	ILJC	ILJD	ILJE	ILJF	ILJG	ILJH	ILJI	ILJJ	ILJK	ILJL	ILJM
1992	4.5	3.3	9.4	5.5	4.2	9.3	4.3	3.6	6.2	5.2	4.2	8.3	5.0	4.7
1993	4.1	2.1	11.8	3.6	0.7	11.7	3.6	2.2	7.8	3.1	0.7	10.0	3.8	3.4
1994	11.6	9.9	17.8	12.0	12.2	11.3	10.3	9.3	13.2	10.9	11.0	10.7	11.8	10.6
1995	10.1	9.9	10.6	10.5	10.1	11.5	9.2	9.3	8.6	9.8	9.0	11.8	10.3	9.5
1996	6.0	6.5	4.5	7.1	8.0	4.7	6.3	6.5	6.0	6.2	7.2	3.6	6.6	6.3
1997	11.7	11.9	11.2	11.6	11.3	12.4	10.8	11.0	10.2	10.2	9.7	11.5	11.7	10.5
1998	5.2	6.3	1.4	6.1	9.5	–2.7	4.9	5.6	2.4	5.5	8.1	–1.3	5.7	5.1
1999	6.3	6.1	6.9	7.8	10.8	–0.8	5.6	5.7	5.3	6.6	9.1	–0.7	7.1	6.1
2000	13.8	12.4	18.8	14.8	14.0	17.5	12.3	11.9	13.1	12.6	12.1	13.9	14.3	12.4
2001	–1.5	–1.6	–1.2	–0.9	–1.8	1.8	–0.6	–0.8	–0.5	–0.1	–1.2	3.1	–1.2	–0.4
2002	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1996 Q3	6.3	6.8	4.5	6.9	8.8	2.2	6.6	6.6	6.5	5.8	7.7	1.0	6.6	6.2
Q4	7.6	8.2	5.8	8.4	8.9	7.1	8.4	8.8	7.2	7.7	8.5	5.5	8.0	8.0
1997 Q1	8.2	8.0	8.9	8.6	8.2	9.7	8.1	7.6	9.5	7.7	7.3	8.7	8.4	7.9
Q2	12.4	13.0	10.1	12.1	12.1	12.2	11.7	12.4	9.8	10.7	10.4	11.5	12.2	11.2
Q3	13.6	14.0	12.2	13.2	12.4	15.2	12.3	12.9	10.6	11.5	10.5	14.2	13.4	11.9
Q4	12.6	12.3	13.4	12.4	12.3	12.7	11.0	11.1	10.8	10.7	10.4	11.5	12.5	10.9
1998 Q1	10.2	11.3	6.4	10.0	12.6	3.6	9.6	10.9	6.1	9.1	11.0	4.3	10.1	9.3
Q2	6.0	6.9	2.9	6.7	9.8	–1.2	5.4	6.2	3.1	5.9	8.3	–0.4	6.4	5.6
Q3	3.3	4.2	0.1	4.3	7.9	–5.1	2.8	3.3	1.3	3.9	6.7	–3.6	3.8	3.3
Q4	1.8	3.3	–3.4	3.6	8.0	–7.8	1.7	2.6	–0.8	3.3	6.6	–5.5	2.7	2.5
1999 Q1	1.6	2.8	–2.5	3.9	7.7	–6.3	1.4	1.7	0.5	3.4	6.2	–4.0	2.8	2.4
Q2	3.9	3.9	3.9	6.2	9.5	–3.4	3.7	3.7	3.8	5.1	7.9	–2.9	5.1	4.4
Q3	7.8	7.3	9.5	8.8	11.6	0.8	7.0	7.2	6.2	7.3	9.8	–0.1	8.3	7.1
Q4	11.8	10.4	17.0	12.3	14.2	6.4	10.2	10.1	10.8	10.3	12.2	4.8	12.1	10.3
2000 Q1	15.6	13.6	23.1	14.5	15.1	12.7	13.3	13.4	13.1	12.0	13.4	8.0	15.0	12.7
Q2	15.4	13.9	20.9	15.8	15.3	17.7	13.3	13.0	14.4	13.6	13.2	14.7	15.6	13.5
Q3	13.9	12.4	19.6	16.4	14.7	21.7	12.6	11.8	15.0	14.1	12.8	18.3	15.2	13.4
Q4	10.6	10.1	12.5	12.5	10.9	17.6	9.9	9.8	10.1	10.5	9.3	14.6	11.5	10.2
2001 Q1	6.1	6.0	6.4	7.0	5.5	11.6	6.1	5.9	6.8	6.9	5.2	12.0	6.5	6.5
Q2	–0.6	–0.3	–1.3	–	–0.9	2.9	0.2	0.4	–0.4	0.5	–0.4	3.6	–0.3	0.3
Q3	–4.9	–4.6	–5.9	–4.3	–5.0	–2.3	–3.7	–3.4	–4.7	–3.3	–4.1	–0.8	–4.6	–3.5
Q4	–6.1	–6.8	–3.4	–5.7	–6.3	–3.8	–5.1	–5.8	–3.2	–4.1	–4.9	–1.7	–5.9	–4.6
2002 Q1	–3.4	–4.8	1.4	–3.3	–3.6	–2.5	–3.2	–4.0	–0.9	–2.8	–3.1	–1.8	–3.4	–3.0
Q2	4.5	2.7	11.0	2.8	2.4	3.8	3.6	2.5	7.0	2.7	2.2	4.3	3.6	3.2
Q3	8.5	6.2	16.8	..	5.7	..	..	5.6	..	..	5.2	..	..	..
Q4	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Percentage change on previous quarter	ILJN	ILJO	ILJP	ILJQ	ILJR	ILJS	ILJT	ILJU	ILJV	ILJW	ILJX	ILJY	ILJZ	ILKA
1996 Q3	1.8	2.3	–0.2	1.7	2.8	–0.9	1.8	2.3	0.3	1.4	2.4	–1.2	1.8	1.6
Q4	2.6	2.8	1.7	2.7	2.2	4.1	2.7	3.0	1.8	2.5	2.0	3.6	2.6	2.6
1997 Q1	2.9	2.0	6.1	3.2	2.0	6.5	2.4	1.1	5.8	2.7	1.1	6.9	3.1	2.5
Q2	4.6	5.3	2.2	3.9	4.6	2.1	4.4	5.5	1.6	3.7	4.5	1.9	4.3	4.1
Q3	2.8	3.2	1.7	2.7	3.1	1.8	2.3	2.8	1.1	2.1	2.5	1.1	2.8	2.2
Q4	1.7	1.3	2.8	2.0	2.0	1.9	1.5	1.3	2.0	1.7	1.9	1.3	1.8	1.6
1998 Q1	0.7	1.0	–0.4	1.1	2.3	–2.1	1.0	0.9	1.3	1.2	1.7	–	0.9	1.1
Q2	0.7	1.3	–1.2	0.8	2.0	–2.7	0.4	1.1	–1.3	0.7	1.9	–2.7	0.7	0.6
Q3	0.1	0.5	–1.0	0.4	1.3	–2.2	–0.2	–	–0.7	0.2	1.1	–2.2	0.3	–
Q4	0.2	0.5	–0.8	1.3	2.1	–0.9	0.4	0.6	–0.1	1.1	1.7	–0.7	0.8	0.8
1999 Q1	0.5	0.5	0.5	1.3	2.0	–0.6	0.7	0.1	2.6	1.3	1.3	1.5	0.9	1.0
Q2	3.0	2.4	5.3	3.0	3.8	0.3	2.7	3.0	2.0	2.3	3.6	–1.6	3.0	2.5
Q3	3.8	3.7	4.3	2.9	3.2	2.0	2.9	3.4	1.6	2.3	2.9	0.7	3.4	2.6
Q4	4.0	3.4	6.0	4.5	4.5	4.6	3.5	3.2	4.3	4.0	3.9	4.2	4.3	3.7
2000 Q1	3.9	3.4	5.7	3.4	2.8	5.2	3.6	3.1	4.7	2.9	2.4	4.6	3.6	3.2
Q2	2.8	2.7	3.4	4.2	4.0	4.8	2.8	2.6	3.2	3.7	3.5	4.5	3.5	3.2
Q3	2.6	2.4	3.2	3.4	2.7	5.5	2.2	2.3	2.1	2.8	2.5	3.8	3.0	2.5
Q4	0.9	1.3	–0.2	1.0	1.0	1.1	1.0	1.4	–0.2	0.7	0.6	1.0	1.0	0.9
2001 Q1	–0.4	–0.4	–	–1.7	–2.1	–0.2	–	–0.5	1.6	–0.5	–1.4	2.3	–1.0	–0.2
Q2	–3.6	–3.5	–4.1	–2.6	–2.4	–3.3	–3.0	–2.7	–3.8	–2.4	–2.1	–3.3	–3.1	–2.7
Q3	–1.9	–2.0	–1.6	–1.1	–1.5	0.1	–1.7	–1.5	–2.3	–1.1	–1.3	–0.6	–1.5	–1.4
Q4	–0.3	–1.1	2.4	–0.5	–0.5	–0.5	–0.4	–1.1	1.5	–0.1	–0.2	–	–0.4	–0.3
2002 Q1	2.5	1.7	4.9	0.8	0.7	1.2	2.0	1.3	3.9	0.9	0.5	2.2	1.6	1.5
Q2	4.3	4.1	5.1	3.5	3.7	3.0	3.8	3.8	3.9	3.1	3.3	2.7	3.9	3.5
Q3	1.9	1.4	3.6	..	1.7	..	..	1.5	..	..	1.6	..	..	..
Q4	..	..	..	..	..	..	..	..	..	..	..	..	..	..

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

Source: OECD - SNA93

Economic Statistics and the Standard Industrial Classification (SIC) 2003

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Background to NACE and the SIC

NACE is the European Union (EU) classification system for economic activities. The acronym NACE means 'Nomenclature générale des activités économiques dans le communautés européennes', although today it is known in all Member States simply as 'NACE'. It has a hierarchical structure within which the number of digits used to identify an industry increases with the degree of disaggregation. The economic activity classification systems of Member States are required by European law to be identical to NACE down to and including the 4-digit (Class) level. National systems also contain a 5-digit (Subclass) level determined nationally, each Member State having a different set of Subclasses. The UK SIC is, then, identical to NACE at the Class level and above and also includes a number of 5 digit Subclasses. The version of the SIC in use up to 2002 was known as SIC(92) being based on the 1990 version of NACE (NACE Rev. 1).

The SIC is used in the UK for the industrial classification of outputs from numerous surveys of businesses and also for some outputs of the Labour Force Survey and the Census. It is also used in the compilation of the National and Regional Accounts.

Latest revision of NACE and the SIC

Classification systems need to be revised periodically because, over time, new products, processes and industries emerge. In January 2003, a minor revision of NACE Rev 1, known as NACE Rev 1.1, was published in the Official Journal of the European Communities. Consequently, the UK was obliged to introduce a new Standard Industrial Classification, SIC(2003) consistent with NACE Rev 1.1. The UK took the opportunity of the 2003 revision also to update the national Subclasses. The UK consultation process was based, primarily, on a system of co-ordinators, each co-ordinator having responsibility for a specific part of the SIC. The co-ordinators, in turn, approached a wide spectrum of UK interests, including businesses, professional bodies, trade associations and other government departments. It was through this consultation process that changes in the structure of economic activity, necessitating the introduction of the new Subclasses, were identified.

Nature of the Changes

The annex shows in detail which SIC codes are affected by the change in classification system. Details of SIC(2003) can also be found on the National Statistics website at **http://www.statistics.gov.uk/sic2003**. It can be seen that nearly all of the changes are of a one to many nature (i.e. one SIC(92) code splitting into several SIC(2003) codes). In some cases this results from a change in NACE but more usually affects the 5-digit level of the classification determined by the UK. Consequently nearly all of the effects are at the 4 and 5 digit levels of the SIC and the one to many mapping makes conversion from SIC(2003) back to SIC(92) relatively straightforward. Two exceptions should be noted:

- in the iron and steel industry SIC(92) codes 2710 and 2735 are combined into a single SIC(2003) code;
- there is some movement of content from division 74 to division 93.

There is also some renumbering of Classes which has an effect at the 3-digit level.

Another important point concerns the treatment of head offices. Under SIC(92) head offices were classified to the principal activity of the enterprise to which they belonged. Under SIC(2003) however they are classified with holding companies under code 7415. This has little or no effect on statistics derived from enterprise data since head office activity is treated as ancillary and not allowed to affect the enterprise classification. However, for statistics based on local units (i.e. individual sites of enterprises), notably regional and other

sub-national analyses, the reclassification of head offices can affect all parts of the SIC. The remainder of this article describes the implementation of SIC(2003) within the ONS and the effects that can be expected from its introduction.

Transition Arrangements

The following transitional arrangements have been put in place for the ONS's business surveys and the National Accounts:

- A changeover date of 1 January 2003 has been applied to industry classifications on the business register, though the old SIC(92) classifications will also be retained for at least a year to cover the transitional period.
- Surveys relating to 2002 or earlier have had their samples selected under SIC(92) while those relating to periods from January 2003 or later are being selected under SIC(2003). Thus the Annual Business Inquiry (ABI) and other annual inquiries relating to 2002 were selected on a SIC(92) basis.
- The business register is producing conversion matrices between the two versions of the SIC. These will be available in both directions and at both enterprise and local unit levels. Such matrices will be used to assess discontinuities in time series and allow linking of time series. In addition, key analyses from the 2002 ABI will be produced on both an SIC(92) and SIC(2003) basis to provide a wider range of conversion matrices for variables such as value added which are not available on the business register.
- The National Accounts will not be compiled on a SIC(2003) basis until the 2005 *Blue Book* by which time all its major sources will be available under SIC(2003).

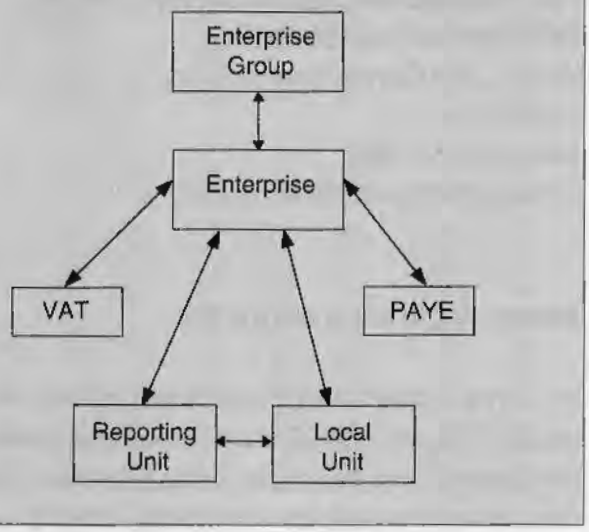
The Business Register

The sampling frame for the business surveys conducted by the ONS is its Interdepartmental Business Register (IDBR). The IDBR is also used by other government departments who were informed of progress and impact during the transition to SIC(2003) through the IDBR user and management committees.

The IDBR comprises two million enterprises and its main sources are VAT and "Pay as you Earn"(PAYE). In addition, the IDBR holds information on Reporting Units (RUs) and Local Units (LUs). Reporting Units are used as the basis for statistical surveys and usually consist of a complete enterprise but can also represent part of an enterprise where it is possible to collect information below enterprise level. Local units are individual sites or locations at which an enterprise operates and are important for regional analyses. Economic activity classifications are held in each source system (VAT and PAYE) and on all units on the IDBR. The diagram below shows the structure of the IDBR. More information can be found on the National Statistics website at **http://www.statistics.gov.uk/idbr**.

Figure 1

Structure of the IDBR



IDBR Sources

H.M. Customs and Excise (HMCE) registers traders for VAT purposes through its local office network. For each registration, a free text business description is provided. This is coded to the SIC by HMCE staff at one of four regional centres. HMCE made the transition from SIC(92) to SIC(2003) before the ONS and began supplying data on an SIC(2003) basis on 15 May 2002. From this date of conversion, all new registrations and changes to existing registrations for VAT have been coded directly from business descriptions to the SIC(2003). Because the statistical systems were due to convert only from January 2003, it was necessary for the ONS to convert all new codes back to the SIC(92) and hold both versions from May to December 2002.

