



# **Economic Trends**

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**London: TSO** 

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## In Brief

## **Articles**

This month we feature three articles.

Jane Morgan of the ONS gives an account of expenditure on Research and Development (R&D) statistics up to and including 2001. These statistics are consistent with the OECD's Frascati Manual that defines Research and Experimental Development. R&D is defined as creative work undertaken systematically to increase the stock of knowledge and the use of this knowledge to devise new applications. Performers and funders of Research and Development are divided into four economic sectors, which are defined: Government, Business, Higher Education Institutions and the Private Non-Profit sector.

David Ruffles, Geoff Tily and David Caplan of the ONS and Sandra Tudor of HM Customs & Excise discuss VAT missing trader intra-community fraud: the effect on Balance of Payments statistics and UK National Accounts. The 'carousel' version of the fraud occurs when goods that have been imported into the UK are sold through a series of transactions before being re-exported to another EU Member State. They may then be re-imported back into the UK. The fraud impacts on intra-EU trade statistics as these are collected via the VAT system. Whilst 'carousel' transactions are captured in export data, the acquisition of the goods in MTIC frauds is not included in import data. Imports are, therefore, under-recorded. The purpose of this article is to explain how the fraud causes the trade deficit to be understated, how the Office for National Statistics has made the revisions, and what their impact is on the UK National Accounts and EU asymmetries.

Louise Morris and Jon Gough of the ONS introduce a new method to calculate index weights for the Producer Price Indices. The Producer Price Index (PPI) is currently being rebased and a review of certain methodological aspects has been undertaken. This includes the approach to the calculation of index weights and the adoption of a more sophisticated method to estimate sales to the domestic market, used to weight detailed PPI series to produce indices at a more aggregate level. Introducing this new method of determining weights will only lead to small differences in index values at the aggregate level with larger differences confined to more detailed indices. The rebased results are to be published in October 2003.

## Recent economic publications

### Annual

Share Ownership 2002. Available for downloading from the National Statistics website www.statistics.gov.uk/products/p930.asp

### Quarterly

Consumer Trends; 2003 quarter 1. Available for downloading from the National Statistics website www.statistics.gov.uk/products/p242.asp

United Kingdom Economic Accounts: 2003 quarter 1. TSO, ISBN 0 11 621639 5. Price £26. Also available for downloading from the National Statistics website www.statistics.gov.uk/products/p1904.asp

UK Trade in Goods analysed in terms of industries (MQ10): 2003 quarter 1. Available for downloading from the National Statistics website www.statistics.gov.uk/products/p731.asp

### Monthly

Financial Statistics: July 2003. TSO, ISBN 0 11 621598 4. Price £23.50.

Focus on Consumer Price Indices: June 2003. Available for downloading from the National Statistics website

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

Monthly Review of External Trade Statistics (MM24): June 2003 (published 14 August). Available for downloading from the National Statistics website www.statistics.gov.uk/products/p613.asp

TSO publications are available by telephoning 0870 600 5522, fax 0870 600 5533 or online at www.tso.co.uk/bookshop

## **Economic Update - August 2003**

## Michael Wycherley, Macroeconomic Assessment - Office for National Statistics

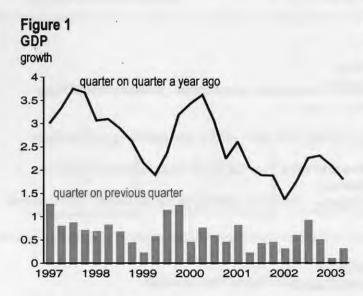
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## Overview

GDP growth recovered only slightly in the second quarter of 2003 after the weak first quarter and external indices of output are showing little sign of a strong recovery. Retail sales picked up in the second quarter, particularly in June. Private investment demand seemed to stabilise during 2002 but shows little sign of recovering. While the financial position of the corporate sector has improved, the level of indebtedness is still high. Government spending is currently a significant contributor to economic growth but the public sector finances are falling further into deficit. Export performance has fallen back after the improvement at the start of 2003. Overall labour market aggregates remain fairly stable, and private sector wage pressures are minimal. Producer prices have fallen back as the oil price has peaked. The RPIX measure of inflation remains above target but is gradually falling.

## GDP activity - overview

The preliminary estimate of Gross Domestic Product (GDP) shows growth of 0.3 percent in the second quarter of 2003. This is slightly faster than the 0.1 per cent recorded in the first quarter of 2003 but is significantly below the last three quarters of 2002 (figure 1). The annual rate of growth in the second quarter, at 1.8 per cent, is the lowest for a year. Prior to this the Bank of England cut base rates from 3.75 per cent to 3.50 per cent in July.

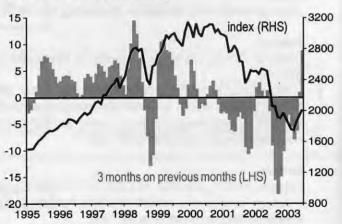


Overall, movements in the UK economy are similar to those around the world. The recovery in the main industrial economies in early 2002 lost momentum in the second half of the year and has been weak since then, even going into reverse in some countries. Much of the recovery was export led, and exports have subsequently fallen back with domestic activity also slowing. The emerging picture for the second quarter of 2003 is generally of a limited recovery from the weakness in the first quarter.

## Financial Market activity

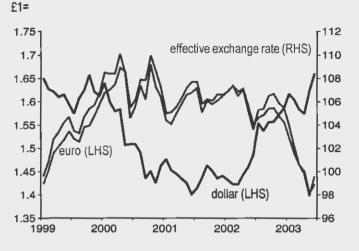
The start of 2003 generally saw substantial declines in world stock markets, which, since April, have reversed themselves and most are now up significantly for the year to date. For instance the UK FTSE all share index declined by 8.0 per cent between December 2002 and March 2003 but between March and June rose by 15.0 per cent. The March 2003 level represented a fall of 44.5 per cent since the peak in December 1999 (figure 2). Other financial markets have also been volatile, with the bond market in particular showing large fluctuations.

Figure 2 FTSE - all share price index



It is the currency market though that has seen possibly the most significant price movements in recent months. The start of 2003 saw sterling depreciate against the euro and strengthen against the dollar, with the effective exchange rate falling 7.2 per cent between December 2002 and May 2003. June 2003 saw an appreciation of sterling against the euro and the dollar, and a corresponding rise in the effective exchange rate, although this remains down on the year, falling again in July after the Bank of England cut base rates (Figure 3).

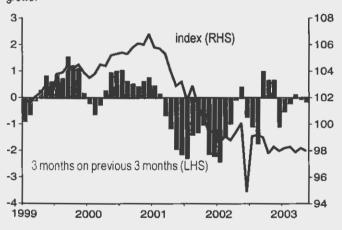
Figure 3
Exchange rates



## Output

Preliminary figures extend only to the first two months of thesecond quarter, and indicate that manufacturing production fell by 0.1 per cent in the three months to May. Manufacturing output in May was 2.1 per cent lower than a year before, although it has now been broadly flat since October 2002, and may be stabilising (figure 4).

Figure 4 Index of manufacturing growth



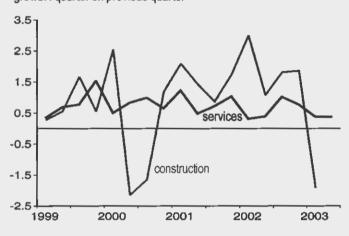
External surveys are not consistent with this picture, although they still indicate some decline in output and remain below the level of 2002 (figure 6).

The source of the weakness in manufacturing since early 2000 has been the fall in ICT industries. This decline slowed during 2002, output rose between November 2002 and January 2003 and since then has been broadly flat. In the latest three months output in the durable goods industries rose 0.1 per cent, with an increase in the output of cars offsetting declines elsewhere. Output in both the non-durable and the intermediate goods

industries fell by 0.7 per cent in the latest three months, however output in the investment goods industries rose by 0.7 per cent over the last three months. This provides some evidence that the investment decline of the past couple of years may now have run its course.

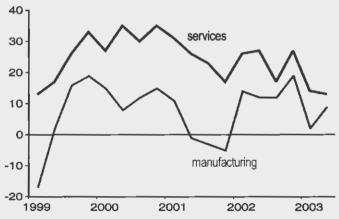
In contrast, recent figures have raised the possibility that construction activity has now peaked. Construction has been a considerable support to the economy over the last year or so. Last year, it rose by 7.5 per cent following on from 3.6 per cent in 2001. The picture so far this year however is somewhat different. In the first quarter output in this sector fell by almost 2 per cent (figure 5), leaving activity up only 2.8 percent when compared with twelve months ago. Early indictions are that the second quarter will see a small rise in construction output compared with the first quarter. External surveys did not pick up the slowdown in the first quarter, and continue to show positive growth in the second quarter, although lower than in 2002.

Figure 5
Construction & Services output
growth: quarter on previous quarter



Output in the service sector picked up in the second half of 2002 and since then has slowed. The last two quarters have seen growth of 0.4 per cent, similar to the level in the first half of 2002 and down on the growth of 0.8 per cent in the last quarter of 2002 (figure 5).

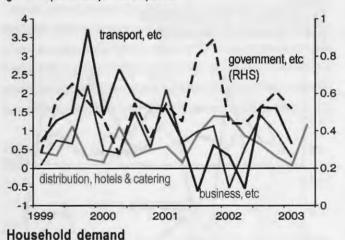
Figure 6 BCC services / manufacturing growth



The strength in the second half of 2002 means that annual growth has remained at around the current level of 2.6 per cent since the end of 2001, which is significantly down on the level of around 3.5 per cent in the previous two year. External surveys indicate little change in the second quarter (figure 6).

A broad industrial breakdown shows that in 2001 there was a shift in the drivers of growth from 'business services and finance' and 'transport, storage and communications' to 'distribution, hotels and catering, and repairs' and 'government and other services'. In the last quarter of 2002 and the first quarter of 2003 the general slowdown in the service sector has been due to lower growth in all service industries (figure 7).

Figure 7
Services industries
growth: quarter on previous quarter

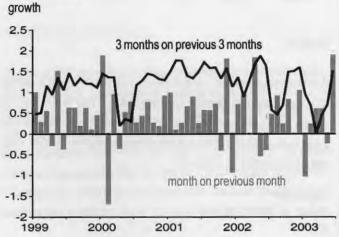


National Accounts figures for the first quarter of 2003 show a slowdown in consumer spending growth to only 0.2 per cent when compared with the previous quarter and 3.1 per cent on a year ago. This is an abrupt deceleration from 2002, which saw fourth quarter growth of 1.0% and 3.7% for last year as a whole. The question now is whether this is just a temporary downward movement or the start of a long-term adjustment in consumer spending.