The IDBR also makes some use of data from Companies House (CH) for updating information on Limited Companies. CH use only the first four digits of the SIC (equivalent to NACE) and made the transition from SIC(92) to SIC(2003) for new companies from January 2003. Existing codes have been converted through a conversion table.

For PAYE purposes the Inland Revenue (IR) uses its own trade classification system. The resulting four digit Trade Classification Number (TCN) does not align with either SIC(92) or SIC(2003) and lacks detail in some industries. The ONS converted TCN codes to SIC(92) codes using a conversion table. A new conversion table has been produced for conversion of the TCN to SIC(2003).

The ONS's main source of information on enterprise group links is Dun & Bradstreet who have used the ONS's conversion table to recode all existing information from a SIC(92) to a SIC(2003) basis.

The Annual Register Inquiry (ARI) is the ONS inquiry through which local units located in Great Britain are identified and maintained (separate arrangements exist for Northern Ireland). The address, employment level and business activity (as a free text description) are requested for each local unit in an enterprise. The ONS uses the Precision Data Coder (PDC), which is a commercial product from the Inference Group Pty Ltd. of Australia, to code to the SIC from these business activity descriptions. It was necessary to obtain an updated version of the PDC to code to SIC(2003).

Conversion tables

Conversion tables were created to code data received in a classification other than SIC(2003) and also for backward conversion to SIC(92). Some of these are transitional, being necessary only until SIC(2003) was introduced. Others will be permanent because the source data will never reconcile fully with SIC(2003). The key conversion tables are:

- VAT to SIC(2003) – to permit conversion of older data supplied by HMCE to the SIC(2003);
- TCN to SIC(2003) – to permit conversion of data supplied by IR to the SIC(2003);
- SIC(2003) to SIC(92) – all conversions were from several SIC(2003) codes to one SIC(92) code, with the exception of iron and steel;
- SIC(92) to SIC(2003) – using percentage conversions based on an analysis of existing data held on the IDBR.

Impact on Users

For each SIC(92) industry where there is a change to the classification with the introduction of the SIC(2003), the number of units, employment and turnover affected has been calculated. Most of the changes have minimal impact. Those affecting a total employment of 10,000 or more in any SIC(92) industry are included in Table 1, which is based on the reporting unit.

The table shows the SIC(92) code affected and the SIC(2003) code to which business units have been reclassified. Iron and steel, SIC(92) codes 2710 and 2730, is unique in that two industries are combined as one in the SIC(2003). SIC(92) code 52.11/9 covers the retail sale in non-specialised stores with food, beverages or tobacco predominating, not elsewhere classified. The SIC(2003) splits this into two parts: those holding an alcohol licence (2); and those without a licence (3). Although the number of units affected is large, it is not possible from within the statistical collection system to identify the two categories, and this is therefore excluded from the table. There are 17,950 reporting units in this SIC with an employment of about 2 million and an annual turnover of about £190 billion.

Table 1 Main Changes at RU level

Reclassifications to new SIC codes

SIC(92)	SIC(2003)	Number of RUs.	Employment	Turnover (£ million)
27.10	27.10	80	79,543	10,504.5
27.35	27.10	35	630	70.2
40.20	40.21	10	–	–
	40.22	5	–	–
51.65	51.86	745	47,004	10,534.0
	51.87	1,920	34,955	6,314.0
52.48/2	52.48/2	845	14,552	43.8
	52.48/7	5,290	43,785	4,226.1
63.12	63.12/1	15	–	–
	63.12/2	5	–	–
	63.12/3	5	–	–
	63.12/9	380	62,182	3,821.3
66.01	66.01/1	120	190,735	238,844.9
	66.01/2	0	–	–
66.03	66.03/1	160	69,467	58,763.4
	66.03/2	5	–	–
72.20	72.21	555	56,679	7,408.5
	72.22	6,160	83,369	8,375.1
74.11/9	74.11/2	355	1,517	144.1
	74.11/3	4,570	116,604	7,169.5
	74.11/9	3,935	85,325	5,714.8

Note: Counts are rounded and employment and turnover are suppressed for rounded counts of 20 or less to avoid disclosure.

In terms of movements from specific SIC(92) codes at the local unit level, the numbers of units involved are generally very small. The main exception is the movement from SIC(92) 7484/9 to SIC(2003) 7415/6&9, which involves 145 local units (of the 615 LUs moving to these headings), with a total employment of 4,132. Table 2 below shows the SIC(2003) codes into which such units have moved. Codes 7415/6 and 7415/9 are combined in this table because of data quality problems still to be resolved.

Table 2 Main changes at LU level

Reclassifications of head offices to SIC Class 7415

SIC(2003)	Additions due to introduction of SIC(2003).	
	Number of local units	Employment
74.15/1	80	2,320
74.15/2	40	3,291
74.15/3	55	2,204
74.15/4	80	2,118
74.15/5	50	2,635
74.15/6 &9	615	18,015
74.15/7	140	12,406
74.15/8	160	7,505

Effect on Product Statistics

PRODCOM (PRODucts of the European COMmunity) is an EU-wide survey of production measuring the value and volume of product sales. Introduced in 1993, PRODCOM covers about 5,000 products across 250 manufacturing industries and is required under European Community regulation. PRODCOM commodity codes comprise 8 digits which are derived by subdividing the 4-digit categories of NACE.

The 2003 changes to NACE/SIC have not influenced the PRODCOM products themselves nor have they affected their descriptions. However, the links between certain products and their associated parent industries have altered. This has prompted some minor changes to the way PRODCOM operates. In particular, for the industries affected, it influences the way businesses are sampled, the estimation process for non-selected businesses and the location of product information published on the National Statistics website. Only SICs in divisions 21–29 are affected (see annex to this article).

Quarterly PRODCOM results will be published on an SIC(2003) basis from June 2003 in respect of 2003 Q1 data and Annual PRODCOM results will be published on an SIC(2003) basis from June 2004 in respect of 2003 data.

A major SIC revision in 2007

The changes introduced by SIC(2003) are relatively minor. However, in 2007, NACE and the related family of national and international classification systems will be the subject of a major revision. Consequently, the UK SIC will also be revised in 2007 unless the UK seeks a national derogation delaying the revision. The change is driven by two main forces – a desire to bring North American economic classification systems and their EU and UN equivalents closer together and a generally agreed need for major revision given that NACE has not been significantly modernised since 1990. An extensive consultation process has started and the UK has sent to Eurostat a significant number of detailed and strategic proposals.

Contacts

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Annex 1

Table showing changes between SIC(1992) (1997 version) and SIC(2003)

SIC(1992) (incorporating subclasses added in the 1997 version)	**SIC(2003)** (changes are shown in **bold** type)
21.21/1 Manufacture of corrugated paper and paperboard, sacks and bags	21.21/1 Manufacture of corrugated paper and paperboard, sacks and bags
21.21/2 This code is no longer in use	21.21/2 This code is no longer in use
21.21/9 Manufacture of cartons, boxes, cases and other containers	**21.21/3 Manufacture of cartons, boxes and cases of corrugated paper and paperboard** **21.21/4 Manufacture of cartons, boxes and cases of non-corrugated paper and paperboard** **21.21/5 Manufacture of cartons and similar containers of paper and paperboard specifically designed for carrying liquids, whether or not waxed** 21.21/9 Manufacture of other containers
21.25 Manufacture of other articles of paper and paperboard not elsewhere classified	**21.25/1 Manufacture of printed labels** **21.25/2 Manufacture of unprinted labels** **21.25/9 Manufacture of other articles of paper and paperboard not elsewhere classified**
22.23 Bookbinding and finishing 22.24 Composition and plate making 22.25 Other activities relating to printing	**22.23 Bookbinding** **22.24 Pre-press activities** **22.25 Ancillary operations related to printing**
27.10 Manufacture of basic iron and steel and of ferro-alloys (ECSC)	**27.10 Manufacture of basic iron and steel and of ferro-alloys** (in addition to the above change of title 27.10 will incorporate existing Class 27.35 'Other first processing of iron and steel n.e.c.; production of non-ECSC ferro-alloys')
27.35 Other first processing of iron and steel n.e.c.; production of non-ECSC ferro-alloys	**This Class will be aggregated with 27.10 (see above) and will cease to exist as a separate Class.**
29.40/1 Manufacture of metalworking machine tools 29.40/9 Manufacture of other machine tools	**29.41 Manufacture of portable hand-held power tools** **29.42 Manufacture of metalworking machine tools** **29.43 Manufacture of other machine tools n.e.c.**
40.10/1 Electricity generation 40.10/2 Electricity transmission, distribution and supply	**40.11 Production of electricity** **40.12 Transmission of electricity** **40.13 Distribution and trade in electricity**
40.20 Manufacture of gas; distribution of gaseous fuels through mains	**40.21 Manufacture of gas** **40.22 Distribution and trade of gaseous fuels through mains**
51.33 Wholesale of dairy produce, eggs and edible oils and fats	**51.33/1 Wholesale of dairy produce** **51.33/2 Wholesale of eggs** **51.33/3 Wholesale of edible oils and fats**
51.34 Wholesale of alcoholic and other beverages	**51.34/1 Wholesale of fruit and vegetable juices, mineral waters and soft drinks** **51.34/2 Wholesale of wine, beer, spirits and other alcoholic beverages**

51.61 Wholesale of machine tools	**51.81** Wholesale of machine tools
51.62 Wholesale of construction machinery	**51.82** Wholesale of mining, construction and civil engineering machinery
51.63 Wholesale of machinery for the textile industry, and of sewing and knitting machines	**51.83** Wholesale of machinery for the textile industry, and of sewing and knitting machines
51.64 Wholesale of office machinery and equipment	**51.84 Wholesale of computers, computer peripheral equipment and software** **51.85 Wholesale of other office machinery and equipment**
51.65 Wholesale of other machinery for use in industry, trade and navigation	**51.86 Wholesale of other electronic parts and equipment** **51.87 Wholesale of other machinery for use in industry, trade and navigation**
51.66 Wholesale of agricultural machinery and accessories and implements, including tractors	**51.88** Wholesale of agricultural machinery and accessories and implements, including tractors
51.70 Other wholesale	**51.90** Other wholesale
52.11/1 Retail sale by confectioners, tobacconists and newsagents (CTNs') 52.11/9 Retail sale in non-specialised stores with food, beverages or tobacco predominating, not elsewhere classified	52.11/1 Retail sale by confectioners, tobacconists and newsagents (CTNs') **52.11/2 Retail in non-specialised stores holding an alcohol licence, with food, beverages or tobacco predominating, not elsewhere classified (currently coded to 52.11/9)** **52.11/3 Retail in non-specialised stores not holding an alcohol licence, with food, beverages or tobacco predominating, not elsewhere classified (currently coded to 52.11/9)**
52.48/1 Retail sale of floor coverings 52.48/2 Retail sale of photographic, optical and precision equipment, office supplies and equipment (including computers, etc.) 52.48/3 This code is no longer in use 52.48/4 Retail sale of jewellery, clocks and watches 52.48/5 Retail sale of sports goods, games and toys, stamps and coins 52.48/9 Other retail sale in specialised stores not elsewhere classified	52.48/1 Retail sale of floor coverings 52.48/2 Retail sale of photographic, optical and precision equipment, office supplies and equipment (including computers, etc.) 52.48/3 This code is no longer in use 52.48/4 Retail sale of jewellery, clocks and watches 52.48/5 Retail sale of sports goods, games and toys, stamps and coins **52.48/6 Retail sale in commercial art galleries** **52.48/7 Retail sale by opticians** **52.48/8 Retail sale of mobile telephones** 52.48/9 Other retail sale in specialised stores not elsewhere classified
52.50 Retail of second-hand goods in stores	**52.50/1 Retail of antiques, including antique books** **52.50/9 Retail of other second-hand goods**
55.11/1 Hotels and motels, with restaurant (licensed) 55.11/2 Hotels and motels, with restaurant (unlicensed) 55.12 Hotels and motels without restaurant	**55.10/1 Hotels and motels, with restaurant (licensed)** **55.10/2 Hotels and motels, with restaurant (unlicensed)** **55.10/3 Hotels and motels, without restaurant**
63.12 Storage and warehousing	**63.12/1 Storage of frozen and refrigerated goods** **63.12/2 Storage of liquids or gases** **63.12/3 Storage of grain** **63.12/9 Other storage and warehousing**

65.23/1 Activities of Investment Trusts	65.23/1 Activities of Investment Trusts
65.23/2 Activities of unit trusts and property unit trusts	**65.23/2 Activities of unit trusts**
65.23/3 Security dealing on own account	65.23/3 Security dealing on own account
65.23/4 Activities of bank holding companies	65.23/4 Activities of bank holding companies
65.23/5 Activities of venture and development capital companies	65.23/5 Activities of venture and development capital companies
65.23/6 This code is no longer in use	65.23/6 This code is no longer in use
65.23/9 Financial intermediation n.e.c.	**65.23/7 Activities of open-ended investment companies** (currently coded to 65.23/2)
	65.23/8 Activities of property unit trusts (currently coded to 65.23/2)
	65.23/9 Financial intermediation n.e.c.
66.01 Life insurance	**66.01/1 Life insurance**
	66.01/2 Life re-insurance
66.03 Non-life insurance	**66.03/1 Non-life insurance**
	66.03/2 Non-life re-insurance
72.20 Software consultancy and supply	**72.21 Software publishing**
	72.22 Other software consultancy and supply
74.11/1 Activities of Patent and Copyright Agents	74.11/1 Activities of Patent and Copyright Agents
74.11/9 Legal activities not elsewhere classified	**74.11/2 Barristers at Law**
	74.11/3 Solicitors
	74.11/9 Other legal activities not elsewhere classified
74.15 Holding companies	74.15 Holding companies
	'Head offices' move to 74.15. Currently they are coded to the main activity of the businesses they serve
74.70/1 Traditional cleaning activities	74.70/1 Traditional cleaning services
74.70/9 Cleaning activities not elsewhere classified	**74.70/2 Window cleaning services**
	74.70/3 Disinfecting and exterminating services
	74.70/4 Specialised cleaning services
	74.70/5 Furnace and chimney cleaning services
	74.70/9 Other cleaning services not elsewhere classified
74.81/1 Operation of coin-operated photographic machines	74.81/1 **No longer in use (see 93.05/1)**
74.81/2 Other portrait photographic activities	74.81/2 **Portrait photographic activities**
74.81/9 Other photographic activities n.e.c.	**74.81/3 Other specialist photography** (currently coded to 74.81/9)
	74.81/4 Film processing (currently coded to74.81/9)
	74.81/9 Other photographic activities n.e.c.
74.83 Secretarial and translation activities	**74.85 Secretarial and translation activities**
	74.86 Call centre activities
74.84/1 Credit reporting and collection agency activities	**74.87/1 Credit reporting and collection agency activities**
74.84/2 Speciality design activities	**74.87/2 Speciality design activities**
74.84/3 Activities of exhibition and fair organisers	**74.87/3 Activities of exhibition and fair organisers**
74.84/4 Activities of conference organisers	**74.87/4 Activities of conference organisers**
74.84/9 Other business activities not elsewhere classified	**74.87/9 Other business activities not elsewhere classified**
90.00 /1 Sewage disposal activities	**90.01 Collection and treatment of sewage**
90.00/2 Refuse disposal activities	**90.02 Collection and treatment of other waste**
90.00/3 Sanitation and similar activities	**90.03 Sanitation, remediation and similar activities**

92.72 Other recreational activities not elsewhere classified	**92.72/1 Motion picture, television and other theatrical casting** **92.72/9 Other recreational services not elsewhere classified**
93.05 Other service activities not elsewhere classified	**93.05/1 Operation of coin-operated photographic machines (moved from 74.81/1)** **93.05/9 Other service activities not elsewhere classified**
Class 96.00 not present in SIC(92)	**96.00 Undifferentiated goods producing activities of private households for own use**
Class 97.00 not present in SIC(92)	**97.00 Undifferentiated services producing activities of private households for own use**

The effect of annual chain-linking on *Blue Book* 2002 annual growth estimates

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Summary

Chained volume measures for GDP and GDP components are due be published for the first time in the UK on 30 September 2003. This article describes the results from test-running the new annual chain-linking (ACL) systems used for compiling these chained volume measures using inputs consistent with *Blue Book* 2002. The results show that the effects on GDP growth rates published in *Blue Book* 2002 as a result of ACL are no larger than +/–0.2 per cent from 1995 to 2001. These effects are in line with those predicted by economic theory. Analysis of the results shows that the small net negative effect of ACL on recent annual growth can be attributed to expenditure on computers, investment in machinery and equipment and trade in high tech goods in the expenditure measure of GDP. A similar small net negative effect on the output measure of GDP can be attributed to the production of communication services partially counterbalanced by a positive contribution from manufacturing. This kind of comparison presents the only opportunity to isolate the effects of ACL on estimates before revisions to data inputs are introduced as part of the usual *Blue Book* process which will interact with ACL and the sources of these other revisions are listed in this article. Final revisions to growth will therefore differ from the effects shown here.

Introduction

Annual chain-linking (ACL) will be introduced into the UK's national accounts from the Quarterly National Accounts First Release which is due to be published on 30 September 2003 and chained volume measures in this First Release will be consistent with the *Blue Book* 2003 (BB2003) electronic dataset which is due to be published on 24 October 2003.

ACL is a method for aggregating volume measures of economic growth, which better reflects the changing structure of industry and patterns of expenditure. The ACL and existing fixed base methods for aggregating deflated GDP are described in detail in an earlier article (Tuke and Reed 2001). Analyses of the effect of ACL on the output measure of GDP and components of the expenditure measure of GDP were also given in earlier articles (Tuke and Reed 2001, Tuke 2002, Tuke and Ruffles 2002). In these articles, for the output measure, input data were consistent with *Blue Book* 2001 but for the components of the expenditure measure, the data used were consistent with *Blue Book* 2002 (BB2002). As different data were used in these earlier articles, it was not possible to directly compare the effect of annual chain-linking on the expenditure and output measures of GDP.

In readiness for September 2003, compilation systems have been built to carry out the new ACL aggregations. Once full quality assurance of these systems has taken place, they will be used to calculate BB2003 estimates. The first part of quality assuring the new systems involved the checking of aggregation structures, coding and application of new functions. For the second part of quality assurance, data from the BB2002 round were processed in the new systems and then the test system outputs were compared with published outputs from the fixed base systems. However, for present purposes, this comprehensive test run was particularly important as it allowed an investigation of the effect of ACL on the balance between the expenditure and output measures for GDP and enables us to share, with national accounts users, information on the likely magnitude of the ACL effect on GDP growth.

It is expected (see earlier articles mentioned above) that the move from the fixed base system to ACL will have: a small upward impact on annual growth in 1995; no change to annual growth in 1996; a combination of effects that lead to downward revisions to annual growth from 1997 to 2001. This effect would occur if most components of GDP had either rising volumes and falling prices or falling volumes

and stable prices. Components with rising volumes and falling prices tend to be given too much weight in calculations further away from the base year.

The analyses shown here have been carried out using the 'contributions to growth' calculations described in an earlier article for annual growth estimates and compare the growth rates of the fixed base estimates[4] published in BB2002[1] with the growth rates of chained volume measures calculated from the same data. The complexity of inputs to the national accounts meant that it was not possible to calculate contributions to growth differences from the level at which ACL has been introduced for each component. Instead, contributions to the effect of ACL on the annual growth estimates, originally published in BB2002[1], have been calculated from an intermediate level, indicated for each component below. At this stage, the analysis has been restricted to annual data for the period 1994 to 2001. More details on the effects from chain-linking years prior to 1994 will be released in due course.

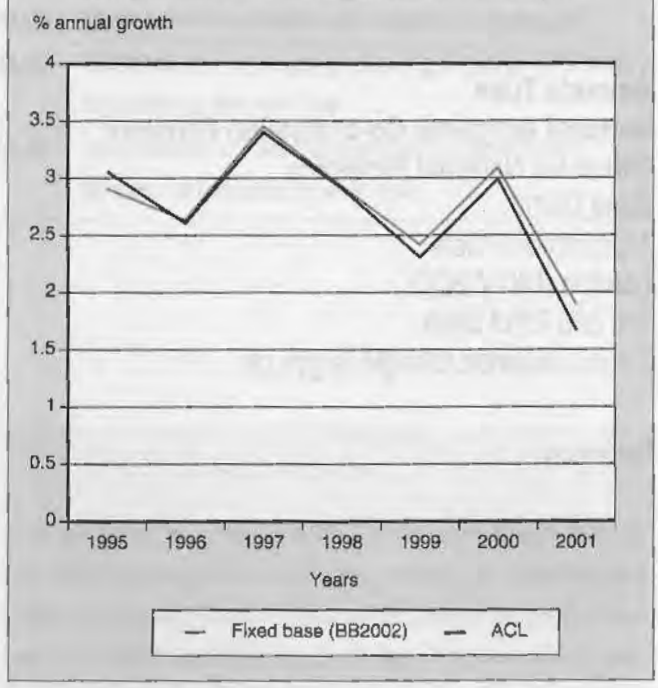
This kind of comparison presents the only opportunity to isolate the effects of ACL on estimates before revisions to data inputs are introduced in *Blue Book* 2003 (BB2003). The estimates published here should not be considered to be the actual estimates which will be published in BB2003 as the calculations do not include other sources of revisions, mainly to data inputs, which will be included in BB2003. The last section of this article explains the sources of those revisions.

Analyses of chained volume measures for overall expenditure measure of GDP at market prices

A comparison of fixed base and ACL shows that the impact of ACL on annual growth rate since 1995 is modest, with changes of +/–0.2 per cent or less (Figure 1).

Figure 1

A comparison of GDP growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs



Analysis of the contributions of each expenditure component of GDP shows that the largest component of the expenditure measure, household final consumption expenditure (HHFCE), causes a downward effect in all years from 1997 (Table 1). The exports of goods component, gross fixed capital formation (GFCF), changes in inventories and exports of goods and services also cause a downward effect. The biggest effect, however, is from imports of goods. As the imports of goods component is deducted in the calculation of GDP, it has a positive effect on GDP growth rates, which offsets the negative effect from the other components.

Table 1 The overall impact to the annual growth rate of the expenditure measure of gross domestic product (GDP) from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Household final consumption expenditure	0.0	0.0	–0.1	–0.1	–0.3	–0.5	–0.5
Non-profit-making institutions serving households	0.0	0.0	0.0	0.0	0.0	0.0	0.0
General government final consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross fixed capital formation	0.0	0.0	0.0	–0.3	–0.1	–0.2	0.0
Changes in inventories	0.1	0.0	–0.1	0.1	–0.2	–0.1	0.3
Net acquisitions of valuables	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports of goods	0.0	0.0	–0.1	–0.1	–0.2	–0.7	–0.1
Exports of services	0.0	0.0	0.0	–0.1	–0.2	–0.1	0.0
less Imports of goods	0.0	0.0	0.1	0.4	0.6	1.3	0.0
less Imports of services	0.0	0.0	0.0	0.1	0.1	0.2	0.1
GDP (expenditure measure)	0.2	0.0	0.0	0.0	–0.1	–0.1	–0.2

Discrepancies between the sum of the components and total GDP are due to rounding to 1dp.

The effects seen from 1995 to 2000 are broadly in line with the expected results of increasing volumes and falling prices in key areas, with a more significant effect further away from the previous base year. The most interesting results occur in 2001. Apart from HHFCE, the impact of ACL on growth rates is either reversed or significantly diminished. The causes of this effect are explored below.

The following sections show how sub-components contribute to the effects of ACL on the annual growth of the aggregates listed above. No further analysis was carried out for Non-profit-making institutions serving households expenditure (NPISH), General Government expenditure (GGFC) and Acquisition less disposals of valuables, as the contributions of these components to the effects of ACL on GDP growth rates were not significantly different from zero in any year from 1995 to 2001.

Analyses of chained volume measures for household final consumption expenditure (HHFCE)

ACL causes a downward effect on annual growth estimates of HHFCE from 1997 onwards (Figure 2). The effects shown here are similar to the modelled ACL effects previously published in *Economic Trends* (Tuke and Ruffles 2003). The differences are because the previous model applied ACL aggregation to a breakdown of around 230 components, slightly more detailed than the disaggregation published in *Consumer Trends*, whereas this test run applies ACL to a more disaggregated breakdown.

The main contributors to the downward effect of ACL on the published annual growth rates from 1997 to 2001 are spending on recreation and culture, clothing and footwear and to a lesser extent transport and communication services (Table 2). As expected, within recreation and culture, the main effect is from spending on information processing equipment, and to a lesser extent audio-visual equipment. Between 1995 and 2001, the volume of expenditure on information processing equipment increased by 450 per cent while prices fell by over 60 per cent. This interaction of falling prices and volume growth can also be seen in spending on clothing and footwear and telecommunications.

Figure 2

A comparison of household final consumption expenditure growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs

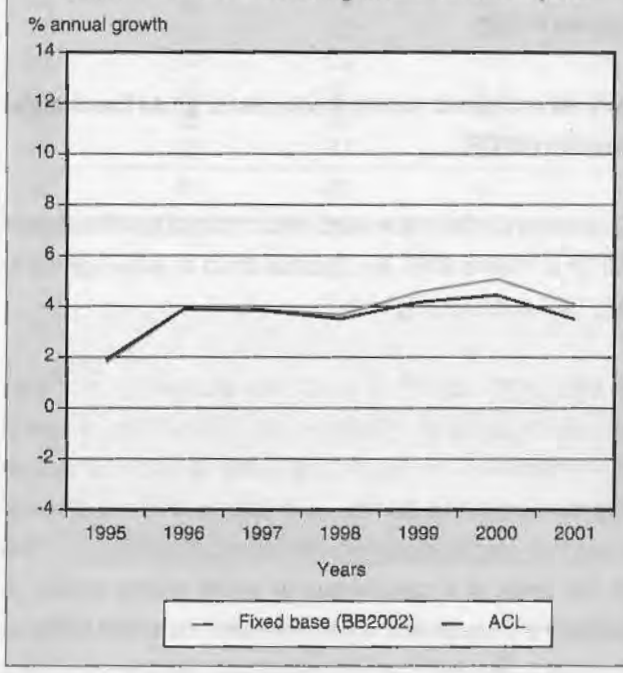


Table 2 The overall impact on the annual growth rate of household final consumption expenditure (HHFCE) from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Food and non-alc. beverages	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alcohol and tobacco	0.0	0.0	0.0	0.0	0.0	–0.1	0.0
Clothing and footwear	0.0	0.0	0.0	0.0	0.0	–0.1	–0.1
Housing utilities and fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Furnishings, etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transport	0.0	0.0	0.0	0.0	0.0	–0.1	0.0
Communication	0.0	0.0	0.0	0.0	0.0	–0.1	–0.1
Recreation and culture	0.0	0.0	0.0	–0.1	–0.2	–0.3	–0.4
Education	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Restaurants and hotels	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Misc. goods and services	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Net trade	0.0	0.0	0.0	–0.1	–0.1	–0.1	0.0
HHFCE	0.1	0.0	–0.1	–0.2	–0.4	–0.7	–0.6

Discrepancies between the sum of the components and total are due to rounding to 1dp.

The downward effect on growth diminishes slightly in 2001 and this appears to be due to a reduced downward effect from tourism in net trade. From 1998 to 2000, expenditure abroad rose very strongly as sterling strengthened. In 2001, the pound weakened, leading to higher prices for UK tourists abroad and this reduces the downward effect on growth in 2001.

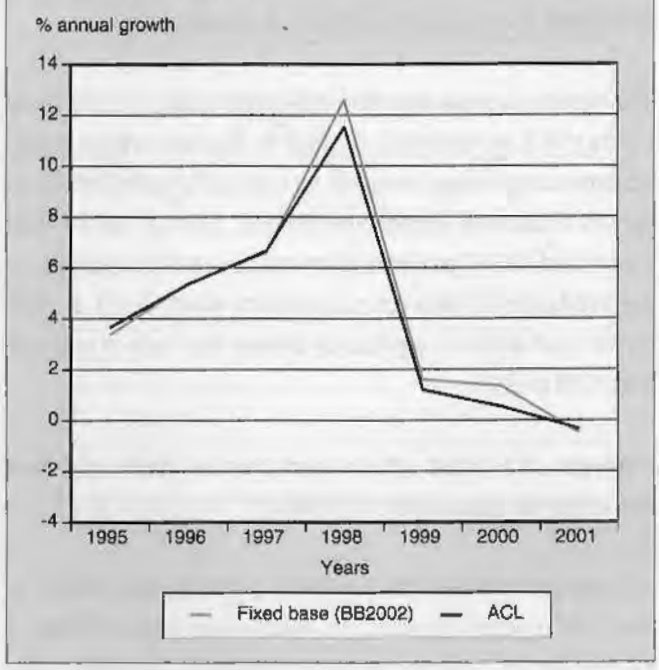
Analyses of chained volume measures for gross fixed capital formation (GFCF)

ACL causes a significant downward effect on annual growth estimates of GFCF in 1998 to 2000, but a positive effect on annual growth in 1995, 1997 and 2001 (Figure 3).

The effect of ACL on GFCF growth was analysed by calculating contributions to growth difference using a breakdown of around 100 main industry and asset types (Table 3). The contributions analysis indicates that the upward revision in 1995 was primarily derived from machinery and equipment and other buildings. This was the result of a combination of strong volume growth in machinery and equipment, while prices were stable and a decline in volumes in other buildings while prices rose. The downward effect of ACL on total GFCF from 1998 to 2000 is driven by machinery and equipment, where volumes rose sharply and prices fell. The effect is most significant in 1998 when there was a surge of growth (23 per cent) in the run up to the millennium (Y2K). Over the period 1995 to 2000, the volume of investment of machinery and equipment in BB2002 increased by over 60 per cent, while prices fell by 15 per cent. The effects on total GFCF over this period derives predominantly from investment in machinery and equipment by the transport and communication, financial services and real estate and business services industries. The effect of ACL reverses in 2001. In 2001, investment in machinery and equipment has a positive effect because the volume of investment fell by 2.5 per cent. Investment in other buildings has a significant positive effect in 1999, when investment volume more than doubled. In 2001, investment in dwellings declined while prices rose strongly.

Figure 3

A comparison of gross fixed capital formation growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs



Analysis of chained volume measures for changes in inventories

In 1999 and 2000, inventories has a negative effect on GDP growth rates as a result of ACL (referring back to Table 1). This largely reflects a build up of inventory volumes while prices were flat. In 1999 in particular, the effect is derived from a build up of retail

Table 3 The overall impact on the annual growth of gross fixed capital formation (GFCF) from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Machinery & equipment	0.2	0.0	0.0	–0.9	–0.5	–0.8	0.2
Transport equipment	0.0	0.0	0.0	–0.1	0.0	0.0	0.0
Dwellings	0.0	0.0	0.0	0.0	–0.1	0.0	–0.1
Intangible assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other buildings	0.1	0.0	0.1	0.0	0.2	0.0	0.0
GFCF	0.3	0.0	0.1	–1.0	–0.4	–0.8	0.1

Discrepancies between the sum of the components and total GDP are due to rounding to 1dp.

Table 4 The overall impact on annual growth of changes in inventories from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Mining & Quarrying	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Manufacturing	0.0	0.0	0.0	–0.1	0.0	0.0	0.1
Electricty, Gas & Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail	0.0	0.0	–0.1	0.0	–0.1	0.1	0.0
Wholesale	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.2	0.0	0.0	0.1	0.1	–0.2	0.1
Changes in inventories	0.2	0.0	0.0	0.1	–0.2	–0.1	0.3

Discrepancies between the sum of the components and total are due to rounding to 1dp.

stocks (Table 4). In 2001, the downward effect on GDP growth is reversed sharply, mainly by a sharp unwind of inventories held by manufacturers.

Analyses of chained volume measures for exports of goods

ACL has an upward effect on the total exports of goods annual growth estimate in 1995, followed by small downward revisions in the period 1997 to 2001 (Figure 4).