Retail sales data for the second quarter suggests a recovery in consumer spending, due at least partly to very strong sales in June. The second quarter saw retail sales growth of 1.6 per cent following a flat first quarter. However this was dominated by a fall of 1.0 per cent in January, which was affected by seasonal adjustment issues, and a rise of 1.9 per cent in June, due at least partly to hot weather. Until June the pace of growth had clearly slowed from last year, when the annual rate of growth for December was 6 per cent but could still fairly be described as moderate rather than weak (figure 8). Whether June marks a return to strong growth or merely represents consumers adjusting to the warm weather is yet to be seen.

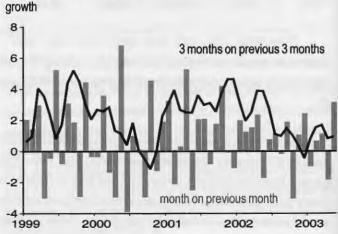
Support for the idea that consumer spending is not going to grow as quickly as it did in the past couple of years is provided by the consumer confidence figures. These fell sharply in the first quarter before recovering slightly in the second quarter. Care has to be used in analysing these, as there seems to be a pronounced war effect upon confidence but overall the message seems to be that while confidence is higher than the first quarter it is still below that of 2002. Other external figures such as the CBI and British Retail Consortium (BRC) surveys show a similar picture of a strengthening in the second quarter, but with activity generally below 2002 levels.

Figure 8 Retail Sales



The prolonged period of high growth in consumer demand has been underpinned by growth in consumer debt. Gross consumer credit grew very rapidly in early 2002 before slowing from October. While annual growth has slowed from the double digit levels of earlier, growth in the twelve months to May remains high at 5.8 per cent, and monthly figures show no sign of slowing further (figure 9).

Figure 9 Gross Consumer Credit

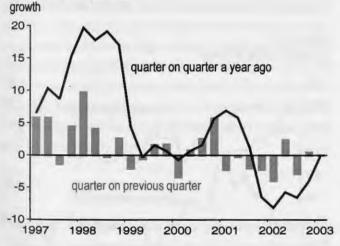


Mortgage equity withdrawal remains at historic highs compared to income even though annual house price inflation has slowed to under 20 per cent. House price rises appear to be slowing rather than reversing, with substantial regional variations becoming apparent. Debt to income ratios continue to reach new heights and household demand is at least partly dependent on banks and building societies' willingness to lend. This is seen as unlikely to be a major problem as long as debt servicing costs remain affordable, which is likely to be the case as long as interest rates and unemployment remain low.

## **Business demand**

Much of the weakness in investment over the last few years has been due to business investment, which fell sharply during 2001 before seeming to have stabilised in 2002. The first quarter of 2003 saw fixed investment flat both compared with the last quarter of 2002 and with the same quarter a year ago (Figure 10). The first quarter of 2003 is the first one without an annual decline since the third quarter of 2001, suggesting declines may have ceased, although there is still little sign of a rebound in spending.

Figure 10 Business investment

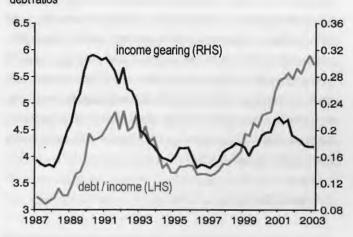


An increase in investment depends upon firms finding it both affordable and profitable to invest. While the first quarter has seen a improvement in the financial balance sheets of private non-financial corporations (PNFCs) this is relatively minor (figure 11), and the level of debt remains high. Firms continue to report very low capacity utilisation. The combination of these makes it unlikely that investment will pick up without a sharp increase in demand.

Dis-aggregated investment figures show that falls in investment, relative to a year ago reflect a by now familiar picture. Weakness is still primarily due to cut backs in machinery and equipment spending, which has been partially offset by positive growth in transport equipment and by strong

growth in construction both of new dwellings and of other structures.

Figure 11 PNFC debt ratios



## Government demand

Government demand picked up sharply in the first quarter of 2003, posting 2.5 per cent constant price growth in the first quarter of 2003, the highest figure since 1991. However this follows three quarters of relatively low growth, and the annual growth rate is only 2.5 per cent. Strong growth at the end of 2001 means that annual rate of increase is still below that seen for much of 2002 despite the deceleration that occurred through that year. The latest quarter suggests that the slowdown in government consumption was only temporary and, in light of government spending plans, consumption is likely to remains strong in the near future. In cash terms government expenditure has been growing significantly faster than GDP since the start of 2000, and in the year to the first quarter of 2003 it grew by 9.1 per cent, compared with GDP growth of 4.9 per cent. This has lead to a significant rise in the government consumption deflator.

The ongoing growth in government expenditure has come just as revenue growth too has been hurt by the slowdown in the economy. The effect has been that the central government sector has returned to net borrowing for six consecutive quarters, following thirteen quarters of net lending. It seems likely to be in significant deficit in the second quarter of 2003 also, as non-seasonally adjusted monthly public sector net borrowing data now extends to the end of the second quarter of 2003. April and May saw only slightly higher net public sector borrowing than a year ago, however June saw net borrowing of £4.8 billion compared with £2.1 billion the previous year.

## **Imports**

Recently the detection of customs fraud has lead to major revisions to import data. These revisions have led to higher imports and a

correspondingly more negative trade balance over the last five years.

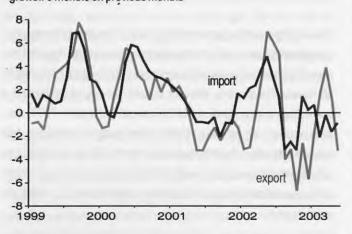
Monthly goods figures are available up to May. These show imports rising by 0.7 per cent by value in the three months to May, but falling by 0.9 per cent by volume. This discrepancy may be accounted for by the fall in the effective exchange rate raising import prices sufficiently to offset a fall in volumes. If this were the case then the fall in sterling against the euro might lead to a sharper fall in imports from the EU by volume than by value, and the rise in sterling against the dollar might lead to a smaller rise in imports from non-EU countries by volume than by value. Comparing the three months to May with the previous three months this is exactly what the data shows.

### Overseas Demand

After strengthening in the first half of last year, exports subsequently fell back in the second half in both value and volume terms. December 2002 and January 2003 saw a degree of recovery in exports, however this has not been sustained, and with the exception of March, which saw a sharp fall, the data has been largely flat since then. Goods exports in the three months to May fell 1.4 per cent by value and 3.3 per cent by volume. Figure 12 shows that over the last few years growth in import and export volumes were highly correlated until the end of 2001 when imports began to pick up before exports did. The pick up in imports was relatively short-lived, and minor in scale, the growth in exports was significantly stronger, and the subsequent fall back was also more substantial.

The improved export picture was largely due to trade outside the EU. In

Figure 12 UK trade (volume) growth: 3 months on previous months



value terms, comparing the three months to March with the previous three months goods exports rose by 11.4 per cent to non-EU countries and by 2.3 per cent to EU countries. In contrast in the three months to May goods exports rose by 0.5 per cent to non-EU countries and fell by

2.8 per cent to EU countries. In volume terms the picture is very similar, although exports to EU countries are weaker.

It remains to be seen whether sterling's recent weakness against the euro but relative strength against other currencies makes a substantial difference to this pattern. This depends upon both the strength of demand in EU economies and the degree to which exporting firms use the lower value of sterling in euro terms to increase profit margins, as opposed to increasing volumes through lower prices.

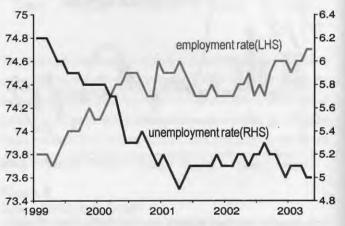
The UK current account of the balance of payments was in surplus in the first quarter of 2003, the first quarter of surplus since 1998. This surplus reflected a deficit on the balance of trade in goods and services, being more than offset by a large rise in the net income from overseas. This rise on the quarter seems to be particularly associated with an improved profit performance by oil companies.

## Labour Market

Headline labour market statistics continue to remain fairly stable.

The level of employment remains high, with the labour force survey

Figure 13 Labour Force Survey



(LFS) employment rate at 74.7 per cent in the three months to May, slightly up on the previous three months, while the LFS count of employment increased by 101,000 over the same period. The employer survey 'workforce jobs' data has shown a more modest rise of 45,000 in March 2003 compared with December. The ILO unemployment rate was 5.0 per cent in the three months to May (figure 13), a small fall and the level remains slightly below that of 2002. The claimant count unemployment rate, at 3.1 per cent in June, has not changed since the start of 2002.

Full-time employment has been flat recently, with the three months to May showing no growth over the previous three months, and a rise of only 0.2 per cent over the same period a year ago. On the other hand part-time

employment has grown by 1.4 per cent over the previous three months and 3.0 per cent compared with a year ago.

Many recent job gains have been in self employment, with the number of self-employed workers in the three months to May up 3.4 per cent compared with the previous three months and 5.9 per cent compared with a year ago. In comparison the number in employment has been flat, showing growth of only 0.4 per cent on a year ago and the number of unpaid family workers and people on government programmes have both shown sharp falls.

The industry dis-aggregation from 'workforce jobs' figures shows that the manufacturing sector continues to lose jobs, whilst echoing the output data the main sources of job creation have been 'public administration, health and education', construction and 'distribution, hotels and restaurants'. In the year to March manufacturing lost 125,000 jobs, whilst services gained 208,000 of which 157,000 were in been 'public administration, health and education' and 63,000 in 'distribution, hotels and restaurants'.

The average earnings index points to continued weakness in wage gains, despite a small rise in the headline rate in May. In May 2003 the headline rate was 3.4 per cent, up from 3.2 per cent in April, but down on the figure of around 3.8 per cent that was the case for much of 2002. This is well below the 4.5 per cent figure that the Bank of England considers broadly consistent with their inflation target. The gap between public and private sector earnings growth narrowed to below 2.0 per cent for the first time since the start of 2003 as public sector wage growth slowed slightly from 5.1 to 4.9 per cent and private sector services wages growth accelerated from 2.2 to 2.9 per cent.