The principal cause of the downward effect on growth rates is from electrical machinery (Table 5). This effect occurs because volumes of electrical machinery exports rose strongly up to 2000, while export prices fell. Over this time, export volumes of capital electrical machinery rose by 222 per cent while prices fell by 30 per cent, export volumes of intermediate electrical machinery rose by 67 per cent while prices fell by 24 per cent. The effect unwinds in 2001, as trade volumes fell sharply. In 2001, export volumes of capital electrical machinery rose by only 0.5 per cent while prices fell by only 0.5 per cent and export volumes of intermediate electrical machinery rose by only 3 per cent while prices fell by 4

Figure 4

A comparison of exports of goods growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs

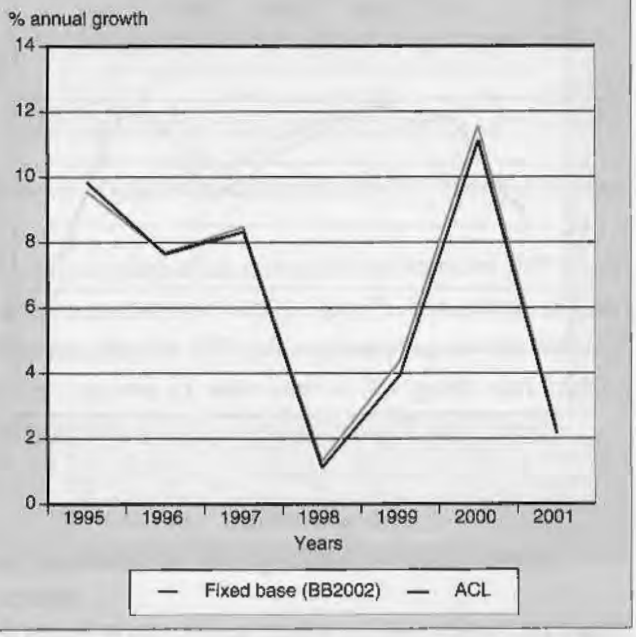


Table 5 The overall impact on annual growth rates of exports of goods from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Metal ores	0.0	0.0	0.0	0.0	0.0	–0.1	0.0
Crude Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Organic chemicals	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Medicinal products	0.0	0.0	0.0	0.0	0.0	0.0	–0.1
Road vehicles (not PMC)	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Aircraft	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Mechanical machinery (interm.)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Electrical machinery (interm.)	0.0	0.0	0.0	0.0	–0.1	–0.3	–0.1
Electrical machinery (capital)	0.2	0.0	–0.1	–0.1	–0.2	–0.5	0.0
Other exports of goods	0.0	0.0	0.0	0.0	–0.1	0.2	–0.1
Exports of goods	0.3	0.0	–0.1	–0.2	–0.4	–0.4	–0.1

Discrepancies between the sum of the components and total are due to rounding to 1dp.

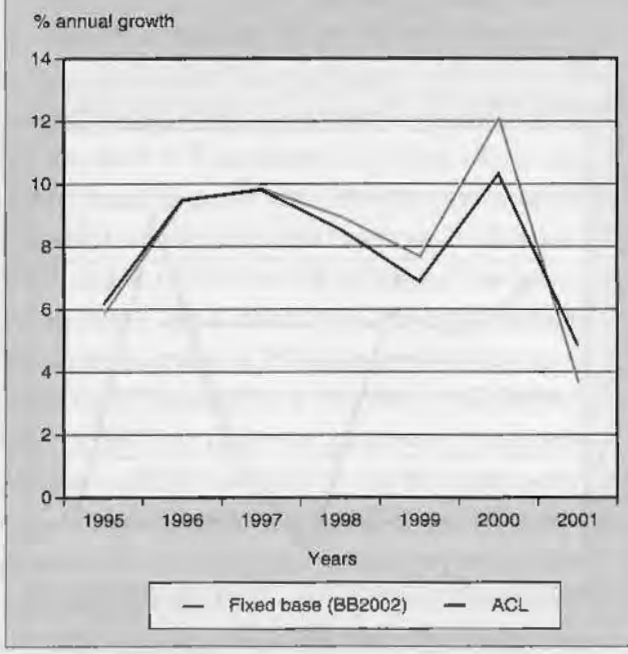
per cent. A positive contribution to the growth estimate in 2001 occurred because of the increase in volumes of exports of crude oil in 2001 while prices surged by 60 per cent.

Analyses of chained volume measures for imports of goods

The most significant impact on annual growth rates for ACL is imports of goods. There is an upward effect in 1995, downward effects from 1997 to 2000, and a sharp turnaround into an upward effect in 2001 (Figure 5).

Figure 5

A comparison of imports of goods growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs



The main contributor to the negative effects of ACL on imports of goods from 1997 to 2000 is electrical machinery (Table 6). As imports are deducted in the calculation of GDP, this negative effect on total imports of goods becomes a positive effect on GDP growth rates (Table 1). In 2001, trade volumes fell, particularly relating to electronic goods. Lower volumes and lower prices tend to lead to an upward effect on growth rates.

The contribution to the effects of ACL are most significant in areas where there has been significant growth and falling prices. For example, in intermediate electrical machinery (import volumes rose by 280 per cent between 1995 and 2000, while prices fell by 42 per cent) and in capital electrical machinery (import volumes rose by 280 per cent between 1995 and 2000, while prices fell by 43 per cent). In imports of goods the downward effect on growth is diminished in 2001 even more strikingly than in exports of goods and can be attributed to intermediate electrical machinery (import volumes fell by 14 per cent in 2001, while prices fell by 7 per cent) and capital electrical machinery (volumes rose by only 5 per cent in 2001, while prices fell by 13 per cent).

Other significant effects can be attributed to imports of silver (volumes fell by 60 per cent in 1999, while prices fell by 12 per cent), crude oil (volumes rose strongly in 2000 and 2001, while prices trebled since 1999), oil products (volumes rose strongly since 1999, while prices rose by 45 per cent), precious stones (volumes rose by 38 per cent in 1999, while prices remained flat), clothing (volumes rose in 2000 and 2001 while prices rose in 2000), aircraft (volumes rose strongly in 2001 while prices rose by over 10 per cent), ships (volumes doubled in 2000 and fell back 40 per cent in 2001) and cars (volumes rose by 25 per cent in 2001, while prices remained steady).

Table 6 The overall impact on annnual growth rates of imports of goods from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Silver	0.0	0.0	0.0	0.0	–0.1	0.0	0.0
Crude oil	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Oil products	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Precious stones	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Clothing	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Aircraft	0.0	0.0	0.1	0.0	–0.1	0.0	0.2
Ships	0.0	0.0	0.0	0.0	0.0	0.1	–0.1
Passenger motor cars	0.0	0.0	0.0	0.0	0.1	–0.1	0.2
Mechanical machinery (interm.)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Electrical machinery (interm.)	0.1	0.0	–0.1	–0.3	–0.6	–1.3	0.7
Electrical machinery (capital)	0.2	0.0	–0.1	–0.3	–0.5	–1.0	–0.2
Other imports	0.0	0.0	0.0	0.1	0.1	0.2	0.0
Imports of goods	0.3	0.0	–0.1	–0.4	–0.8	–1.8	1.2

Discrepancies between the sum of the components and total are due to rounding to 1dp.

The effect of ACL is more marked on imports of goods compared to exports. Prices of electrical goods have fallen more sharply on imported goods, while volume of these goods has increased at a faster pace in recent years. The effect is also more marked in 2001 where volume of imports and prices fell faster than for exports. When combined, the balance of trade in goods is estimated to have a persistent upward effect on GDP growth rates for 1998–2000 followed by a downward effect in 2001 (referring back to Table 1).

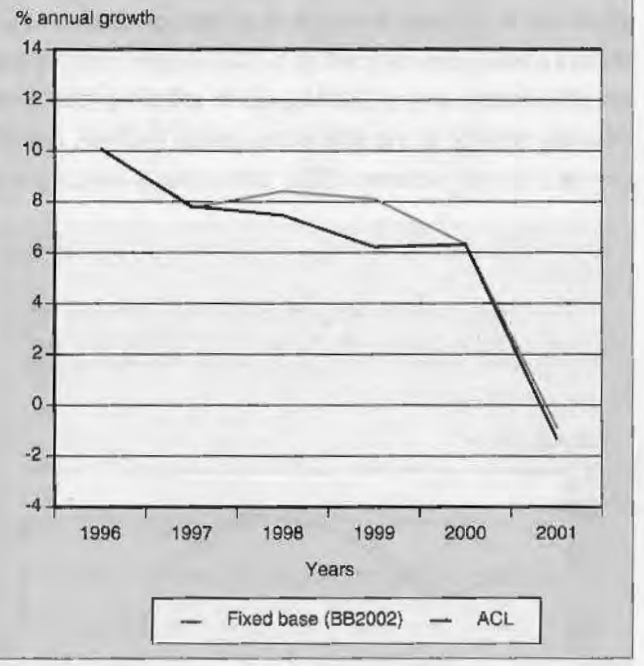
Analyses of chained volume measures for exports of services

ACL has a negative effect on growth estimates of total exports of services from 1998 to 2001 (Figure 6).

Analysis of the contribution to growth differences to total exports of services was carried out at account level (Table 7). The analysis shows that revisions to exports of services are largely driven by communication services and other business services. Exports of communication services has a significant effect because export volumes rose by around 50 per cent per year from 1997 to 1999 while prices halved over the period. The effect is much less in 2001 as exports of communication services only increased marginally in that year. Other business services also have a significant effect because volumes grew from 1997 to 1999 and prices fell. Overall, the biggest downward effects are in 1998 and 1999 when volumes and prices moved most significantly for both communication and other business services. The effect is less marked in 2000 and 2001 as prices of business services rose and volumes rose less quickly. A further contribution is made by exports of financial services in 2000, when exports rose by 25 per cent.

Figure **6**

A comparison of exports of services growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs



Analyses of chained volume measures for imports of services

ACL has a negative effect on imports of services from 1997 to 2000 and then a positive effect in 2001 (Figure 7). As imports are deducted in the calculation of GDP, this negative effect on total Imports of services becomes a positive effect on GDP growth rates (referring back to Table 1).

Table 7 The impact on annual growth rates of exports of services from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Sea transport	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Air transport	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Other transport	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	–0.1	0.0	–0.3
Communication	0.0	0.0	–0.1	–0.7	–1.4	–0.7	–0.1
Construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Insurance	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Financial	0.0	0.0	0.1	0.0	0.1	0.7	–0.1
Computer	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Royalties	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other business	0.0	0.0	0.0	–0.3	–0.7	0.0	–0.2
Personal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports of services	0.0	0.0	0.0	–1.0	–1.9	–0.1	–0.4

Discrepancies between the sum of the components and total are due to rounding to 1dp.

Analysis of the contribution to growth differences to total imports of services was carried out at account level (Table 8). The most significant contribution to the downward revisions to annual growth was communication services (import volumes rose by over 350 per cent between 1995 and 2001 and prices fell by 64 per cent). Other significant effects can be attributed to imports of air transport services, which shows a positive effect on growth up to 2000 (volumes remained high and prices steady, while in 2001 volumes fell and prices rose), travel (volumes remained strong while prices steadily declined), financial services (increase in volumes in 2000), other business services (prices and volumes increased up to 2000 and volumes fell in 2001) and government services (sharp movements in volume in 1999 and 2000).

Analyses of chained volume measures for overall output measure of GDP at basic prices

ACL has a negative effect on annual growth of the output measure GDP in basic prices from 1998 to 2000 and then a small positive effect in 2001 (Figure 8).

Figure 7

A comparison of imports of services growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs

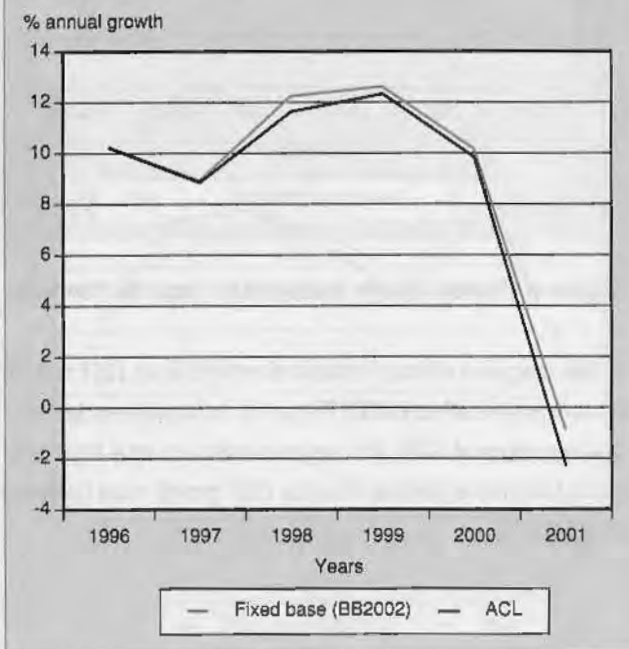


Figure 8

A comparison of growth estimates of the output measure of GDP as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs

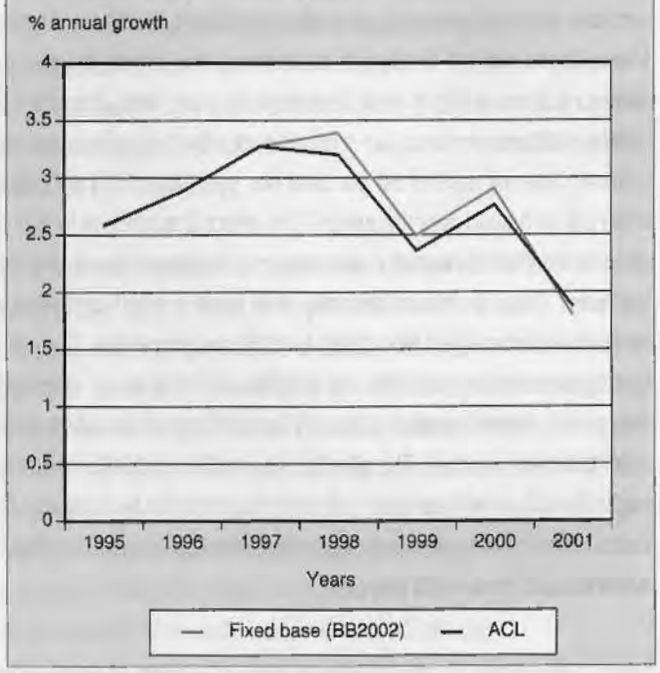


Table 8 The impact on annual growth rates of imports of services from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from each sub-component to the total revision

	1995	1996	1997	1998	1999	2000	2001
Sea transport	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Air transport	0.0	0.0	0.0	0.0	0.2	0.1	-0.2
Other transport	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	-0.3	-0.2	-0.2	0.0
Communication	0.0	0.0	-0.1	-0.3	-0.6	-0.4	-0.9
Construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Insurance	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial	0.0	0.0	0.0	0.0	0.0	0.2	0.1
Computer	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Royalties	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other business	0.0	0.0	0.0	0.0	0.1	0.1	-0.2
Personal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government	0.0	0.0	0.0	-0.1	0.2	-0.2	0.0
Imports of services	0.0	0.0	0.0	-0.6	-0.3	-0.3	-1.4

Discrepancies between the sum of the components and total are due to rounding to 1dp.

Table 9 The impact on annual growth rates of the output measure of GDP at basic prices from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from nine components to the total revision

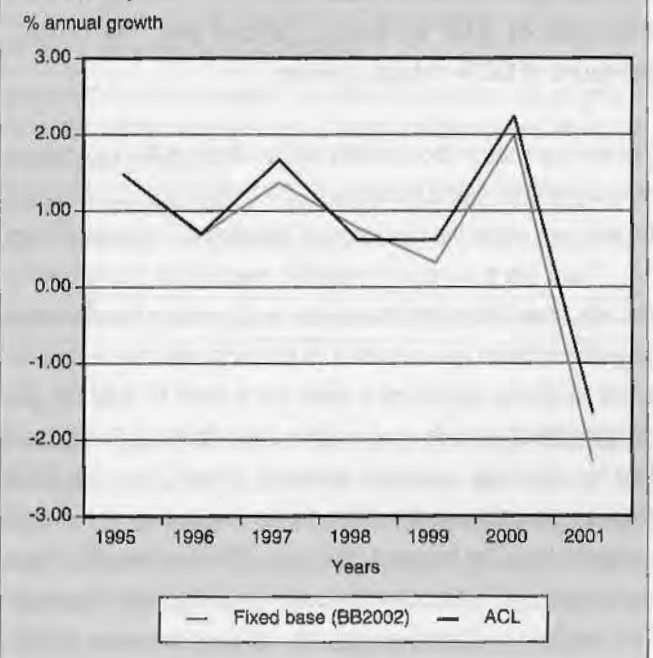
		1995	1996	1997	1998	1999	2000	2001
A,B	Agriculture, forestry and fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C	Mining and quarrying	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	Manufacturing	0.0	0.0	0.1	0.0	0.1	0.0	0.1
E	Electricity, gas and water supply	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G,H	Distribution, hotels and restaurants	0.0	0.0	0.0	–0.1	0.0	–0.1	0.0
I	Transport & Communication	0.0	0.0	–0.1	–0.1	–0.2	–0.2	–0.2
J,K	Financial, real estate, renting and business activities	0.0	0.0	0.0	0.0	0.0	0.1	0.0
L–Q	Other services	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GDP (output measure) at basic prices		0.0	0.0	0.0	–0.2	–0.2	–0.2	0.1

Discrepancies between the sum of the components and total are due to rounding to 1dp.

The analysis of contributions to these effects was initially carried out for a nine component industrial breakdown of the output measure of GDP (Table 9). There were insignificantly small changes to annual growth rates in 1995 and 1997 with 1996 unchanged as expected. ACL does have a downward impact on annual growth rates from 1998 to 2000. In 2001, growth rates are raised slightly by ACL. The downward revisions from 1998 to 2000 can be attributed predominantly to the effect of transport and communication and distribution services. Within transport and communication the main cause of downward revisions was in communication services (volumes rose by over 80 per cent between 1995 and 2000, while prices fell sharply). However, in 2001 the annual growth rate is raised slightly. While transport and communication has a downward effect on the 2001 growth estimate of GDP, this is offset by small upward effects from manufacturing and agriculture. The upward effect from agriculture is mainly due to the foot and mouth epidemic (volumes fell by over 11 per cent while prices also fell).

Figure 9

A comparison of Manufacturing growth estimates as published in *Blue Book* 2002 and annual chain-linking growth estimates calculated using the same data inputs



A further analysis was carried out for the sub-components of manufacturing (Figure 9 and Table 10). The main impact of ACL is to raise annual growth estimates for manufacturing in every year since 1996 except 1998. Largely as expected, manufacture of electrical and optical goods has the biggest impact on GDP growth but the downward effect is reversed in 2001 as production of high-tech equipment fell sharply. The combined positive effects of other industries more than offsets this downward effect, most notably from DG where there is a combination of strong growth in pharmaceuticals, chemicals and fertilisers and weak growth in soaps and detergents. Other significant effects can be attributed to DJ (lower growth in non-ferrous metals and higher growth in manufacture of tools), DK (1997 increase in manufacture of equipment for construction and mining and quarrying), DM (1999 increase in manufacture of locomotives and rolling stock, aircraft and pleasure boats.) and DE (Manufacture of paper and publishing) where there was a switch to household paper products and an increased prominence of music publishing.

Table 10 The impact on annual growth rates of manufacturing from applying annual chain-linking to the *Blue Book* 2002 input dataset and contributions from sub-components to the total revision

	1995	1996	1997	1998	1999	2000	2001
DA Food, beverages and tobacco	0.0	0.0	0.0	0.1	0.1	0.0	0.0
DB Textiles and textile products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DC Leather and leather products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DD Wood and wood products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DE Pulp, paper and paper products; publishing and printing	0.0	0.0	0.1	0.0	0.0	0.0	0.3
DF Coke, petroleum and nuclear fuel	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DG Chemicals, chemical products and man-made fibres	0.0	0.0	0.1	-0.1	0.0	0.2	0.1
DH Rubber and plastic products	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DI Other non-metallic mineral products	0.0	0.0	0.0	0.0	0.1	0.0	0.0
DJ Basic metals and fabricated metal products	0.0	0.0	0.0	0.0	0.1	0.2	0.1
DK Machinery and equipment nec.	0.0	0.0	0.1	0.0	0.0	0.0	0.0
DL Electrical and optical	0.0	0.0	0.0	-0.1	0.0	-0.3	0.3
DM Transport equipment	0.0	0.0	0.0	-0.1	0.1	0.0	0.0
DN Manufacturing nec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D Total manufacturing	0.0	0.0	0.3	-0.2	0.3	0.3	0.6

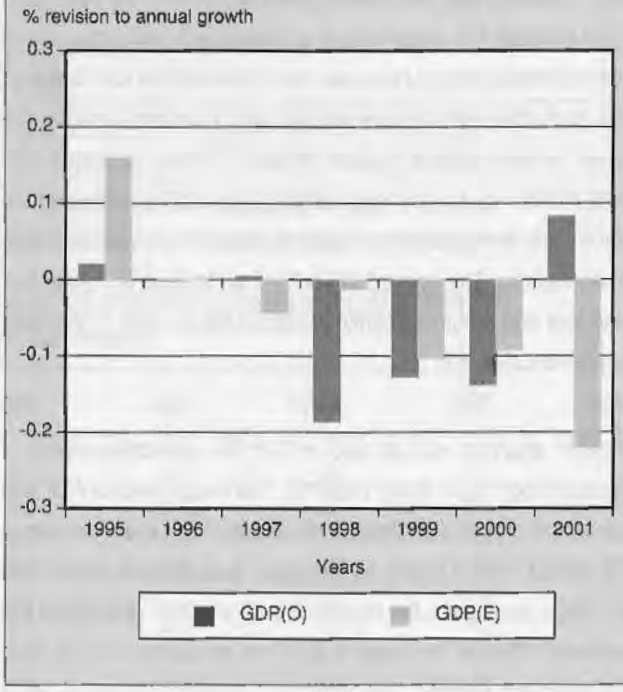
Discrepancies between the sum of the components and total are due to rounding to 1dp.

Comparisons between ACL effects on the expenditure measure of GDP at market prices and the output measure of GDP at basic prices

The analyses above show broadly similar effects on the expenditure measure and the output measure of GDP (basic prices) which would be expected within the framework of the national accounts (Figure 10). There are a number of possible reasons for the remaining discrepancies. Preliminary investigations suggest that the basic price adjustment (taxes less subsidies on products) will have a minimal effect on growth rates in most years but is likely to close the gap between the effect seen in expenditure and output in 2001. It should also be noted that within the published dataset, there are small differences between the GDP figure implied by the output components and the balanced GDP series. This is because the output components are not precisely reconciled with the balanced series. This may lead to differing effects in the different measures. Finally, for 2001, the expenditure components have not yet been balanced through current price input-output balancing. This will take place for *Blue Book* 2003. Past experience indicates that taking on information from the ONS' Annual Business Inquiry can lead to significant changes to components of the expenditure measure.

Figure **10**

The impact on the annual growth rates for the expenditure measure of GDP at market prices and the output measure of GDP at basic prices



Further revisions which will affect GDP growth estimates BB2003

Alongside ACL, there are a number of other changes that are intended to be included in BB2003 (Table 11). New data will be taken on back to 1996. This necessitates the re-balancing of GDP through the Input-Output Supply and Use tables from 1996 to 2000 and, in line with usual *Blue Book* practice, GDP estimates for 2001 will be balanced though the Input-Output Supply and Use tables for the first time.

Table 11 The sources of other revisions which will be introduced alongside annual chain-linking in *Blue Book* 2003

Other changes to GDP	How these changes affect the compilation of national accounts
Rebasing of detailed level volume measures	The use of annually updated weights will be applied from a broadly consistent level across the output and expenditure measures of GDP. Where volume measure are estimated at a more detailed level, 5-yearly updating of weights will still be used (in particular for components of the output measure and trade in goods). Updating the 5-yearly detailed weights from 1995 to 2000 will be carried simultaneously with the introduction of annual chain-linking for *Blue Book* 2003.
Rebasing of Producer Price Indices (PPIs)	PPIs are used to create deflator series in the index of production (a component of the output measure of GDP), trade in goods, changes in inventories and gross fixed capital formation. The detailed PPIs are aggregated up to deflation level for national accounts using industry weight structures updated 5-yearly. For *Blue Book* 2003, 2000 will be used as the latest weights, with 1998 as the link year.
Rebalancing of current price GDP through Input-Output supply use tables from 1996 to 2000	The rebalanced Input-Output Supply Use tables will lead to changes to most GDP components.
Input data revisions for the output measure	There are a number of methodological improvements to inputs, mainly affecting the distribution industries data.
Improved data from 2001 results of the International Trade in Services inquiry (ITIS)	Trade in services (both exports and imports) will take on improved data from the ITIS inquiry, the coverage of which has been substantially expanded from 10,000 to 20,000 companies.
Revisions to expenditure on alcohol	Expenditure on alcohol within Household Final Consumption Expenditure will be taking on new data. This will affect both smuggled alcohol and legal expenditure on alcohol. This will also affect imports of goods, output of distribution industries and mixed income.
Revisions to data for capital consumption.	An improved methodology is being introduced for capital consumption. This will lead to changes to output of public administration and defence, and final expenditure and gross operating surplus of general government and non-profit institutions serving households (NPISH).
Reassessment of deflation	There has been a re-assessment of deflation of household final consumption expenditure and gross fixed capital formation. The former is related to the introduction of data and deflators on the Classification of Individual Consumption by Purpose (COICOP).
Improvements to taxes and subsidies on production.	A revised method for estimating National Non-Domestic Rates will result in changes to general government final consumption expenditure. The treatment of subsidies relating to BSE has also been reviewed.
Wages and salaries data	Latest estimates of wages and salaries supplied by Inland Revenue will be included back to 1998.

Conclusions

The results of test-running the new annual chain-linking systems show that impact on GDP growth in *Blue Book* 2002 as a result of annual chain-linking are no larger than +/–0.2 per cent from 1995 to 2001. The analyses for the expenditure measure indicates a small upward impact on growth in 1995. For 1996 to 1998, the effects of ACL are insignificant on total GDP. There are small upward effects from 1999 to 2001. An analysis of the output components suggest a broadly similar effect.

The analysis using contributions to growth differences demonstrates that for the expenditure measure of GDP, ACL effects are caused predominantly by expenditure on information technology, recreational goods and communication services, investment in machinery and equipment (including computer hardware), trade in electrical machinery and trade in communication and other business services. The analysis demonstrates that negative effects on growth estimates can be attributed to components with rising volumes and falling prices, and positive effects to components with slow-growing or falling volumes and falling prices. The most significant impacts on the annual growth estimates of GDP components are caused by the increasing volumes of high-tech electronic goods where prices of imports have fallen faster than those of exports between 1995 and 2000. They also play a major part in the changes to household expenditure and GFCF. In 2001, trade volumes fell, particularly relating to electronic goods. This leads to a much lower effect from imports, where prices have fallen most sharply. As in earlier years, the effect in imports is largely mirrored in exports of goods and GFCF. However, with no downward shift in household expenditure on electronic equipment in 2001, the upward effect on GDP growth rates is greater.

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The application of annual chain-linking to the Gross National Income system

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Summary

Gross National Income (GNI) is important to UK national accounts users because it measures the total income earned by a country's residents and is useful for international comparisons. Annual chain-linking will be applied to the Gross National Income system with effect from September 2003. This article outlines the complexities encountered under the fixed base system and how the new method of annual chain-linking improves the consistency of calculations. It is important to note that the values shown in this article have been constructed to illustrate the calculations not to estimate the effect of annual chain-linking.

Introduction and Background

Real Gross Domestic Income (RGDI), Gross National Income (GNI) and Gross National Disposable Income (GNDI) are all derived from Gross Domestic Product (GDP). For definitions of these and other terms used in this article, see Box 1.

The construction of RGDI, GNI and GNDI are illustrated here because the calculations of deflated or real GDP in the UK national accounts are changing from September 2003 due to the introduction of annual chain-linking. This has implications for the estimation of GNI, RGDI and GNDI. Annual chain-linking will replace the present fixed base aggregations used to calculate real GDP. Annual chain-linking is a method for aggregating the volume measures which are used to estimate economic growth and is in the process of being implemented in national accounts systems (Tuke and Reed 2001). The application of annual chain-linking methodology to most GDP components is relatively straightforward. The exceptions are components, which are presented as a 'difference series', where the components are additive. For example, this occurs in Changes in Inventories where it is not possible to produce a chained volume measure difference series. As can be seen from Table 2, RGDI, GNI and GNDI are estimated using difference series so this affects these calculations.

RGDI estimates the purchasing power of the total incomes generated by UK residents on domestic territory. As can be seen from Diagram 1 this takes into account the rate at which the prices of exports are traded against prices of imports from the rest of the world (RoW). This is known as the terms of trade effect, which is added to real GDP to obtain RGDI. This is done because it directly affects the income of individuals and their purchasing power. For example, if the price of UK exports fell (relative to the price of imports) more exports will have to be sold by UK residents to obtain the same amount of imports, as a result their purchasing power would go down. Additionally a change in the terms of trade effect results in a divergence between real GDP and RGDI. The difference in this change between GDP and RGDI is sometimes referred to as a "trading gain (or loss)" and is another way of describing the terms of trade effect.

Diagram 1 (see page 43) shows GDP and GDI are identical at current prices. However, they are conceptually different when expressed as volume measures. Real GDP is estimated using separate volume measures of exports and imports. However, RGDI attempts to estimate changes in the purchasing power implied by relative changes in trade prices. In contrast to RGDI real GNI has a broader definition of income. Real GNI includes primary incomes earned by UK residents from abroad and excludes primary income earned in the UK by foreign residents. Hence GNI is important to UK national accounts users because it measures the total income earned by UK residents and can be usefully compared to other countries.

To obtain real GNDI, net current transfers are applied to GNI and again this is shown in Diagram 1. GNDI measures the real disposable income of a country's nationals including transfers as opposed to GDI and GNI, which represent the measures of real income generated by UK residents.

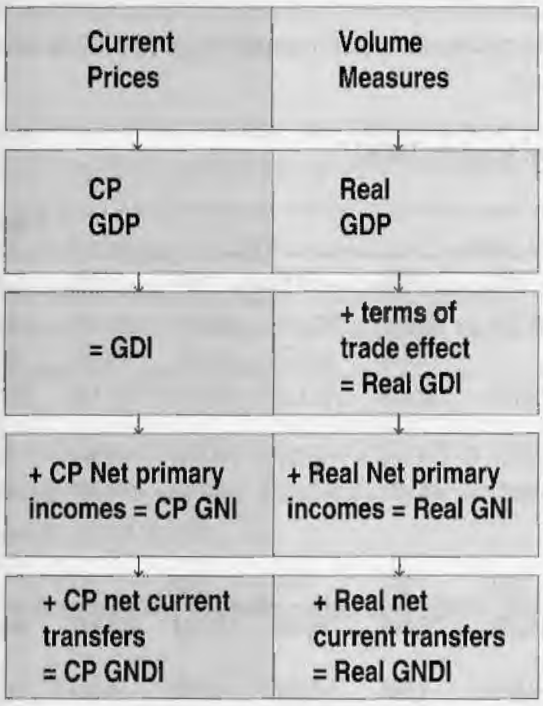
The rest of this article compares the fixed base and annual chain-linking calculations of RGDI, GNI and GNDI, which shows how annual chain-linking method will resolve some of the anomalies. Estimates are only used for demonstration purposes, as comparison of results of the two methods is not part of the scope of this article. It is important to note that the estimates shown in the tables should not be considered as indicative of the figures that will be published in *Blue Book* 2003.