## **Prices**

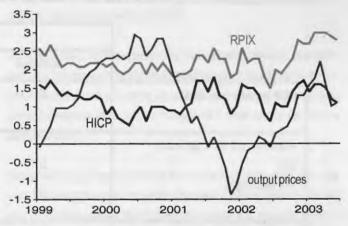
Output price inflation rose slightly in June, annual inflation rose from 1.0 to 1.1 per cent. This was due to oil prices falling less in June compared with a year ago than in May. Excluding food, beverages, tobacco and petroleum output prices rose by only 1.1 per cent in June compared with 1.2 per cent in May, suggesting underlying prices are continuing to decline from their March peak. Input prices showed a sharper rise in June than May, rising from 1.4 per cent compared with a year ago in May to 1.9 per cent in June. Input prices tend to be more responsive to changes in oil prices and exchange rate movements than output prices, and underlying input prices rose by only 1.1 per cent in the year to June, compared with 2.4 per cent in May. The sharpness of this fall may be due in part to the appreciation in the effective exchange rate, but even so the underlying trend may well be downwards.

Consumer price inflation fell for the second consecutive month in June, although the falls were small. The Government's current target measure

of inflation, RPIX was 2.8 per cent in May, down from the recent peak of 3.0 per cent in February-April, while the RPI was also down 0.1 per cent at 2.9 per cent in June.

Many of the recent movements have been due to increases in housing costs feeding through to the depreciation of housing component and to the impact of oil price movements. House price inflation is currently lower than it was earlier in the year, and so the housing depreciation component is growing more slowly, leading to a lower RPIX. The significance of the rise in house prices in the relatively high level of the RPIX can be seen by looking at the harmonised index of consumer prices (HICP), which does not include housing depreciation. The HICP for the UK also peaked in February-March as 1.6 per cent, before falling from 1.5 per cent in April to 1.2 per cent in May and 1.1 per cent in June (figure 14).

Figure 14
Prices
growth, month on a year ago



## Forecasts for the UK Economy

## A comparison of independent forecasts, July 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.

	Inde	ependent Forecasts for 200	3
	Average	Lowest	Highest
GDP growth (per cent)	1.8	0.4	2.2
Inflation rate (Q4: per cent)			
- RPI	2.5	2.0	3.7
- RPI excl MIPs	2.5	1.9	3.4
Unemployment (Q4, mn)	0.98	0.88	1.09
Current Account (£ bn)	-14.8	-39.3	-2.7
PSNB *(2003-04, £ bn)	31.2	24.6	35.1

Inde	pendent Forecasts for 200	04
Average	Lowest	Highest
2.4	-0.6	3.2
0.7	47	27
2.7		3.7
2.3	1.5	3.0
1.01	0.75	1.30
-17.7	-40.9	-1.2
33.7	26.8	45.8
	2.4 2.7 2.3 1.01	2.4 -0.6  2.7 1.7 2.3 1.5  1.01 0.75  -17.7 -40.9

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.

<sup>\*</sup> PSNB: Public Sector Net Borrowing.

## International Economic Indicators - August 2003

Gladys Asogbon, Marcoeconomic Assessment - National Statistics

Address: D4/20, 1 Drummond Gate, London, SW1V 2QQ, tel: 020 7533 5925, E-mail: gladys.asogbon@ONS.gov.uk

## Overview

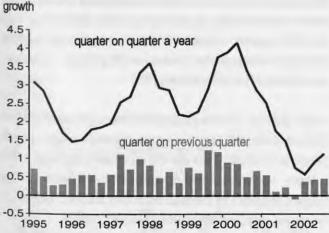
Output growth was low or negative in all the major economies in the first quarter of 2003. It contracted in Germany and Italy driven mainly by low or falling investment and negative contributions from trade. Growth was marginal and fairly subdued in Japan and the US respectively. Consumer demand is still weak in most major economies although it made modest contributions to quarterly GDP in 2003 quarter one. Trade also slowed from a strong second half of 2002 and investment demand is still at best weak or in decline in most major economies. The decline in industrial output was reversed in most major economies in 2003 quarter one. Unemployment is flat or inching up in most economies and employment growth is weakening. Inflationary pressure has lessened in the major economies as oil prices fell in April.

## **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 growth has been subdued since the start of 2001(figure 1). The main drivers of this in 2001 were falls in investment and exports. In 2001 quarter four GDP declined for the first time since 1993 quarter one. A demand breakdown shows a modest strengthening in consumer expenditure and a stronger increase in exports in the second and third quarters of 2002. Investment demand also made a positive contribution to quarterly GDP after six consecutive quarters of contraction.

Figure 1 GDP: EU15



As with GDP, industrial production in the EU has been subdued since 2001, when the index grew by just 0.1 per cent. For 2002 as a whole, the index fell by 1.0 per cent. In 2003 quarter one, the index grew by 0.5 per cent following strong monthly increases in January and February, partially offset by a fall in March. This growth came after a contraction in the index in the previous quarter of 0.4 per cent.

Consumer price inflation rose in the EU in the last quarter of 2002, with growth reaching 2.5 per cent in December up from 1.8 per cent in June. May 2003 figures show consumer price inflation slowing to 2.0 per cent from 2.3 per cent in the previous month. Prices at the factory gate are also increasing more slowly with PPI falling to 0.6 per cent in May compared to 0.9 per cent in the previous month.

EU employment figures continue to show growth, although at a lower rate. Annual growth in the year to the third quarter was 0.5 per cent. The unemployment rate is inching up with 8.1 per cent of the workforce unemployed as of May up from a trough of 7.3 per cent in the second quarter 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 and show no signs of slowing in response to the rise in unemployment.

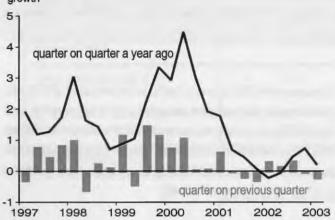
## Germany

The German economy contracted by 0.2 per cent in the first quarter of 2003, having posted no growth in the previous quarter (figure 2). Overall GDP grew by just 0.2 per cent for 2002 as a whole compared with 0.8 per cent in 2001.

The negative GDP in 2003 quarter one was mainly due to negative contributions from investment and trade (as imports grew faster than exports), which have been the main causes of the global slowdown in 2001/2002, partially offset by a modest increase in private consumption. More generally however there had been a lack of any appreciable domestic momentum in the German economy. Household consumption made a negative contribution of 0.3 per cent in 2002 and investment expenditure has been in decline, showing contractions in annual growth

in both 2001 and 2002. Government demand has made only small contributions in recent years and did not make any contribution to GDP in quarter one. The impetus that came mainly from exports in 2002 quarters two and three has slowed considerably in the last two quarters. 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



The IOP on the other hand grew by 1.4 per cent in quarter one rebounding from a 0.5 per cent contraction in the previous quarter. This was dominated by a very large monthly increase in January of 2.6 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. Overall in 2002, the index fell by 1.1 per cent

The CPI shows consumer prices growing by 0.6 per cent in the year to May lower than the 0.9 per cent increase in prices in April. This is the smallest increase in the index since July 1999. Germany has the lowest consumer price inflation of the large Euro economies. Figures for the PPI for the same period show prices at the factory gate increasing by 1.3 per cent in the year to May. The deceleration in the growth of both indices may reflect the fall in oil prices.

Unemployment in Germany has shown an upward trend recently, with the rate in May at 9.4 per cent, the same as the previous month and the highest rate since April 1998. 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 for the sixth consecutive quarter in the first quarter of 2003, with annual growth figures for the quarter showing a decline of 1.3 per cent, accelerating from a decline of 1.1 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

GDP growth in the first quarter of 2003 was 0.3 per cent having contracted by 0.1 per cent in the previous quarter (figure 3). Overall in 2002, the economy grew by 1.2 per cent, the lowest growth rate since 1996 but still one of the highest growth rates of the major Euro economies that year.

Figure 3 GDP: France growth 5 4 3 quarter on quarter a year ago 2 1 quarter on previous quarter 1997 1998 1999 2000 2001 2002 2003

The French economy has slowed significantly over the last two years, in line with global trends, although it outperformed the EU in the first two quarters of 2002. France's performance has been helped by recent income tax cuts, which have underpinned growth in disposable income and consumer spending. In quarter one of 2003, GDP was supported by small increases in household spending, investment and stocks, offset by a negative contribution from trade due to falling exports. Government consumption did not add to quarterly GDP.

As with Germany, industrial production in France grew considerably in the latest quarter, by 0.9 per cent due to significant monthly increases in January and February. It was also strongly influenced by energy output in March. However, industrial production fell by 0.8 per cent in April reflecting primarily a fall in energy output from relatively high levels in quarter one, consistent with prevailing weather conditions.

Consumer price inflation rose steadily from the second half of 2002 and this continued into the first quarter of 2003 reaching 2.6 per cent in March. However since then inflation has slowed to 1.7 per cent in May from 2.0 per cent in the previous month. This reflects lower oil and fresh food prices which were partially offset by an increase in gas prices effective 1 May. Producer prices have also been rising since the second half of 2002, having fallen in the first half of the year. However, the PPI slowed

slightly in May with an increase of 0.6 per cent compared in 0.7 per cent in the previous month.

The French unemployment rate, like that in most major economies has also been rising steadily over the past year. It has been at 9.1 per cent of the workforce for three months since March, the highest rate since August 2000. Employment growth also continued its slowdown in the first quarter of 2003, with no annual growth following 0.3 per cent growth in the previous quarter and well down on growth of 2.3 per cent at the start of 2001.

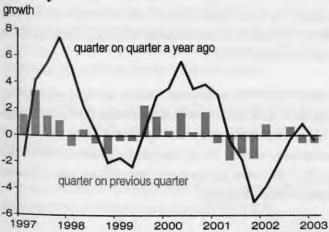
Following on from the labour market conditions, annual earnings growth continued to ease, slowing from 4.1 per cent in the fourth quarter of 2001 to 2.9 per cent in the first quarter of 2003.

## Italy

Data for 2003 quarter one shows the Italian economy contracting by 0.1 per cent after growing by 0.4 per cent in the previous quarter. Overall in 2002, the economy grew by 0.4 per cent compared to growth of 1.7 per cent in the previous year and 3.3 per cent in 2000.

A breakdown of the components of quarterly GDP show a substantial contribution from stockbuilding of 1.5 per cent offset by negative contributions from trade (there was a large fall in both exports and imports) and investment, which deteriorated quite sharply in the first quarter. Government demand made a small positive contribution of 0.1 percentage points to quarterly GDP. Household demand, which had helped hold up quarterly GDP in the last three quarters of 2002 did not make a contribution in 2003 quarter one. More generally, Italy has had one of the lowest annual growth rates in EU15 over the last few years.

Figure 4 IOP:Italy



The IOP contracted in the first quarter of 2003 by 0.5 per cent, making two consecutive quarters of contraction in the index. Industrial production

contracted for all four quarters of 2001. Annual figures show that for 2002 as a whole, the index contracted by 1.3 per cent, following a fall of 1.0 per cent in the previous year.

Inflation in Italy has been steady at 2.7 per cent for the three months since March 2003. Producer prices however have fallen in the last two months with the index slowing from 2.0 per cent in April to 1.5 per cent in May.

Figures on the Italian labour market show unemployment in 2002 broadly flat at 9.0 per cent, but an improvement on 9.5 per cent in 2001. Recently updated figures show small improvements to unemployment in the last three months from February. The rate is currently 8.7 per cent in April 2003, a decline of 0.2 percentage points from January 2003. Employment growth was 0.8 per cent in the year to the first quarter of 2003 down from growth of 0.9 per cent in the year to 2002 quarter four.

Earnings growth picked up to 2.8 per cent in the year to the fourth quarter of 2002, but has now fallen back a touch in the first quarter of 2003 to 2.5 per cent although the figures are volatile from quarter to quarter.

## USA

The latest figures for the US economy for 2003 quarter one show the economy growing by 0.4 per cent, following growth in the previous quarter of 0.3 per cent.

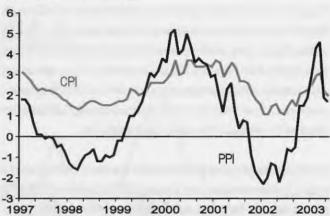
Growth in 2003 quarter one was driven by personal consumption, which was also the main driver throughout 2002. Growth was also impacted positively by the substantial decline in imports, which had been fairly strong in 2002 especially in quarter two. However all other contributors to quarterly GDP growth were weak or negative and the impetus of the early quarters of 2002 seems to have stalled. More generally, quarterly GDP growth in 2002 had been well below growth rates seen in the 1990s although performance was 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 index of production did not grow in the first quarter, a fairly strong growth in the index in January being offset by an equivalent contraction in March. This follows a fall of 0.9 per cent in 2002 quarter four. Overall in 2002, the index contracted by 0.8 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 only started increasing in October. This increase was particularly marked in the first quarter of 2003. Inflation rose from 2.6 per cent in January to 3.1 per cent in March, the highest rate since June 2001. However the inflation rate fell considerably in April, to 2.2 per cent as the effect of

previous high oil prices dropped out. May has seen a further fall in the inflation rate to 2.0 per cent. Similarly, producer prices growth has fallen substantially from 4.6 per cent in March (the highest rate since June 2000) to 1.7 per cent in May.

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



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 stopped in the first three months of 2002, but the volatility in the figures since then offers no clear signs of recovery. The unemployment rate rose to 6.0 per cent in December 2002, falling back slightly in the first three months of 2003 and then returning to 6.0 per cent in April. There has been a 0.1 percentage point increase in the latest figures with unemployment now at 6.1 per cent in May.

Average earnings growth in the year to the first quarter was 2.7 per cent, the same as the previous quarter but down from growth of 4.0 per cent at the start of 2002. Earnings growth has declined continuously since the start of 2002 possibly due to the deterioration in labour market conditions which began in 2001.

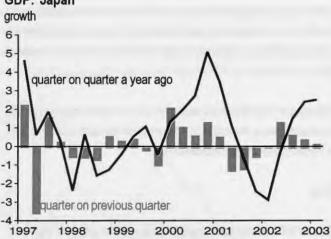
## Japan

The Japanese economy grew by 0.1 per cent in the first quarter of 2003. This followed growth of 0.4 per cent in the fourth quarter of 2002.

All components of GDP growth for the first quarter were either weak or negative. Households, government and stocks each made small contributions to quarterly GDP and investment continues the contraction that started at the beginning of 2001 when the global slowdown began. Trade did not contribute to quarterly GDP in the latest quarter. More generally, Japan has had low or negative GDP growth since 1997 (except in 2000 when growth was 2.7 per cent, although this was still below the growth rates of most major economies for that year). Annual figures for 2002 shows the economy growing by just 0.1 per cent. The

stronger growth in the later quarters of 2002 had been driven by a combination of stronger consumer demand (although this fell back again in 2002 quarter four), substantial stockbuilding in quarters two and three and a fairly strong rebound in exports.

Figure 6 GDP: Japan



The index of production grew by 0.4 per cent in quarter one following growth of 0.5 per cent in the previous quarter. The index has grown in every quarter since the last quarter of 2001. This performance is a significant improvement over 2001 when the index contracted in all four quarters. Overall in 2002, the index contracted by 1.3 per cent, which, although negative, is a substantial improvement over the previous year's contraction of 6.2 per cent.

Consumer and producer price falls continue the deflation that began in mid-1998, although price falls have slowed since the end of 2002. Figures for the year to May show the consumer prices index declining by 0.2 per cent and the producer price index by 1.0 per cent.

The unemployment rate in May was 5.4 per cent and has been at that rate since March. Recent rates of unemployment are very high by historical standards for Japan (unprecedented since 1960 when OECD records began). Employment growth is negative, declining by 0.8 per cent in the year to 2003 quarter one.

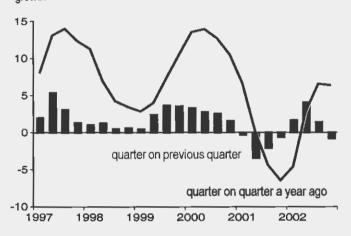
Despite the present unemployment situation, earnings growth declines reversed in the latest two quarters to show a moderate increase in earnings of 0.1 per cent in the year to the fourth quarter and 1.8 per cent in the year to first quarter of 2003. This is a significant improvement over the third quarter of 2002 when earnings were 2.2 per cent lower than in the same quarter of the previous year.

## **World Trade**

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

Manufacturing exports of OECD countries contracted by 0.8 per cent compared to growth of 1.4 per cent in the previous quarter (figure 7). At the same time imports of manufactured goods into the OECD area slowed considerably from a quarterly growth rate of 2.0 per cent in quarter three to 0.6 per cent in quarter four.

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

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			Co	entribution t	to change in	GDP								
	GDP	PFC	GFC	GFCF	ChgStk <sup>1</sup>	Exports	less	loP	Sales	CPI	PPI	Earnings	Empl	Unemp
Teresentano ob			line											
Percentage ch	ILGB	HUDS	HUDT	HUDU	HUDV	HUDW	HUDX	ILGV	ILHP	HYAB	ILAI	ILAR	ILIJ	GADE
998	2.9	1.9	0.3	1.3	0.4	2.1	3.1	3.8	2.9	1.7	-0.4	2.8	1.9	9.4
999	2.8	2.1	0.4	P 1.1	-0.2	1.8	2.4	1.8	1.9	1.2		2.7	1.9	8.7
000	3.6	1.8	0.4	1.0	-0.1 0.4	4.3 0.9	3.9 0.6	4.6 0.1	2.3	2.4	4.6 1.2	3.3	1.9	7.5
001 002	1.6	1.3	0.4		0.4	0.5	0.0	-1.0	0.9	2.1	0.2	5.0	1.0	7.
999 Q4	3.8	2.1	0.4	1.2	-	3.3	3.4	4.3	2.5	1.6	2.3	2.7	1.8	8.
000 Q1	3.9	1.8	0.4	1.1	-0.1	4.3	3.7	4.3	2.3	2.1	4.1	3.6	1.7	8.
Q2	4.1	2.2	0.4	1.2	-	4.4	4.1	5.4	3.5	2.1	4.7	3.6	1.9	7.
Q3	3.4	1.8 1.5	0.4	0.9	-0.2	4.3 4.2	4.1 3.9	4.7	2.1 1.6	2.5 2.6	4.9	2.6 3.5	1.8	7.
Q4	2.9	1.5	0.4	0.5	-0.2	4.2	5.5	4.1	1.0	2.0	74.1	3.3	2.1	1.
2001 Q1	2.5	1.4	0.4	0.5	-0.3	3.1	2.6	4.2	3.3	2.4	3.1	2.6	1.9	7.4
Q2	1.8	1.2	0.3	0.2	-0.2	1.5	1.3	0.6	2.4	2.8	2.3	3.4	1.4	7.
Q3	1.5	1.2	0.4	-0.1	-0.4	0.2	-0.2	-0.7	2.5	2.5	0.7	3.4	1.2	7.
Q4	0.8	1.2	0.4	-0.4	-0.7	-1.1	-1.4	-3.4	1.4	2.0	-0.9	2.5	0.8	7.
002 Q1	0.6	0.7	0.5	-0.6	-0.1	-1.1	-1.2	-3.1	0.4	2.2	-0.6	3.4	0.7	7.
Q2	0.9	0.7	0.6	-0.7	-0.3	0.2	-0.4	-1.1	0.6	1.9	-0.4	2.5	0.7	7.
Q3 Q4	1.1	0.8	0.5	-0.4	-0.1	1.1	8.0	-0.4 0.8	1.2	1.9	0.3	3.3	0.5	7.
	-	**	••											
2003 Q1		••		**		**		0.8	0.9	2.5	1.9			7.
2002 Jun			*1			**		-1.3	-	1.8	-0.5		**	7.
Jul								0.2	1.8	1.9	0.1			7.
Aug	**	**	**			**		-1.3	0.9	1.9	0.4	**	**	7.
Sep		**	**	**		**	**	-0.2	0.9 3.6	1.9	1.0	**	**	7.
Oct Nov		**	**			**	**	1.7	0.9	2.2	1.0		**	7.
Dec							**	-0.2	-	2.5	1.4			7.
0000 1								0.7	1.8	2.4	1.6			7.
2003 Jan Feb	**				**			1.6	0.9	2.6	2.0			7.
Mar	**							0.1	-	2.4	1.9	**		8.
Apr		**				**		0.2	0.9	2.3	0.9	**		8.
May				••	**	**			**	2.0	0.6	**	**	8.
ercentage cl														
999 Q4	ILGL 1.2	HUDY 0.6	HUDZ 0.1	HUEA 0.3	HUEB 0.3	HUEC 1.0	HUED 1.0	ILHF 1.7	ILHZ 1.2				ULIT 0.1	
2000 Q1			0.1	0.2	-0.2	1.2	10	0.1	-0.3					
Q2	0.9	0.5	0.1	0.2	-0.2	1.0	1.0	1.9	0.9				-0.4 1.3	
Q3	0.5	0.2	0.1	0.2	-0.1	1.0	0.9	1.0	0.3				0.7	
Q4	0.6	0.2	0.1	0.2	0.1	0.9	0.9	1.1	0.6				0.4	
2001 Q1	0.5	0.5	0.1	-0.1	-0.3	0.1	-0.2	0.2	1.4				-0.6	
Q2	0.1	0.3	0.1	-0.1		-0.5	-0.3	-1.6					0.8	
Q3	0.2	0.2	0.1	-0.1	-0.3	-0.3	-0.6	-0.3	0.4				0.6	
Q4	-0.1	0.2	0.2	-0.1	-0.2	-0.4	-0.3	-1.7	-0.4				_	
2002 Q1	0.4		0.1	-0.2	0.3	-	-0.1	0.5	0.4				-0.6	
Q2	0.4	0.3	0.1	-0.1	-0.1	0.8	0.5	0.4	0.3				8.0	
Q3 Q4	0.4	0.3	0.1	0.1	-0.1	0.6	0.6	0.4 -0.4	0.9				0.3	
2003 Q1								0.5	-0.3					
	hongs so		month		**		10	0.0	0.0				"	
Percentage c	nange on	previous	monut					ILKF	ILKP					
2002 Jun								-0.1	-					
Jul								0.4	0.9					
Aug								0.1	-					
Sep								-0.2	-					
									0.0					
Oct								-0.3 0.4	0.9 -0.9					