Box 1 Definitions of UK National Accounts Aggregates and Components

Current Prices (CP) (Nominal prices)	These are the current values of goods or services in a given time period.
Constant Prices (KP) (Real Prices)	These are values of goods or services in prices of a given time period so that the changes in volumes can be seen and the effects of price changes are stripped out.
Gross Domestic Product or GDP	Gross Domestic Product (GDP) is an integral part of the UK national accounts and provides an estimate of the total economic activity of UK residents on domestic territory.
Terms of trade effect ("Trading gain or loss")	This is the ratio between the change in the prices for imports and the change in the prices for exports. An increase in the terms of trade implies that the receipts from the same quantity of exports will finance an increased volume of imports (ONS 1998).
Real Gross Domestic Income (RGDI)	This is calculated by adding the terms of trade effect to deflated GDP to estimate the income generated by economic activity adjusted for price changes (ONS 1998).
Gross National Income (GNI) and Net National Income	This measures the total income earned by a country's residents wherever in the world it may originate. For example part of the profits from an UK firm based in the USA will be included in the calculation of National Income rather then that of GDP (ONS 1998). Net National Income deducts the effects of depreciation of the national capital stock.
Real current transfers from the rest of the world	Current transfers are payments or transfers of ownership, which are not made in exchange for any economic activity. For example this includes overseas aid and private gifts (ONS 1998).
Real Gross National Disposable Income (Real GNDI) and Net National Disposable Income	This is the total disposable income of the countries residents. The calculation of this is given in diagram 1. Net National Disposable Income deducts the effects of depreciation of the national capital stock.
Changes in Inventories	A series, which shows the difference between the inventory or stock closing levels and the opening levels. This is a component of the expenditure measure of GDP and is published as a 'difference series'.
Net Primary Incomes	This deducts primary incomes payable to non-resident units plus primary incomes receivable from the rest of the world. Primary incomes include interest, distributed income of corporations, dividends and reinvested earnings on direct foreign investment.
Net Current Transfers	This deducts current transfers abroad from current transfers received from abroad.

Diagram 1 Summary of the calculations used in the UK National Accounts

For both fixed base and annual chain-linking methods the following calculations are used to estimates RGDI, GNI and GNDI:



Fixed base method

The fixed base method is the present approach used to calculate aggregate real GDP. It involves updating a base year used for weights at 5-yearly intervals to give a new structure of weights. A link year is then used to link the current weighted interval with the previous weighted interval. The most recent base year is also used as the reference year. For a more detailed description of the method, see Tuke and Reed (2001).

Table 1 shows the calculation of the terms of trade effect. This calculation is dependent on both export and import deflators. The export deflator is derived by dividing current price exports by real exports. Similarly, the import deflator is derived by dividing current price imports by real imports. The terms of trade effect is derived as the difference from deflating current price exports by the export deflator (real exports) and deflating current price exports by import deflator. All terms of trade effect calculations are expressed in 1995 prices.

Terms of trade effect = (CP export /implied import deflator) 100 – Real export

Although adding or subtracting volume measures with different deflators has theoretical limitations, this method avoids the problem of having to link negative and positive series on different price bases together (Note: the differences in table 1 are due to rounding).

Table 1 Calculation of the Terms of trade effect (fixed base)

United Kingdom **£ million**

ESA95 codes	CDIDs	1986	1987	1988	1989	1990	1991	1992	1993
Current price exports	IKBH	97,679	106,564	107,554	121,609	133,887	135,940	144,091	163,640
Real exports (1995 prices)	IKBK	133,617	141,734	142,596	149,058	157,166	156,961	163,745	170,916
Current price imports	IKBI	100,893	111,449	124,657	142,690	148,257	142,061	151,659	170,125
Real imports (1995 prices)	IKBL	134,297	144,880	163,417	175,558	176,508	168,554	180,012	185,954
Implied imports deflator		75	77	76	81	84	84	84	91
Exports deflated by the imports deflator (1995 prices)		130,019	138,530	140,996	149,621	159,400	161,291	171,029	178,866
TGL Terms of trade	**YBGJ**	**-3,598**	**-3,204**	**-1,600**	**563**	**2,234**	**4,330**	**7,284**	**7,950**

		1994	1995	1996	1997	1998	1999	2000
Current price exports	IKBH	180,508	203,509	223,091	231,622	228,801	236,609	265,135
Real exports (1995 prices)	IKBK	186,655	203,509	220,268	238,492	245,761	258,863	285,124
Current price imports	IKBI	185,255	207,051	227,216	231,436	237,948	252,187	283,623
Real imports (1995 prices)	IKBL	196,526	207,051	226,999	248,969	272,924	296,669	331,396
Implied imports deflator		94	100	100	93	87	85	86
Exports deflated by the imports deflator (1995 prices)		191,490	203,,509	222,878	249,169	262,432	278,343	309,794
TGL Terms of trade	**YBGJ**	**4,835**	**0**	**2,610**	**10,677**	**16,671**	**19,480**	**24,670**

Source: ONS

Table 2 shows the calculation of RGDI using terms of trade, GNI and GNDI from 1994 onwards in the fixed base system. There are small discrepancies between the published figures for GNI and the sum of its components for the years 1997, 1998 and 2000 due to rounding issues.

Table 3 shows how real GNDI is calculated for 1986 to 1994. This is achieved through re-referencing real components from 1995 prices to 1990 prices, aggregating components in 1990 prices, then re-referencing back to 1995 to obtain real GNDI in 1995 prices. For the period shown in Table 3 the link year is 1994.

To illustrate this a re-referencing example for a GNI component in 1986 is as follows:

Real GNI (1990) = Real GNI (1986) / Real GNI (1990) x CP GNI (1990)

A similar procedure is applied to current transfers from RoW as shown in Table 3.

Table 2 National and domestic product (Fixed Base 95 prices), Annual National Accounts Table 1.1.

United Kingdom **£ million**

ESA95 codes		CDIDs	1994	1995	1996	1997	1998	1999	2000
B.1*g	**Gross Domestic Product**	**ABMI**	**698,915**	**719,176**	**738,046**	**763,459**	**785,777**	**804,713**	**829,517**
TGL	Terms of trade	YBGJ	4,835	0	2,610	10,677	16,671	19,480	24,670
GDI	Real Gross Domestic Income	YBGL	703,750	719,176	740,656	774,136	802,448	824,193	854,187
D.1+D.4	Real employment, property and entrepreneurial income from the RoW	YBGI	3,459	2,101	1,170	3,727	11,758	2,327	8,420
–	Subsidies (receipts) *less* taxes	-QZPB	-2,679	-5,220	-5,181	-2,576	-3,082	-4,990	-6,428
D.21+D31	(payments) on production from/to RoW								
+D.29–D.39	Other subsidies on production to/from RoW	-IBJN	287	293	248	198	242	357	353
B.5*g	**Gross National Income**	**YBGM**	**704,817**	**716,350**	**736,893**	**775,486**	**811,362**	**821,887**	**856,529**
D.5,6,7	Real current transfers from RoW (receipts *less* payments)	-YBGP	-2,385	-2,649	-1,848	-3,062	-4,485	-4,069	-5,656
B.6*g	**Gross National Disposable Income**	**YBGO**	**702,432**	**713,701**	**735,045**	**772,424**	**806,877**	**817,818**	**850,873**

Source: UK National Accounts, The Blue Book

Table 3 Re-referencing Real GNDI to 1990 from 1986–1994

United Kingdom **£ million**

	CDIDs	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Real Gross National Income (95 prices)	YBGM	579,949	600,627	635,157	648,297	652,065	647,921	656,292	672,069	704,817	716,350
Current price Gross National Income	ABMZ	380,793	416,656	465,985	509,209	549,183	579,330	606,729	637,626	681,612	716,350
Real Gross National Income (re-ref to 1990 until 1994)		**488,445**	**505,861**	**534,943**	**546,010**	**549,183**	**545,693**	**552,743**	**566,031**	**593,612**	***716,350***
Real current transfers from RoW (receipts *less* payments) (1995 prices)	-YBGP	1,569	480	-463	-340	255	2,555	-1,377	-773	-2,385	-2,649
Current price current transfers from RoW (receipts *less* payments)	-YBGF	1,034	333	-340	-267	215	2,287	-1,275	-734	-2,309	-2,649
Real current transfers (re-ref to 1990 until 1994)		**1,323**	**405**	**-390**	**-287**	**215**	**2,154**	**-1,161**	**-652**	**-2,011**	***-2,649***
Real Gross National Disposable Income (1995 prices)	YBGO	581,522	601,110	634,696	647,959	652,323	650,481	654,916	671,298	702,432	713,701
Current price Gross National Disposable Income	RPMB	381,424	416,989	465,645	508,942	549,398	581,617	605,454	636,892	679,303	713,701
Real Gross National Disposable Income (re-ref to 1990 until 1994)		**489,768**	**506,266**	**534,552**	**545,723**	**549,398**	**547,847**	**551,582**	**565,379**	**591,601**	**713,701**

Source: ONS

Table 4 shows the calculation of RGDI using terms of trade, GNI and GNDI similar to that of Table 2 but using a different time period. GDP, terms of trade and RGDI are all referenced to 1995, however GNI and real current transfers are re-referenced to 1990 before being aggregated to form GNDI. This demonstrates how part of the fixed base method uses re-referencing before carrying out calculations and part of it does not.

Annual Chain-linking method

In annual chain-linking, the base year is updated every year as opposed to the fixed base method where the base year is updated every five years. Calculations are carried in previous years prices (PYP) and the aggregated PYPs chain-linked together to give 'chained volume measures' (CVM). For further information on the construction of PYPs and other such calculations behind annual chain-linking see Tuke and Reed (2001).

All the calculations for RGDI, GNI and GNDI will be carried out consistently in previous years' prices including the terms of trade adjustment applied to GDP.

Table 5 shows how the values in previous year's prices (PYP) for the terms of trade effect are calculated. Real exports are supplied in previous years' prices from the export compilation system. Exports deflated by the implied imports deflator are converted into previous years' prices by referencing each CVM annual value to the previous year. PYP exports (point 2 in Table 5) are then subtracted from PYP

Box 2
Annual Chain-linking terminology

Chained Volume Measures (CVM)	This is the term which will be used to describe components of real GDP and will replace the term constant price (KP) in September 2003 following the introduction of annual chain-linking.
Previous Years' Prices (PYP)	These are values in previous years' prices (and referenced to the previous year) as opposed to values in current or constant prices.

Table 4 UK national and domestic product from 1986 to 1994 with re-referencing to 1990 in parts

£ million

ESA95 codes		CDIDs	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
B.1*g	**Gross Domestic Product (1995 prices)**	**ABMI**	**582,362**	**608,604**	**640,219**	**654,019**	**659,171**	**650,085**	**651,566**	**667,804**	**698,915**	**719,176**
TGL	Terms of trade (1995 prices)	YBGJ	–3,598	–3,204	–1,600	563	2,234	4,330	7,284	7,950	4,835	–
GDI	Real Gross Domestic Income (1995 prices)	YBGL	578,764	605,400	638,619	654,583	661,405	654,415	658,850	675,753	703,750	719,176
D.1+D.4	Real employment, property and entrepreneurial income from the RoW (1995 prices)	YBGI	6,693	1,322	1,026	–1,007	–3,537	–3,696	138	–201	3,459	2,101
–D21+D.31	Subsidies (receipts) *less* taxes (payments) on production from/to RoW (1995 prices)	–QZPB	–5,557	–6,111	–4,506	–5,314	–5,846	–2,848	–2,755	–3,695	–2,679	–5,220
+D.29–D.39	Other subsidies on production to/from RoW (1995 prices)	–IBJN	49	16	18	35	43	50	59	212	287	293
GNI	Gross National Income (ref to 1995)	YBGM	579,949	600,627	635,157	648,297	652,065	647,921	656,292	672,069	704,817	716,350
	Gross National Income (re-ref to 1990 until 1994)		**488,445**	**505,861**	**534,943**	**546,010**	**549,183**	**545,693**	**552,743**	**566,031**	**593,612**	**716,350**
	Real current transfers from RoW (receipts *less* payments) (re-ref to 1990 until 1994)	–YBGP	1,323	405	–390	–287	215	2,154	–1,161	–652	–2,011	2,649
	Gross National Disposable Income (re-ref to 1990 until 1994) from Table 3		**489,768**	**506,266**	**534,552**	**545,723**	**549,398**	**547,847**	**551,582**	**565,379**	**591,601**	**713,701**

Source: ONS

exports deflated by the implied imports deflator (point 7 in Table 5) to give the PYP terms of trade effect (point 8 in Table 5).

Terms of trade effect PYP = Export deflated by implied Import deflator PYP – Export PYP.

Table 6 incorporates the results from Table 5 illustrating the PYPs required for the calculation of GNI.

Table 5 Calculation of the Terms of trade effect (using values in previous years' prices)

United Kingdom							£ million
	1994	1995	1996	1997	1998	1999	2000
1 – Current price exports **(calculated in the export system)**	180,508	203,509	223,091	231,622	228,801	236,609	265,135
2 – PYP Exports (calculated in the export system)	**178,709**	**196,807**	**220,268**	**241,549**	**238,682**	**240,999**	**260,612**
3 – Current price imports	185,255	207,051	227,216	231,436	237,948	252,187	283,623
4 – CVM import	196,526	207,051	226,999	248,969	272,924	296,669	331,396
5 – Implied import deflator **(calc 3 / calc 4)*100**	94	100	100	93	87	85	86
6 – Exports deflated by the imports deflator	1,915	2,035	2,229	2,492	2,624	2,783	3,098
7 – PYP Exports Deflated by Imports Deflator (re-referencing CVM values to previous year)	**175,190**	**191,838**	**222,878**	**249,407**	**243,951**	**242,673**	**263,344**
8 – PYP Terms of Trade (PYP Exports deflated by Imports Deflator minus PYP Exports (calc 7 – calc 2)	**–3,519**	**–4,969**	**2,610**	**7,859**	**5,270**	**1,674**	**2,732**

Source: ONS

Table 6 Calculation of GDI, GNI and GNDI using values in previous years' prices

United Kingdom							£ million
	1994	1995	1996	1997	1998	1999	2000
PYP Gross Domestic Product	672,251	701,078	738,046	788,459	834,777	880,094	930,276
PYP Terms of Trade	–3,519	–4,969	2,610	7,859	5,270	1,674	2,732
PYP Real Gross Domestic Income	668,732	696,109	740,656	796,318	840,047	881,768	933,008
PYP Real employment, property and entrepreneurial income from the RoW	3,287	2,034	1,170	3,835	12,323	2,485	9,176
PYP Subsidies (receipts) *less* taxes (payments) on production from/to RoW	–3,426	–6,525	–5,181	– 2,059	–3,363	–5,963	–3,302
PYP Other subsidies on production to/from RoW	291	292	248	202	252	363	306
PYP Gross National Income	**668,884**	**691,910**	**736,893**	**798,296**	**849,259**	**878,653**	**939,188**
PYP Real Current transfers from RoW (receipts less payments)	–2,265	–2,565	–1,848	–3,151	–4,700	–4,346	–6,165
PYP Gross National Disposable Income	**666,619**	**689,345**	**735,045**	**795,145**	**844,559**	**874,307**	**933,023**

Source: ONS

Table 7 UK national and domestic product following the introduction of annual chain-linking

United Kingdom **£ million**

ESA95 codes		CDIDs	1994	1995	1996	1997	1998	1999	2000
B.1*g	**CVM Gross Domestic Product**	**ABMI**	**800778**	**823,992**	**845,613**	**874,729**	**900,300**	**921,996**	**950,415**
TGL	"CVM" terms of trade = CVM GDI – CVM GDP	YBGJ	–13,860	–20,001	–17,608	–9,678	–4,340	–2,699	0
GDI	CVM Real gross domestic income	YBGL	786,919	803,991	828,004	865,052	895,960	919,297	950,415
D.1+D.4	CVM Real employment, property and entrepreneurial income from the RoW	YBGI	3,825	2,324	1,294	4,122	13,004	2,574	9,312
–D.21+D31	CVM Subsidies (receipts) *less* taxes (payments) on production from/to RoW	–QZPB	–1,697	–3,307	–3,282	–1,632	–1,952	–3,161	–4,072
+D.29–D.39	CVM Other subsidies on production to/from RoW	–IBJN	237	242	205	164	200	295	292
B.5*g	**CVM Gross National Income**	YBGM	791,595	803,553	826,597	868,786	908,238	918,850	955,947
D.5,6,7	CVM Real current transfers from RoW (receipts *less* payments)	–YBGP	–2,638	–2,930	–2,044	–3,387	–4,961	–4,501	–6,256
B.6*g	**CVM Gross National Disposable Income**	YBGO	788,978	800,641	824,585	865,417	903,277	914,354	949,691

Source: ONS

Table 7 shows how Table 1.1 in the *Blue Book* might look after the introduction of chain-linking where all components and aggregates have been chain-linked.