GDP = Gross Domestic Product at constant market prices 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

0.9

-0.8

0.9

-0.9 0.9

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

2003 Jan

Feb Mar Apr May

<sup>1</sup> This series has been discontinued

			Cor	tribution to	change in	GDP								
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	loP	Sales	CPI	PPI	Earnings	Empl <sup>1</sup>	Unempi
Percentage of	hange on a	year earlie												
	ILFY	HUBW	HUBX	HUBY	HUBZ	HUCA	HUCB	ILGS	ILHM	HVLL	ILAF	ILAO	ILIG	GABD
1998	1.7	0.9	0.4	0.5	0.3	1.8	2.2	4.2	1.0	1.0	-0.4	1.8	1.5	9.1
1999	1.9	2.0	0.2	8.0	-0.4	1.5	2.3	1.5	0.4	0.6	-1.0	2.6	-0.1	8.4
2000	3.1	0.9	0.2	0.7	0.2 -0.6	4.4 1.8	3.3 0.4	6.2 0.5	1.4	1.5	3.4 2.9	2.7 1.5	0.6	7.8 7.8
2001 2002	0.8	-0.3	0.2	-1.4	-0.0	0.9	-0.7	-1.1	-2.7	1.5	-0.4	1.7	-0.9	8.6
1999 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	-0.2	8.2
2000 Q1	2.9	0.5	0.2	0.8	-0.1	4.4	2.8	5.1	-0.2	1.5	2.3	2.8	0.3	7.9
Q2	4.5	1.9	0.3	0.9	0.2	4.2	2.9	6.7	4.4	1.1	2.6	2.4	0.6	7.8
Q3 Q4	3.0 1.9	0.3	0.1	0.6	0.2	4.0 4.9	3.0 4.4	7.1 5.8	1.6 -0.1	1.3 1.8	3.7 4.5	3.3 2.4	0.4	7.7 7.6
2001 Q1	1.8	1.1	0.2	-0.4	-0.3	3.4	2.3	6.0	2.3	1.7	4.8	2.0	0.7	7.6
Q2	0.7	0.8	0.2	-1.0	-0.3	2.3	1.4	1.4	0.4	2.5	4.7	2.0	0.7	7.7
Q3	0.4	0.8	0.2	-1.5	-1.0	1.8	-0.1	-1.3	1.5	2.2	2.6	1.1	0.2	7.9
Q4	0.1	0.9	_	-1.6	-0.9	-0.2	-1.8	-3.7	0.2	1.6	0.3	1.0	-0.3	8.1
2002 Q1	-0.2	-0.3	0.2	-1.4	-0.8	-	-2.0	-3.7	-4.9	1.9	-0.2	1.1	-0.5	8.3
Q2	-0.1	-0.7	0.4	-1.8	0.1	0.6	-1.3	-1.9	-2.8	1.3	-0.9	1.0	-0.8	8.5
Q3 Q4	0.5	-0.4 -0.1	0.4	-1.4 -1.0	0.5 0.4	1.3 1.8	0.6	-0.3 1.5	-1.5 -1.7	1.1	-1.0 0.5	2.1 2.4	-1.0 -1.1	8.6 8.8
2003 Q1	0.2	0.7	0.1	-0.9	1.0	1.9	2.5	2.0	0.9	1.2	1.7		-1.3	9.2
2002 Jun								-1.2	-3.4	1.0	-1.1			8.7
	-	**					-					**	**	
Jul	**	**	24	••		**		0.4	-2.2 -1.4	1.2	-1.0		**	8.6
Aug	**	**		**		**		-0.4 -0.5	-1.1	1.2	-1.0 -0.9		**	8.6
Sep	••	**	**			**		0.8	1.6	1.3	0.3		"	8.7 8.7
Nov	**	**		**	**	**	44	3.8	-3.9	1.2	0.4		64	8.8
Dec	**				**	**		-	-2.7	1.2	0.9			8.9
2003 Jan						.,	**	1.7	1.2	1.1	1.6	.,		9.0
Feb	**		**		**	**		2.6	1.3	1.2	1.9	**		9.2
Mar			**	4.0	*-	**	**	1.5		1.2	1.7	**		9.3
Apr May			**					0.4	-1.3 -1.5	0.9	1.6	**		9.4
Percentage of	change on p	revious a	uarter											
1999 Q4	ILGI 1.1	HUCC 0.5	HUCD 0.1	HUCE -0.1	HUCF 0.2	HUCG 0.7	HUCH 0.3	ILHC 1.5	ILHW 1.9				ILIQ 0.6	
2000 Q1	0.7	-	0.1	0.3	-	1.4	1.0	0.7					-1.9	
Q2 Q3	1.1	0.8	-0.1 -0.1	0.2	-	0.9	0.8	2.6	1.2				1.0	
Q4	0.1	-0.1 -0.3	0.4	-0.2	0.3	1.6	0.8 1.7	2.1 0.3	-1.4 0.2				0.7 1.0	
2001 Q1	0.6	0.8	-0.1	-0.6	-0.6	_	-1.0	0.9	2.4				-1.9	
		0.5	-	-0.3	_	-0.2	-0.1	-1.8	-0.7				1.0	
Q2	_			-0.4	-0.7	0.4	-0.7	-0.6	-0.4				0.2	
Q2 Q3 Q4	-0.2 -0.3	-0.1 -0.3	0.2		0.4	-0.3	_	-2.2	-1.1					
Q3 Q4	-0.2 -0.3	-0.1 -0.3	0.2	-0.3		-0.3	_13	-2.2	-1.1					
Q3 Q4 2002 Q1	-0.2 -0.3	-0.1 -0.3 -0.4	0.2	-0.3 -0.4	-0.5	0.2	-1.3 0.6	0.9	-2.8				-2.2	
Q3 Q4 2002 Q1 Q2 Q3	-0.2 -0.3	-0.1 -0.3	0.1 0.1	-0.3 -0.4 -0.7	-0.5 0.8 -0.3	0.2 0.4 1.1	0.6 0.7	0.9	-2.8 1.6 0.9				-2.2 0.7	
Q3 Q4 2002 Q1 Q2 Q3 Q4	-0.2 -0.3 0.3 0.1 0.3	-0.1 -0.3 -0.4 0.1 0.2	0.2 0.1 0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 - 1.1 -0.5	-2.8 1.6 0.9 -1.3				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7	-0.5 0.8 -0.3	0.2 0.4 1.1	0.6 0.7	0.9	-2.8 1.6 0.9				-2.2 0.7	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 - 1.1 -0.5	-2.8 1.6 0.9 -1.3 -0.3				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage (2002 Jun	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 - 1.1 -0.5 1.4 ILKC 1.8	-2.8 1.6 0.9 -1.3				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage (2002 Jun Jul	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 - 1.1 -0.5 1.4 ILKC 1.8	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage 2002 Jun Jul Aug	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 - 1.1 -0.5 1.4 ILKC 1.8 -0.1	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage 2 2002 Jun Jul Aug Sep	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 -1.1 -0.5 1.4 ILKC 1.8 -0.1 1.2 -1.2	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage of 2002 Jun Jul Aug Sep Oct	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 -1.1 -0.5 1.4 ILKC 1.8 -0.1 1.2 -1.2 -0.4	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0 0.7 -0.8				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage of 2002 Jun Jul Aug Sep	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 -1.1 -0.5 1.4 ILKC 1.8 -0.1 1.2 -1.2	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage of 2002 Jun Jul Aug Sep Oct Nov Dec	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0 0.7 - 0.8 -3.4 -0.2				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage ( 2002 Jun Jul Aug Sep Oct Nov Dec	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 -1.1 -0.5 1.4 ILKC 1.8 -0.1 1.2 -1.2 -0.4 2.1 -3.0 2.6	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0 0.7 - 0.8 -3.4 -0.2				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage (2002 Jun Jul Aug Sep Oct Nov Dec 2003 Jan Feb	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 - 1.1 -0.5 1.4 ILKC 1.8 -0.1 1.2 -1.2 -0.4 2.1 -3.0 2.6 0.6	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0 0.7 - 0.8 -3.4 -0.2				-2.2 0.7 - 0.4	
Q3 Q4 2002 Q1 Q2 Q3 Q4 2003 Q1 Percentage ( 2002 Jun Jul Aug Sep Oct Nov Dec	-0.2 -0.3 0.3 0.1 0.3 -	-0.1 -0.3 -0.4 0.1 0.2 -	0.2 0.1 0.1 - -0.1	-0.3 -0.4 -0.7 -0.2	-0.5 0.8 -0.3 0.3	0.2 0.4 1.1 0.1	0.6 0.7 0.6	0.9 -1.1 -0.5 1.4 ILKC 1.8 -0.1 1.2 -1.2 -0.4 2.1 -3.0 2.6	-2.8 1.6 0.9 -1.3 -0.3 ILKM -1.0 0.7 - 0.8 -3.4 -0.2				-2.2 0.7 - 0.4	