Although the PYP for the terms of trade effect can be found, it cannot be chained as an aggregate. The reason for this is similar to that of the fixed base method, linking negative and positive data together is problematic. A representation of terms of trade as a chained volume measure is therefore calculated by subtracting GDP (CVM) from GDI (CVM). It is important to note that the values shown in Table 7 have been constructed to illustrate the calculations not to estimate the effect of annual chain-linking.

Conclusion

GNI is important to UK national accounts users because it measures the income earned by a country's residents and it enables international comparisons. There were difficulties encountered calculating the terms of trade effect in the present fixed base system. Although adding or subtracting volume measures with different deflators has theoretical limitations, the fixed base method has the advantage of avoiding the problem of having to link negative and positive series of different price bases together. Annual chain-linking approaches this problem found in the terms of trade effect by directly subtracting the chained volume measure of GDP from the chained volume measure of RGDI. The result of this new system will be to improve the consistency of calculations for the GNI system overall.

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Interpreting Retail Sales Data

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Summary

- The Retail Sales Index (RSI) is a base-weighted index measuring monthly movements in the average weekly retail turnover of retailers in Great Britain.
- Headline data are presented in constant prices (volume) seasonally adjusted. The seasonally adjusted series are also adjusted for calendar effects.
- Three monthly growth rates provide an adequately timely and not excessively volatile assessment of growth. Monthly growth rates can be volatile, and so can be difficult to interpret.
- The RSI is currently being rebased onto 2000=100. This process is likely to lead to revisions from January 2000. We expect to introduce the rebased series in October 2003.
- The Retail Sales Inquiry (the survey on which the Retail Sales Index is based) is currently subject to a Triennial Review; a process to provide assurance that the survey outputs still meet users needs. This review may lead to recommendations for change in the processes and methods used to produce the Retail Sales Index; any recommendations for change will be considered for implementation for October 2003 at the earliest.

Introduction

This article describes the main data sources and current practices used to produce the monthly Retail Sales Index (RSI). It also gives a guide on interpretation of the RSI, including comparisons with other data sources. The final section describes plans to rebase the RSI onto 2000=100 and also describes the Triennial Review of user need from the RSI. The article is in 7 parts:

Part 1 – Overview of the RSI

The Retail Sales Index (RSI) measures monthly movements in the average weekly retail turnover of retailers in Great Britain. It is compiled from data collected in the Retail Sales Inquiry; the inquiry goes out to a sample of approximately 5,000 retailers of all sizes every month. All of the largest 900 retailers are included in the sample, together with a sample of smaller retailers.

The Retail Sales Inquiry collects total retail turnover from retailers for standard periods of four, four, five weeks within each quarter; this is the same basis that the majority of retailers use for their accounting systems. Around three-quarters of respondents provide data for standard reporting periods. Some retailers are unable to report on the standard four or five week basis. Where this is the case, the data is adjusted to bring it into line.

The total retail turnover reported by each inquiry respondent is divided by 4 or 5 to produce the respondent's weekly average turnover for each standard period. This weekly average of sales is the basic building block in constructing the index. The total value of sales is calculated for industry groups and for all retailers; these estimates are expressed in base-weighted index form. The data are also deflated and seasonally adjusted.

Published data for all retailers, and for the six main aggregates, is presented as value not seasonally adjusted, value seasonally adjusted, volume not seasonally adjusted, and volume seasonally adjusted. The Retail Sales First Release concentrates on movements in the volume seasonally adjusted and value not seasonally adjusted estimates. A description of the process to produce the volume index is provided in part 3.

Part 2 – The Retail Sales Inquiry

The monthly Retail Sales Inquiry commenced in 1954. It was a voluntary inquiry until 1992, when it became statutory as part of a programme of measures to improve economic statistics. At the same time, the sample size was increased from 3,000 to 5,000 and the sample design was updated.

The monthly inquiry is a sample survey addressed to approximately 5,000 retail businesses in Great Britain. Retailers are stratified by 'type of store' and by employment size. Four employment size-bands are defined: employment greater than or equal to 100; employment of at least 20 and less than 100; employment of at least 10 and less than 20; employment less than 10. All 900 or so retailers with employment of at least 100 are selected. A random sample of retailers is selected from each of the three smaller size-bands: around 1 in 5 retailers from the 20 to 99 size-band; around 1 in 18 from the 10 to 19 size-band; and around 1 in 70 from the 0 to 9 size-band. The largest businesses (100+ employment) represent 69 per cent of the total turnover.

All retailers selected for the inquiry are asked for estimates of total retail turnover (including sales from stores, e-commerce (including Internet), mail order, stalls and markets, door to door and telephone sales). Retail turnover is the value of sales of goods to the general public for personal or household use.

Estimates are produced for each type of store by size-band 'cell'. These detailed estimates are aggregated to produce estimates of average weekly sales for the 22 individual industries, the main industry aggregates and for retailing as a whole.

Part 3 – Index Construction and Deflation

Index construction

The RSI is a base-weighted (Laspeyres) index. Estimates of average weekly turnover are converted to index form by comparing with the appropriate average weekly turnover in the base year (currently 1995).

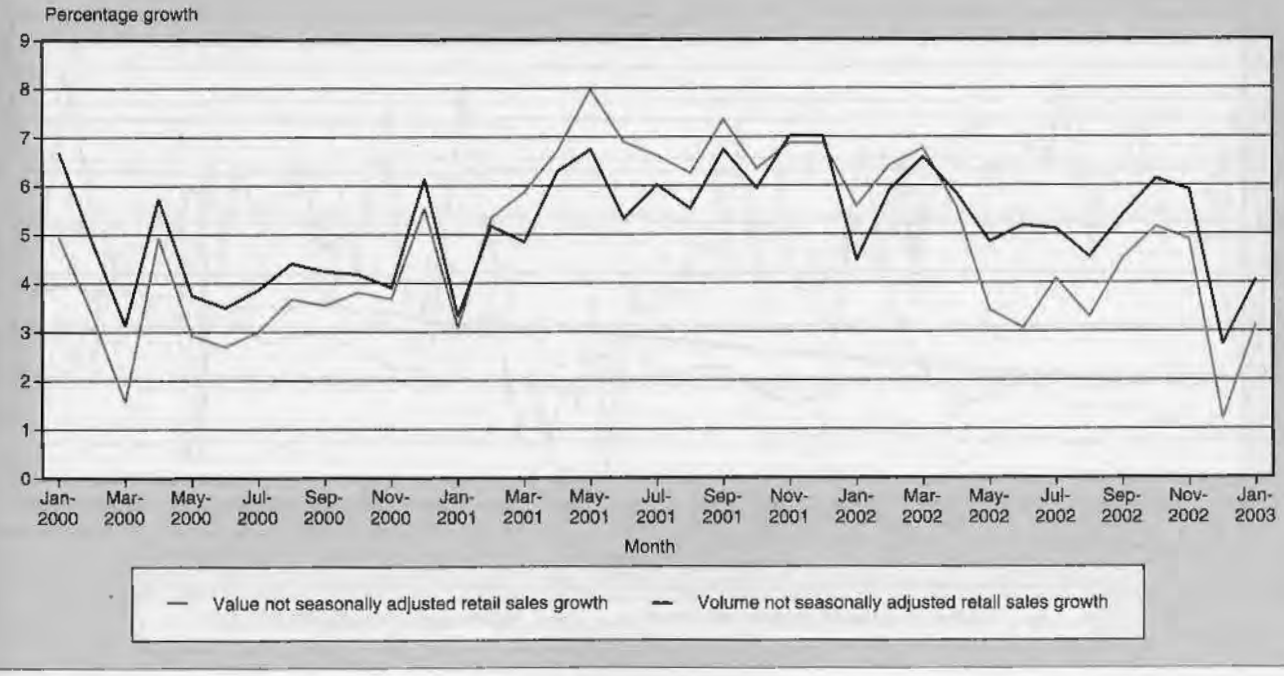
Deflation

The value indices show the pattern of average weekly sales in current prices (the actual value of money 'through the till'). There is also interest in the pattern of sales after allowing for the effect of price changes.

The value estimates are converted into constant price or volume estimates by using information from the Retail Prices Index (RPI). The approach taken involves weighting together detailed commodity

Figure **1**

RSI all retailing, value and volume, not seasonally adjusted percentage growth month on the same month a year earlier



RPIs to produce deflators at the detailed industry level. The weights are derived from information on the breakdown of sales by commodity derived from the Annual Retail Inquiry in the base year (currently 1995). These deflators are then applied to the value data to produce volume estimates; industry aggregates are derived by summing the appropriate volume data and the index numbers are derived by dividing by average weekly turnover in the base year.

The deflators used in the RSI are not published but some information on the implied deflators can be derived from published data by comparing the volume and value data.

Figure 1 compares annual growth rates in the value and volume series (not seasonally adjusted). The value and volume series show similar patterns of movement, although the volume series is at a slightly lower level than the value series when prices are rising.

Part 4 – Seasonal and Calendar Adjustment

Figure 2 below illustrates the profound seasonality exhibited by retail sales each year. Sales build up heavily towards Christmas and then fall away very sharply in January. There is a modest build up in the summer and fallback in the autumn. Sometimes there is a more modest build up to Easter and fall back afterwards. However, while the broad sweep of these patterns are similar from year to year, many complications can occur that distort the seasonal patterns. Examples of these complications, and the processes for dealing with them, are described below under calendar adjustment.

The RSI is seasonally adjusted using X11ARIMA, the standard program for seasonal adjustment, and follows best practice guidelines for dealing with routine features of the data. There are also special measures in place to deal with particular issues: the phase-shift effect and moving holidays. The process that deals with these special measures is known as calendar adjustment and is applied within X11ARIMA (as permanent prior adjustment factors).

Calendar adjustment

Calendar adjustment takes account of two effects in the data:

- Moving bank holidays;
- The phase-shift effect.

Moving bank holidays

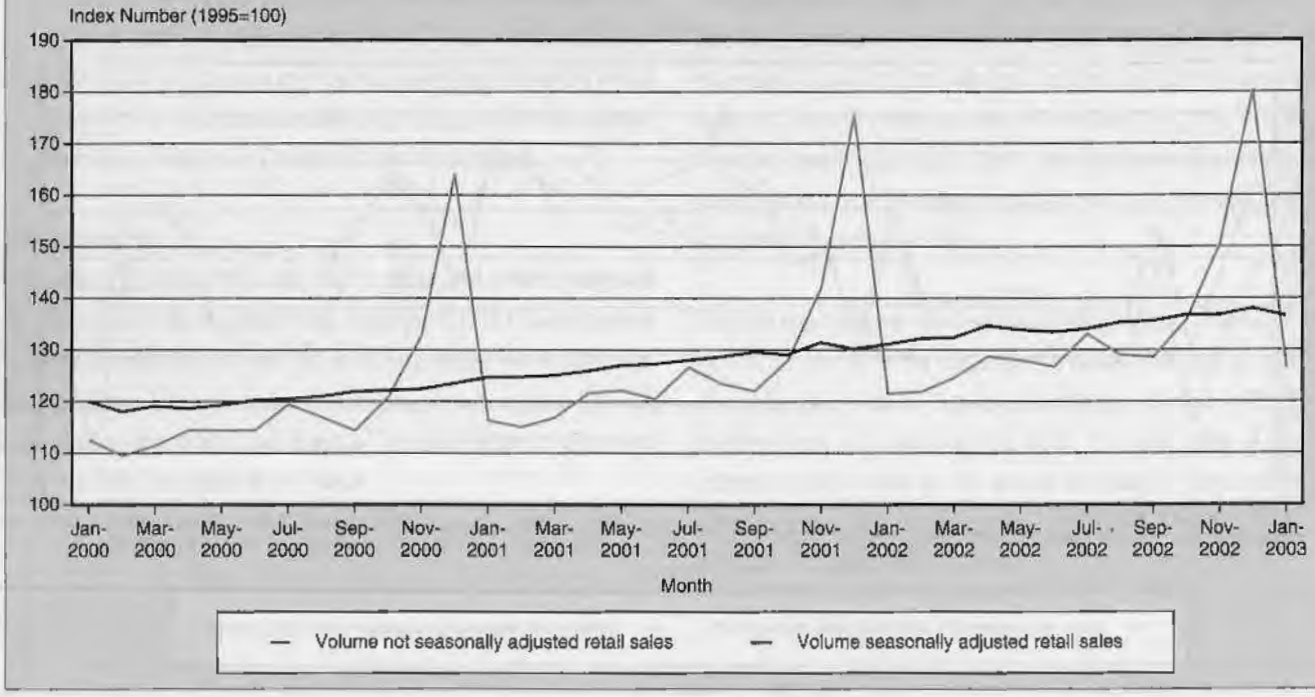
At the same time as adjustments are made to deal with the phase-shift effect, adjustments are also made for moving public holidays. When working with calendar month based data, the only holiday that moves between months is Easter. However, when data is compiled on a four, four, five basis the late May Bank Holiday and the August Bank Holiday also become moving holidays, since they do not always occur in the same standard RSI period.

The phase-shift effect

The RSI is presented as an index of average weekly sales for four, four, five week standard periods within a quarter. Data presented on these standard periods are not subject to trading day variation (for

Figure 2

RSI all retailing, volume, seasonally adjusted and not seasonally adjusted



example, in a calendar month there are sometimes four Saturdays and sometimes five). However, the standard periods do introduce a 'phase-shift' effect, associated with the fact that the standard periods do not match calendar months and move slightly each year relative to the calendar month. In a typical year, the standard periods total 52 weeks or 364 days compared to 365 (366 in a leap year) in a calendar year. As a result, the standard periods 'slip back' one (or two) days every year. The reporting year is brought back into line with the calendar year by adding an extra week, normally to January, every five or six years. Adjusting for the phase-shift moves the estimate based on the standard period onto an 'average' month.

Figure 3 illustrates how the December standard period moves relative to the calendar month. Note that the December standard period is always five weeks long, so it is always longer than the calendar month, and that the December reporting period sometimes ends in December and sometimes in January.

The impact of calendar adjustment

Calendar adjustment has a large impact in months such as December, where retail sales in the first and last weeks of the standard period are considerably different. The greatest effect on annual growth rates is observed in years with a five week January. In these years standard periods fall as late as possible and are compared with months (in the previous year) when standard periods fall as early as possible.

Figure 4 presents a time series of annual growth rates before and after calendar adjustment. The two months, December 1996 and December 2002, where calendar adjustment has the greatest impact are highlighted. Calendar adjustment for December 2002 is explained in more detail below.

An example of calendar adjustment

The December 2002 sales period (1 December 2002 to 4 January 2003) started and finished 6 days later than the corresponding period for December 2001. Although retail sales in January are boosted by

Figure 3

Movement of the standard reporting period for December, relative to the December calendar month, 1986–2002

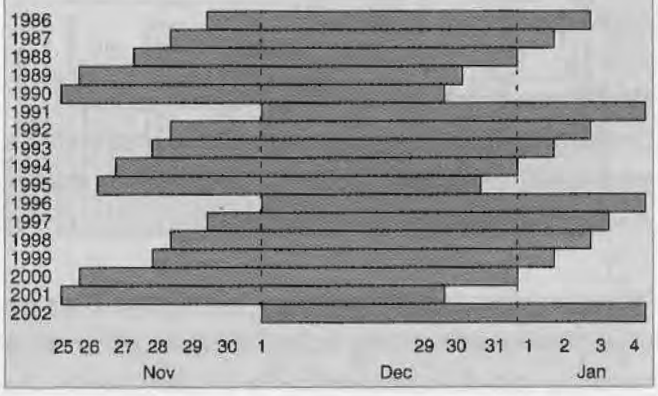
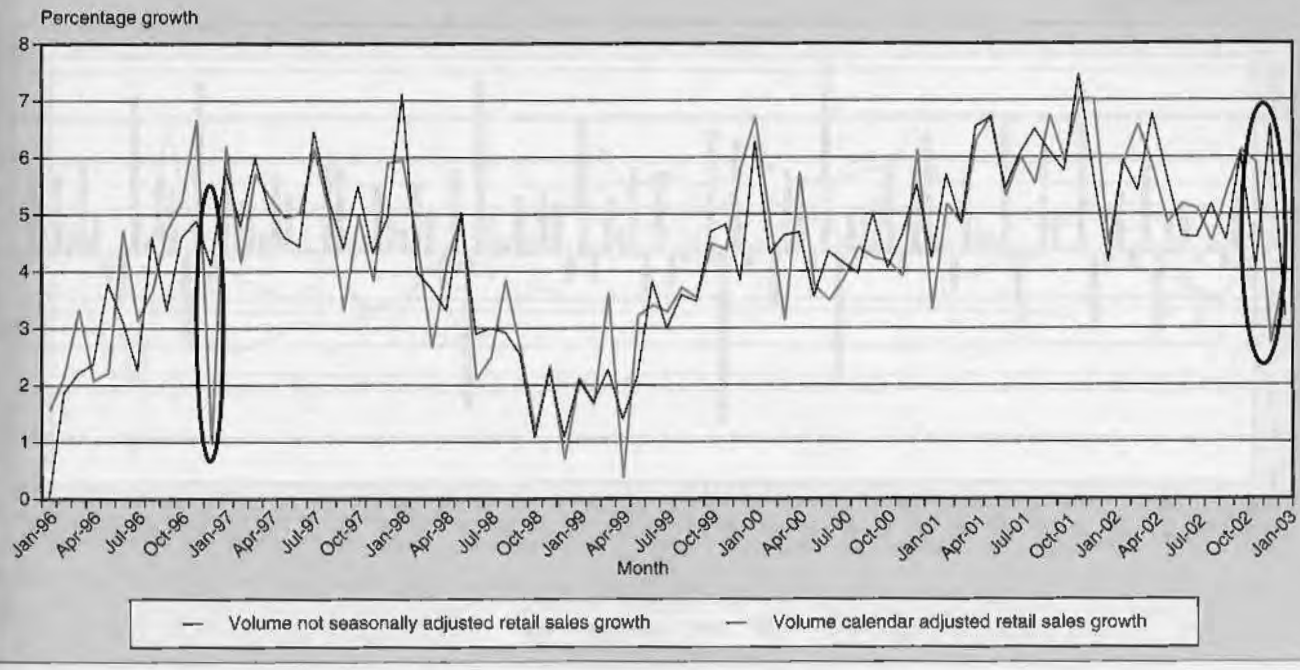


Figure 4

RSI all retailing, not seasonally adjusted and calendar adjusted volume percentage growth month on the same month a year earlier



the January sales, they are typically lower than average weekly sales in the run up to Christmas. In not seasonally adjusted terms, annual growth in December 2002 was +2.7 per cent. To produce average sales for a typical week in December 2002, the calendar adjustment process added 3.9 percentage points to annual growth. After calendar adjustment (but before seasonal adjustment) the annual growth was therefore +6.6 per cent; this is our best estimate of the growth we would have observed if we had been able to collect retail turnover for average Decembers in both years.

Part 5 – Interpreting Growth Rates

In general, any discussion of retail sales tends to be based on growths derived from the volume measure seasonally adjusted, unless otherwise specified. A number of growth measures are derived from the RSI: three months on previous three months; three months on the same three months a year ago; month on previous month and month on same month a year ago.

Monthly movements and the interpretation of growth

Discussion of retail sales figures often focuses on whether there is evidence of sales growth slowing. Figure 5 shows monthly movements of the retail sales index since 1995.

When interpreting a monthly measure such as retail sales, a measure of growth is needed that is not excessively volatile, yet provides a reasonably up-to-date assessment of what is actually going on. The historical volatility of monthly growth rates in Figure 5 suggests that they do not provide such a guide. Over the end of 2002, for instance, the index grew rapidly in October, was flat in November, grew rapidly in December and fell sharply in January 2003.

The growth measure in Figure 6 is seen to be reasonably smooth suggesting that successive readings from this measure offer a reasonable guide to the behaviour of retail sales. Again, to take the recent period as an example, the three months on previous three months growth rates were strong during 2001 and 2002, except for those months affected by the Queen's Golden Jubilee.

As the month on month growth rate can be volatile, ONS briefing usually concentrates on the three months on previous three months measure.

Revisions to growth rates

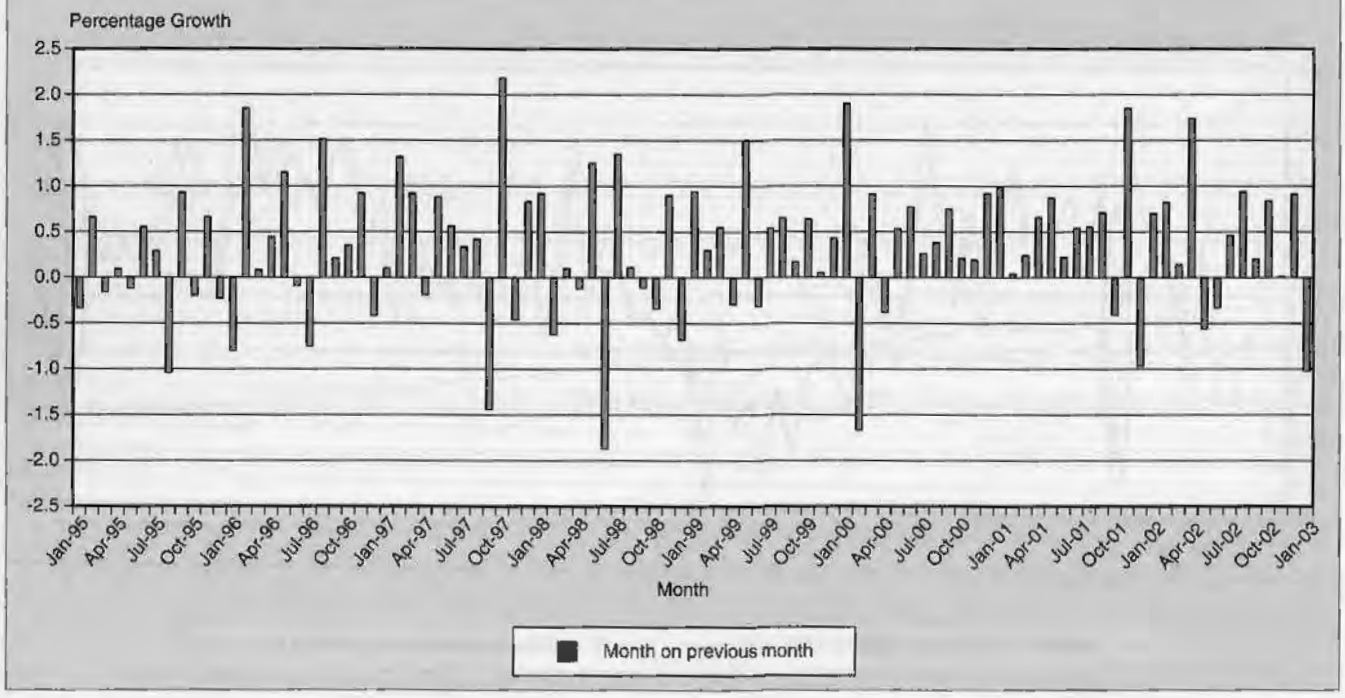
First estimates of retail sales growth can be revised in later months. There are two main sources of revision to the series:

- late returns from retailers;
- reassessment of seasonal adjustment.

First estimates are based on returns from at least 60 per cent of retailers selected for the sample; these respondents account for over 90 per cent of selected turnover. The RSI revisions policy takes account of inquiry returns received up to two months after the end of the month. Final results, produced two months later, are typically based on responses from around 80 per cent of sample members.

Figure 5

RSI all retailing, volume, seasonally adjusted percentage growth month on previous month



The policy of current updating of seasonal adjustment factors can lead to revisions to past months even when unadjusted estimates are not changed. The policy is to revise seasonal factors for the current month, the previous two months and the current month one year earlier.

Part 6 – Comparisons with Other Data

Analysts often compare the RSI with two external indicators:

- the British Retail Consortium (BRC) Sales Monitor;
- the Confederation of British Industry (CBI) Distributive Trades Survey.

Figure **6**

RSI all retailing, volume, seasonally adjusted percentage growth, 3 months on previous 3 months

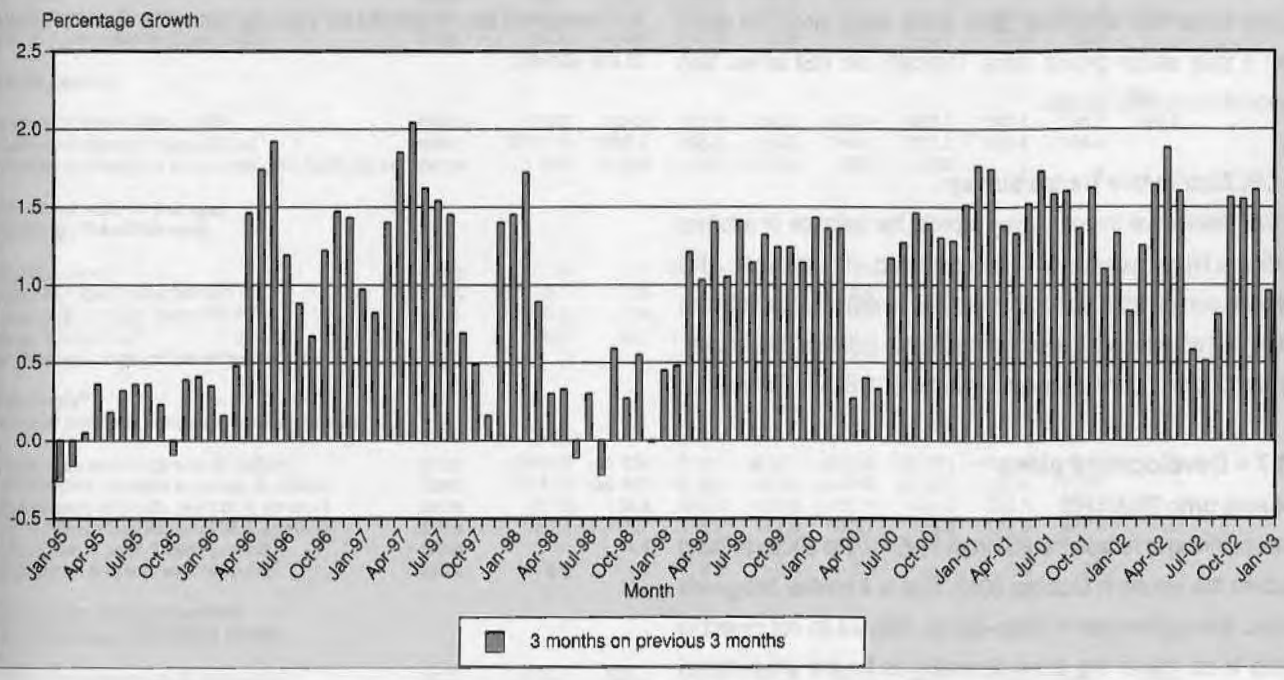
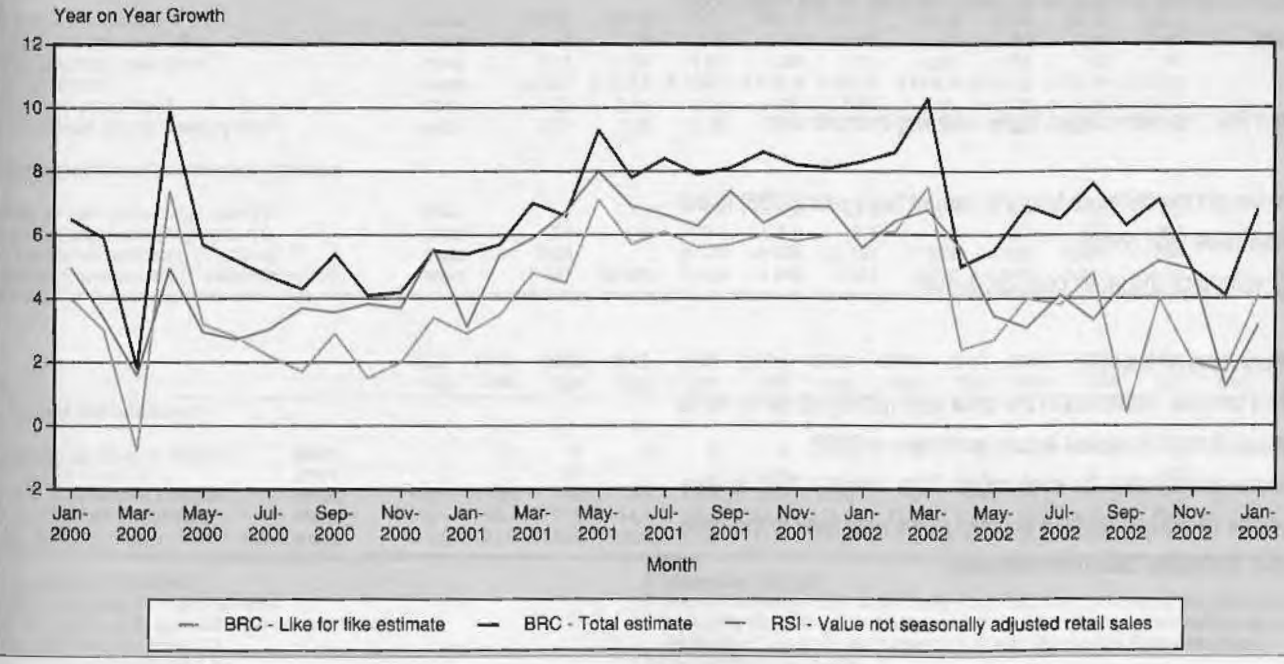


Figure **7**

RSI (all retailing, value, not seasonally adjusted) and BRC (total and like-for-like percentage growth month on the same month a year earlier



Comparisons between RSI and BRC

The BRC measure the value of sales based on data provided by 80 or so of the largest retailers (compared with a sample size of approximately 5,000 for the RSI). They ask retailers for total and like-for-like retail sales. Note that the BRC estimates are usually based on the same four, four, five reporting periods as used in the RSI, although the BRC used slightly different reporting periods in December 2002 and January 2003. The BRC do not deflate or seasonally (or calendar) adjust their estimates and present their results as the growth between the latest month and the same month a year earlier. Figure 7 compares the RSI value not seasonally adjusted series with BRC data. Both series show month on same month a year earlier growth rates. Typically the RSI series falls between the two BRC series.

The CBI Distributive Trades Survey

The CBI distributive trades survey reports the balance of retailers reporting a higher volume of sales compared with last year. This qualitative survey asks up to 200 retailers whether sales volumes were higher or lower compared with the same month a year earlier. It is very difficult to draw comparisons between CBI and RSI results.

Part 7 – Development plans

Rebasing onto 2000=100

We are planning to rebase the RSI from 1995=100 to 2000=100 and to publish the results in October 2003. This is a routine five-yearly process. Although we aim to chain-link the RSI, we do not expect to be able to do this to the same timetable as for the UK National Accounts (the plan is to publish chain-linked National Accounts in *Blue Book* 2003). However, when National Accounts chain-linking is introduced, the National Accounts will be chain-linked up to 2000, and will be on a 2000=100 base for the period from 2000. The National Accounts and RSI will thus be on the same basis for the most recent periods.

For the RSI, the main stages in the rebasing exercise are:

- re-weight the deflators from the current base year (1995) to the new base year (2000);
- re-reference the index onto 2000=100.

As in previous rebasings:

- RSI turnover estimates in the base year (2000) will be re-set to equal Annual Business Inquiry estimates in 2000;
- turnover estimates for each month from January 2000 to date will be re-worked (to take account of the new level in the base year and latest data from retailers).

Review of the Retail Sales Inquiry

We are carrying out a Triennial Review of the Retail Sales Inquiry (the inquiry which underlies the Retail Sales Index) as required under the Prime Minister's instruction on the control of statistical surveys. These three yearly reviews of surveys are to provide assurance that the surveys are still required, that they continue to meet their user needs and impose the minimum burden on contributors subject to meeting user needs.

This review might lead to recommendations for change in the design and implementation of the Retail Sales Inquiry. Any recommendations for change will be considered for implementation for October 2003 at the earliest.