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

<sup>1</sup> Excludes members of armed forces

			Co	ntribution t	o change in	GDP								
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PPI <sup>1</sup>	Earnings	Empl <sup>2</sup>	Unempl
Percentage o	hange on	a year earl	ier											
	ILFZ	HUBK	HUBL	HUBM	HUBN	HUBO	HUBP	ILGT	ILHN	HXAA	ILAG	ILAP	ILIH	GABO
1998	3.6	2.0	-	1.3	0.8	2.1	2.6	5.2	2.6	0.8	-0.9	2.2	1.9	11.4
1999	3.2	1.9	0.3	1.6	-0.3	1.1 3.6	1.5 3.8	1.9 3.6	2.4 0.5	0.5 1.7	-1.6 2.0	2.5 5.2	2.2	10.7 9.3
2000 2001	4.2 2.1	1.6 1.6	0.7	1.7 0.4	0.5 -0.6	0.5	0.4	1.1	-0.2	1.7	1.2	4.2	1.7	8.5
2001	1.2	0.8	0.9	-0.3	-0.4	0.3	0.2	-1.0	-0.2	1.9	-0.2	3.6	0.5	8.7
1999 Q4	4.1	1.9	0.6	1.7	-	2.2	2.3	4.2	2.1	1.0	-	3.4	2.5	10.2
2000 Q1	4.7	2.1	0.6	1.9	0.3	3.1	3.2	3.9	1.9	1.5	1.2	5.2	2.6	9.8
Q2	4.5	1.7	0.7	1.8	0.2	3.9	3.7	3.8	1.4	1.5	2.0	5.4	2.9	9.4
Q3 Q4	3.9 3.8	1.4	0.8	1.4 1.5	1.0 0.5	3.4	4.2 4.0	3.7 2.9	0.1 -1.3	1.9 1.9	2.7	5.2 5.0	2.8	9.1
						2.7	2.4	2.9	1,1		2.4			
2001 Q1	3.1 2.2	1.5 1.5	0.6	1.0 0.5	-0.3	0.7	1.0	1.8	-0.4	1.2	1.7	4.3	2.3 1.9	8.6
Q2 Q3	2.2	1.7	0.7	0.4	-1.0	0.1	-0.3	1.6	-0.7	1.9	0.7	4.2	1.4	8.5
Q4	0.7	1.5	0.7	-0.1	-1.4	-1.4	-1.6	-1.9	-0.8	1.4	-	4.1	1.1	8.5
2002 Q1	0.8	0.9	0.9	-0.3	-0.4	-0.9	-0.6	-1.6	-1.6	2.2	-0.7	3.9	0.7	8.6
Q2	1.4	0.9	1.0	-0.1	-0.8	0.5	-	-0.7	-0.6	1.6	-0.5	3.9	0.5	8.7
Q3 Q4	1.3	0.7	0.9	-0.3 -0.5	-0.1 -0.1	0.7	0.5	-1.9 0.1	1.0	1.8	0.1	3.5 3.4	0.5	8.8
	1.4	0.9	0.7	-0.3	-0.1	0.4	0.6	0.9	-0.8	2.4	0.6	2.9	- 0.5	9.0
2003 Q1		0.9	0.7											
2002 Jun	.,		**					-1.0	-3.1	1.5	-0.4	**		8.7
Jul					**	**	**	-1.8	1.7	1.7	0.1		4+	8.8
Aug		**				^*	**	-2.8	2.7	1.8	0.2		44	8.8
Sep		**		**	14	**	**	-1.1 -0.4	-1.3 3.0	1.8	0.2		**	8.8
Oct Nov	-	**				**		0.9	2.1	2.2	0.1		**	8.9
Dec								-0.3	-1.8	2.3	0.3			8.9
2003 Jan								0.7	3.0	2.0	0.4			9.0
Feb								1.7	-0.7	2.6	0.6			9.0
Mar						**		0.6	-4.6	2.6	0.7			9.1
Apr May	••	**	**					-0.5	1.8 -2.0	2.0	0.7	**	**	9.1
						•	••		2.0	•••	0.0		**	0.
Percentage (	ILGJ	HUBQ	HUBR	HUBS	HUBT	HUBU	HUBV	ILHD	ILHX				ILIR	
1999 Q4	1.3	0.5	0.3	0.4	0.6	0.6	1.0	2.2	1.0				0.7	
2000 Q1	1.2	0.4	0.2	0.6	0.1	1.0	1.1	-0.3	-0.2				8.0	
Q2	0.8	0.2	0.2	0.4	-0.1	1.1	1.0	0.6	-0.7				0.7	
Q3 Q4	1.3	0.2	0.1	0.1	0.4	1.0	1.0	1.2	-0.4				0.6	
2001 Q1		0.7	0.1	0.1	-0.7	-0.1	-0.5	-0.3	2.3				0.4	
Q2	0.6 -0.1	0.7	0.1	-0.2	0.2	-0.1	-0.5	-0.3	-2.2				0.4	
Q3	0.5	0.4	0.3	-	-0.7	0.1	-0.3	1.0	-0.3				0.2	
Q4	-0.2	0.1	0.1	-0.1	-0.2	-0.5	-0.4	-2.2	-0.5				0.3	
2002 Q1	0.6	0.1	0.3	-0.1	0.3	0.4	0.5	-	1.4				_	
Q2	0.6	0.2	0.3	-	-0.1	0.5	0.3	0.5	-1.2				0.1	
Q3	0.3	0.2	0.2	-0.1	- =	0.3	0.2	-0.2	1.3				0.1	
Q4	-0.1	0.2	0.2	-0.2	-0.3	-0.2	-0.2	-0.3	-0.5				0.1	
2003 Q1	0.3	0.3	-	0.1	0.4	-0.2	0.3	0.9	-0.4				-0.3	
Percentage (	change on	previous	month						Service A					
2002 Jun								-0.1	ILKN -2.4					
Jul								-0.2	3.1					
Aug								0.3	1.0					
Sep									-3.8					
Oct								-0.6	2.8					
								0.9	-2.7					
Nov Dec														
Dec								4 0	4 4					
Dec 2003 Jan								1.0	4.1					
Dec 2003 Jan Feb								0.7	-1.9					
Dec 2003 Jan														

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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

Source: OFCD - SNA93

Producer prices in manufactured goods
 Excludes members of armed foces

			Co	ntribution to	change in	GDP								
	GDP	PFC	GFC	GFCF	ChqStk	Exports	less	loP	Sales	CPI	PPI	Earnings	Empl	Unempl
Percentage of				GFCF	Chysik	Exports	imports	IOF	Sales	CFI	FFI	carnings	Empi	Unemp
	ILGA	HUCI	HUCJ	HUCK	HUCL	HUCM	HUCN	ILGU	ILHO	HYAA	ILAH	ILAQ	ILII	GABE
1998	1.8	1.9		0.7	0.3	1.0	2.1	1.3	1.0	2.0	0.1	2.8	1.1	11.7
1999	1.7	1.6	0.2	0.9	0.3	_	1.4	-0.2	0.8	1.7	-0.2	2.3	1.2	11.3
2000	3.3	1.7	0.3	1.5	-1.1	3.3	2.4	4.1	-0.8	2.5	6.0	2.0	1.9	10.4
2001	1.7	0.7	0.6	0.5	-0.1	0.3	0.3	-1.0	-0.1	2.7	1.9	1.8	2.0	9.5
2002	0.4	0.3	0.3	0.2	0.4	-0.3	0.4	-1.3	-0.6	2.5	0.2	2.8	1.4	9.0
1999 Q4	3.0	1.4	0.2	1.3	0.2	2.1	2.1	3.0	2.2	2.1	2.2	1.9	1.4	11.0
2000 Q1	3.4	1.4	0.2	1.8	-1.2	4.1	2.8	3.6	-1.9	2.4	4.7	2.0	1.0	10.9
Q2	3.3	1.7	0.2	1.6	-0.4	3.0	2.7	5.6		2.6	6.2	2.5	1.6	10.5
Q3	3.3	1.8	0.3	1.6	-1.2	3.6	2.8	3.5	1.3	2.6	6.7	2.0	2.1	10.3
Q4	3.0	1.7	0.3	1.0	-1.3	2.6	1.4	3.8	-2.5	2.6	6.5	1.9	2.8	9.9
2001 Q1	2.7	1.5	0.6	1.0	-0.6	1.7	1.4	3.1	1.6	2.9	4.7	1.8	3.2	9.7
Q2	2.1	0.9	0.6	0.5	-0.6	1.4	0.8	-0.4	-0.3	3.0	3.2	1.2	2.0	9.5
Q3	1.5	0.3	0.6	0.2	0.6	-0.8	-0.6	-1.8	-1.0	2.8	1.1	2.2	1.8	9.4
Q4	0.7	-	0.7	0.4	0.2	-1.0	-0.5	-5.0	-0.6	2.5	-1.1	2.3	1.2	9.2
2002 Q1	-0.1	-0.5	0.4	-0.4	1.8	-3.0	-1.6	-3.8	-0.3	2.4	-1.0	2.4	1.7	9.0
Q2	0.3	-	0.3	-0.3	0.6	-0.5	-0.2	-2.1	-1.0	2.2	-0.6	3.4	1.9	9.0
Q3	0.4	0.5	0.3	0.3	-0.3	1.3	1.6	-0.3	-1.3	2.4	0.5	2.4	1.3	9.0
Q4	0.9	1.1	0.2	1.0	-0.4	1.0	2.0	0.9	-	2.7	1.7	2.8	0.9	8.9
2003 Q1	0.8	1.1	0.3	0.1	_	0.9	1.5	-0.4	-0.6	2.7	2.6	2.5	0.8	8.9
2002 Jun		.,		44	**	.,		-1.7	-1.0	2.2	-0.4	3.5		9.0
Jul		***	**	**	**			-0.2	-1.0	2.2	0.4	2.4		9.0
Aug	**		**				**	-0.8	-1.0	2.4	0.5	2.4		9.0
Sep	**		**	**			**	0.2	-1.9	2.6	0.8	2.5	**	9.0
Oct	**	**	**			**	••	20	-	2.7	1.6	2.9		8.9
Nov Dec	**		**		**		**	2.0 0.6	_	2.8	1.5	2.8		8.9 8.9
	4.6		**		**								**	
2003 Jan Feb	**	**		**	**			0.3 -0.7	-1.0	2.8	2.4	2.9 3.0	**	8.9 8.9
	4.	**			**	**	**	-0.8	-1.0	2.7	2.8	1.7	**	
Mar	**			**			**	1.2	2.9	2.7	2.0	1.8	47	8.8 8.7
Apr May	**	40								2.7	1.5	1.8		0.1
Percentage (	change on	aravious e	nuarter											
reiteiltage	ILGK	HUCO	HUCP	HUCQ	HUCR	HUCS	HUCT	ILHE	ILHY				ILIS	
1999 Q4	1.0	0.2	0.1	0.3	0.8	0.9	1.3	1.4	2.6				-0.1	
2000 Q1	1.1	0.6	_	0.7	-1.2	2.0	1.1	0.3	-4.1				-1.2	
Q2	0.5	0.5	0.1	0.3	0.3	-0.6	-	1.6	2.3				1.6	
Q3	0.6	0.4	0.1	0.2	-1.1	1.3	0.3	0.2	0.6				1.9	
Q4	0.7	0.2	0.1	-0.2	0.7	-0.1	-	1.7	-1.3				0.6	
2001 Q1	0.7	0.4	0.3	0.6	-0.5	1.1	1.1	-0.5	_				-0.8	
Q2	-	0.4	0.1	-0.2	0.3	-0.8	-0.5	-1.8	0.3				0.4	
Q3	_	-0.3	0.1	-0.1	0.1	-1.0	-1.1	-1.2	0.0				1.7	
Q4	-0.1	-0.1	0.2	-	0.2	-0.3	-	-1.6	-1.0				-	
2002.04		0.4		0.0	4.0	0.0		0.0	0.2				0.4	
2002 Q1	0.2	-0.1	0.4	-0.2	1.2	-0.9	0.0	0.8	0.3				-0.4	
Q2	0.3	0.4	0.1	-0.1	-0.9	1.6	0.9	0.6	-0.3				0.6	
Q3 Q4	0.1 0.4	0.3	_	0.5	-0.8 0.1	0.9 -0.5	0.7	0.6 -0.5	-0.3 0.3				1.1 -0.4	
	-0.1	_	0.1	-1.1	1.5	-1.0	-0.4	-0.5	-0.3				-0.5	
2003 Q1		arevious i												
	change on							ILKE -0.5	ILKO					
Percentage	change on	310410431						-,-						
Percentage	change on p	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
Percentage 2002 Jun Jul	change on	370410431						1.0	-					
Percentage 2002 Jun Jul Aug	change on p	310410431						-1.2	-					
Percentage of 2002 Jun Jul Aug Sep	change on	, iovious						-1.2 0.5	-1.0					
Percentage of 2002 Jun Jul Aug Sep Oct	change on	, ionious						-1.2 0.5 -0.7	-1.0 1.0					
Percentage of 2002 Jun Jul Aug Sep Oct Nov	change on	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						-1.2 0.5 -0.7 0.6						
Percentage 2002 Jun  Jul Aug Sep Oct Nov Dec	change on p	, ionous						-1.2 0.5 -0.7 0.6 -0.4	1.0					
Percentage of 2002 Jun Jul Aug Sep Oct Nov Dec 2003 Jan	change on p	, ionous						-1.2 0.5 -0.7 0.6 -0.4	1.0 - - -1.0					
Percentage of 2002 Jun  Jul Aug Sep Oct Nov Dec  2003 Jan Feb	change on p	, ionous						-1.2 0.5 -0.7 0.6 -0.4 -0.4	1.0 - - -1.0 2.0					
Percentage ( 2002 Jun  Jul  Aug  Sep Oct  Nov Dec  2003 Jan  Feb Mar	change on p	,						-1.2 0.5 -0.7 0.6 -0.4 -0.4 -0.1	1.0 - - -1.0 2.0 -1.9					
Percentage of 2002 Jun Jul Aug Sep Oct Nov Dec 2003 Jan Feb	change on p	,						-1.2 0.5 -0.7 0.6 -0.4 -0.4	1.0 - - -1.0 2.0					

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Eamings = Average Wage Earnings (manufacturing), definitions of coverage
and treatment vary among countries
Empl = Total Employment not seasonally adjusted
Unempl = Standardised Unemployment not seasonally adjusted
Source: OECD - SNA93

			Co	ntribution to	o change in	GDP								
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	IoP	Sales	CPI	PP!	Earnings	Empl <sup>1</sup>	Unemp
Percentage c	hange on a	year earli	er											
	ILGC	HUDG	HUDH	HUDI	HUDJ	HUDK	HUDL	ILGW	ILHQ	ILAA	ILAJ	ILAS	ILIK	GADO
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 -0.6	-1.4	1.1 -0.7	2.0 -0.5	4.7 -3.5	5.5 4.8	3.4 2.8	4.1 0.7	3.5 3.2	2.5	4.0
2001 2002	0.3	1.7	0.6	-0.6	0.7	-0.7	0.6	-0.8	5.3	1.5	-0.6	3.2	-0.3	4.8 5.8
1999 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.
2000 Q1 Q2	4.2	3.4	0.4	1.6 1.4	-0.4 0.7	1.0 1.3	2.0	5.2 6.0	7.8 5.8	3.2	4.6	4.2 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.
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.
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.
Q3	-0.4	1.2	0.5	-0.9	-1.4	-1.3	-1.2	-4.6	3.8	2.7	0.6	3.4	_	4.
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	5.0
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	5.1
Q3 Q4	3.3	2.6 1.9	0.6	-0.2 0.2	0.9	0.3	1.1 1.6	0.8 1.5	7.0	1.5	-0.6 1.6	2.8 2.7	0.1	5.1
2003 Q1	2.0	1.7	0.5	0.1	0.4	0.3	1.0	1.1	4.4	2.9	3.9	2.7	1.0	5.8
	2.0		0.5					-0.3	6.2	1.1				
2002 Jun		,-		**	**		**				-1.6	3.3	-0.5	5.8
Jul		**		**	**	**		. 0.6	6.9	1.5	-0.6	2.5	-0.5	5.
Aug		**	**		••		••	0.6	6.5 7.6	1.8	-0.7	3.3	0.4	5.8
Sep	**		**	**		**	**	1.0	0.3	2.1	-0.5 1.5	2.5 3.3	0.4	5.
Nov							.,	1.8	3.5	2.2	1.5	2.5	0.3	5.9
Dec								1.5	5.3	2.3	1.9	2.4	0.3	6.0
2003 Jan		**	**				**	1.6	5.5	2.6	3.0	3.3	1.3	5.
Feb					-	-		1.4	2.6	3.0	4.3	2.4	0.7	5.8
Mar	**							0.4	5.2	3.1	4.6	2.4	0.9	5.8
Apr May	**	**		**	**	**		-0.6 -0.8	4.8 6.3	2.2	1.9	2.4	1.1	6.0
					**	••		0.0	0.0	2.0			0.7	0.
Percentage c	lLGM	HUDM	HUDN	HUDO	HUDP	HUDQ	HUDR	ILHG	ILIA				ILIU	
1999 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 Q4	0.1	0.6	0.1	-0.1	-0.3	0.3 -0.1	0.5 -0.1	0.1 -0.4	1.3				0.1	
				-0.1										
2001 Q1 Q2	-0.2 -0.4	0.4	0.2	-0.4	-0.9 -0.3	-0.2 -0.4	-0.3 -0.3	-1.6 -1.5	1.6 1.2				-0.7	
Q3	-0.4	0.2	0.1	-0.4	-0.5	-0.4	-0.5	-1.3	0.5				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	0.3	0.3	0.2	0.2	0.1	-0.2	0.3	-0.9	0.4				-0.4	
2003 Q1	0.4	0.3	-	-	-0.2	-	-0.3	-	1.1				-0.4	
Percentage of	hange on p	revious n	nonth					ILKG	ILKQ				ILLA	
2002 Jun								0.3	1.6				0.5	
Jul								0.7	1.4				0.3	
Aug								-0.2	0.4				-0.2	
								-0.1	-1.5				0.1	
Sep								-0.6 0.2	0.2				0.1	
Sep Oct								-0.8	1.8				-0.6	
Sep														
Sep Oct Nov Dec								0.6	0.4				_0.5	
Sep Oct Nov Dec 2003 Jan								0.6	0.4				-0.5 0.4	
Sep Oct Nov Dec 2003 Jan Feb								0.1	-2.1				0.4	
Sep Oct Nov Dec 2003 Jan														

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Earnings = Average Earnings (manufacturing), definitions of coverage and treatment vary among countries

EmpI = Total Employment not seasonally adjusted

UnempI = Standardised Unemployment rates: percentage of total workforce

Source: OFCD - SNA93

<sup>1</sup> Excludes members of armed forces

			Co	ntribution to	o change in	GDP								
	GDP	PFC	GFC	GFCF	ChgStk	Exports	less Imports	loP <sup>1</sup>	Sales	CPI	PPI	Earnings <sup>2</sup>	Empl	Unempl
Percentage c	hange on a	year earli	er											
	ILGD	HUCU	HUCV	HUCW	HUCX	HUCY	HUCZ	ILGX	ILHR	ILAB	ILAK	ILAT	ILIL	GADP
1998	-1.2	-	0.3	-1.1	-0.6	-0.2	-0.6	-5.9	-6.0	0.7	-1.5	-0.9	-0.6	4.1
1999	0.2	0.1	0.7	-0.2	-0.3	0.1	0.2	0.6	-2.6	-0.3	-1.5	-0.7	-0.8	4.7
2000	2.7	0.5	0.7	0.7	0.3	1.3	0.7	5.1	-1.1	-0.7	0.1	1.7	-0.3	4.7
2001	0.4	1.0	0.4	-0.3		-0.7		-6.2	-1.2	-0.7	-2.3		-0.5	5.0
2002	0.1	0.7	0.4	-1.3	-0.4	0.9	0.1	-1.3	-3.1	-1.0	-2.0	-1.0	-1.3	5.4
1999 Q4	-0.5	-0.9	0.7	0.2	-0.2	0.7	8.0	4.4	-1.1	-1.0	-0.6	-0.3	-0.2	4.6
2000 Q1	1.3	0.3	0.6		-0.1	1.2	0.7	3.5	-2.2	-0.6	0.6	1.9	-0.5	4.8
Q2	2.0	0.2	0.9	0.2	0.1	1.4	0.8	6.3	-1.5	-0.7	0.4	2.1	-0.4	4.7
Q3	2.7	4.5	0.8	0.9	0.5	1.3	0.8	5.4	-0.4	-0.6	0.7	1.7	-0.4	4.7
Q4	5.1	1.5	0.8	1.8	0.6	1.2	0.8	5.1	-0.4	-0.8	-0.7	1.1	0.2	4.7
2001 Q1	3.5	1.1	0.7	1.2	1.0	0.2	0.7	1.5	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	-4.4	-1.1	-0.7	-2.0	0.5	-0.4	4.9
Q3	-0.6	0.8	0.3	-0.4	-0.4	-1.0	-0.2	-9.1	-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	-12.3	-3.4	-1.0	-2.8	-0.6	-1.3	5.4
2002 Q1	-2.9	0.5	0.4	-2.3	-1.6	-0.3	-0.5	-9.2	-4.4	-1.4	-2.6	-1.5	-1.5	5.3
Q2	-0.3	0.5	0.4	-1.6	-0.4	0.8	-	-3.6	-2.6	-0.9	-2.2	-0.8	-1.6	5.4
Q3	1.5	1.2	0.5	-1.2	0.3	1.1	0.5	2.7	-2.7	-0.8	-2.2	-2.2	-1.0	5.4
Q4	2.4	8.0	0.2	-	0.3	1.8	0.7	5.9	-2.7	-0.5	-1.2	0.1	-1.1	5.4
2003 Q1	2.5	0.6	0.3	0.1	1.0	1.2	0.6	5.7	-1.2	-0.2	-0.9	1.8	-0.8	5.4
2002 Jun		-	**	-	**			-1.7	-3.4	-0.7	-2.1	-1.8	-1.4	5.4
Jul								0.7	-4.5	-0.8	-2.3	-4.9	-1.2	5.4
Aug								2.3	-1.1	-0.9	-2.3	-2.8	-1.1	5.5
Sep		**		**			**	5.1	-2.3	-0.7	-2.1	1.3	-0.7	5.4
Oct			**		**		**	5.2	-2.3	-0.9	-1.4	1.0	-0.8	5.5
Nov		**		**	**		41	6.8	-2.3	-0.4	-1.2	0.5	-1.3	5.3
Dec		**	**	**	**	"	**	5.4	-3.5	-0.3	-1.2	-1.3	-1.1	5.5
2003 Jan		**	**			**	**	8.0	-2.3	-0.4	-1.0	1.2	-1.0	5.5
Feb	**	**	**		47	**		4.9	40	-0.2	-0.9	1.7	-0.9	5.2
Mar	**	**	**	**			**	4.4	-1.2 -3.5	-0.1 -0.1	-0.8	2.5	-0.5	5.4
Apr May								3.4	-2.3	-0.1	-0.8 -1.0	1.5	-0.4 0.1	5.4 5.4
Percentage c	ILGN	HUDA	HUDB	HUDC	HUDD	HUDE	HUDF	ILHH	ILIB				ILIV	
1999 Q4	-1.0	-0.9	0.1	-	-	0.2	0.3	1.4	-0.7				-0.6	
2000 Q1	2.1	0.9	0.2	0.4	-	0.6	-	0.6	-0.7				-2.1	
Q2	1.0	0.1	0.4	0.1	0.3	0.3	0.3	2.6	0.4				2.3	
Q3 Q4	0.6 1.3	-0.1 0.5	0.2	0.4	0.1 0.1	0.2	0.2	0.7	0.8 -0.7				_	
2001 Q1	0.5	0.5	-	-0.2	0.4	-0.4	-0.1	-2.9	1.9				-1.8	
Q2	-1.3	0.1	0.1	-0.7	-0.5	-0.4	-0.2	-3.3	-2.9				1.4	
Q3 Q4	-1.2 -0.5	-0.3 0.4	0.1	-0.4 -1.0	-0.4 -0.1	-0.3 -0.2	-0.2 -0.2	-4.3 -2.5	-0.8 -1.5				-0.4 -0.5	
2002 Q1		0.3	0.1	-0.2	-0.6	0.6	0.1	0.5	0.8				-2.0	
Q2	1.3	0.2	0.1	-	0.7	0.7	0.3	2.8	-1.2				1.3	
Q3 Q4	0.6 0.4	0.4	0.1	0.2	0.4 -0.2	0.5	0.2	2.0 0.5	-0.8 -1.6				0.2 -0.6	
2003 Q1	0.1	0.1	0.1	-0.1	0.1	_	_	0.4	2.4				-1.7	
				-0.1	0.1			0.4	2.4				-1.7	
Percentage o	hange on p	previous n	nonth					ILKH	ILKR				ILLB	
2002 Jun								-1.1	-1.2				0.3	
Jul								1.0	-1.2				-	
Aug								0.3	2.4					
Sep								0.6	-1.2				-0.3	
Oct								0.1 -0.1	-1.2				-0.1	
Nov Dec								-0.1	1.2 -3.5				-0.1	
													0.0	
2003 Jan								1.7	3.7				-1.3	
Feb								-1.7	2.4				-0.2	
Mar								0.1	-2.3				1.1	
Apr								-1.2					0.7	
May									1.2				0.8	

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

IoP=Index of Production

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

	Export	of manufactu	ıres	Import	of manufact	ures	Ex	port of go	ods	lm	port of go	ods	Total tr	ade
	Total	OECD	Other	manufact- ures	goods									
Percentage c	hange on a	vear earlier												
rescentage	ILIZ	ILJA	ILJB	ILJC	ILJD	ILJE	ILJF	ILJG	ILJH	ILJI	اللاا	ILJK	ILJL	ILJM
1992	4.5	3.3	9.5 12.2	5.6	4.2 0.7	9.7 12.8	4.3	3.6	6.3 8.1	5.3	4.2	8.7	5.0	4.8
1993 1994	4.1 11.5	2.2 9.9	17.3	3.8 12.0	12.3	11.3	10.3	9.3	13.0	3.4 10.9	0.7 11.0	11.1	4.0	3.6 10.6
1995	10.2	9.9	11.2	10.6	10.1	12.0	9.4	9.3	9.1	9.9	9.0	12.4	10.4	9.6
1996	6.6	6.5	6.9	8.0	8.0	7.9	6.8	6.5	7.6	7.1	7.2	6.6	7.3	6.9
1997	12.1	11.9	12.9	11.7	11.3	12.7	11.2	11.0	11.7	10.3	9.7	11.9	11.9	10.8
1998 1999	5.2 6.4	6.3	1.2 7.2	6.1 7.9	9.5 10.8	-2.5 -0.3	4.8 5.6	5.6 5.7	2.2 5.4	5.5 6.5	8.1 9.0	-1.2 -0.5	5.6 7.1	5.1 6.1
2000	14.3	12.6	20.4	14.8	13.9	17.3	12.6	12.1	13.9	12.6	12.2	14.0	14.5	12.6
2001	-1.4	-1.1	-2.3	-0.2	-1.2	2.6	-0.3	-0.4	-0.2	0.4	-0.6	3.6	-0.8	-
2002	**	2.7			2.7			-1.2			-1.6			**
1996 Q3 Q4	6.9 8.6	6.7 8.2	7.3 9.7	8.1 9.0	8.8 8.9	6.3 9.4	7.1 9.2	6.6 8.9	8.3 9.9	6.8 8.3	7.7 8.5	4.6 7.8	7.5 8.8	6.9 8.7
1997 Q1	9.0	8.0	12.3	9.3	8.2	12.2	8.8	7.7	11.7	8.3	7.3	10.8	9.2	8.5
Q2	13.4	13.1	14.5	12.8	12.2	14.3	12.6	12.4	13.0	11.3	10.5	13.3	13.1	11.9
Q3	13.9	14.0	13.6	12.9	12.4	14.0	12.6	12.9	11.9	11.3	10.5	13.3	13.4	11.9
Q4	12.1	12.3	11.4	11.8	12.3	10.6	10.8	11.1	10.2	10.4	10.4	10.3	11.9	10.6
1998 Q1	10.1	11.2	6.4	10.0	12.6	3.6	9.5	10.8	6.0	9.0	11.0	4.1	10.0	9.2
Q2 Q3	5.7 2.9	6.9 4.2	1.7 -1.3	6.7 4.2	9.7 8.0	-1.1 -5.2	5.2	6.2	2.4 0.4	6.0	8.2 6.9	0.1 -3.5	6.2 3.6	5.6 3.2
Q4	2.2	3.4	-1.8	3.7	8.0	-7.0	2.0	2.7	0.2	3.3	6.6	-5.2	3.0	2.6
1999 Q1	1.9	2.8	-1.2	3.9	7.7	-6.3	1.7	1.8	1.3	3.3	6.2	-4.2	2.9	2.5
Q2	3.8	4.0	3.3	6.2	9.6	-3.3	3.7	3.7	3.7	5.1	7.9	-2.5	5.0	4.4
Q3 Q4	8.1 11.6	7.2 10.4	11.0 15.8	9.1 12.4	11.6 14.3	1.9 7.0	7.2 9.8	7.2 10.0	7.3 9.4	7.3	9.7 12.1	0.4 4.6	8.6 12.0	7.2 10.0
2000 04	45.5	40.5	20.5	44.7	45.0	40.7	40.5	40.4	40.7	10.5	40.0	40.0	45.4	
2000 Q1 Q2	15.5 16.1	13.5 13.9	22.5 24.2	14.7 15.7	15.0 15.1	13.7 17.8	13.5 13.8	13.4	13.7 15.7	12.5 13.4	13.3	10.2	15.1 15.9	13.0 13.6
Q3	14.4	12.7	20.3	16.1	14.7	20.3	12.7	12.0	14.6	13.9	12.9	16.9	15.2	13.3
Q4	11.6	10.5	15.3	12.6	11.1	17.4	10.5	10.1	11.6	10.8	9.5	14.7	12.1	10.7
2001 Q1	6.6	6.6	6.6	7.3	6.2	10.8	6.2	6.3	5.9	6.7	5.8	9.5	7.0	6.4
Q2 Q3	-0.1 -4.8	0.2 -4.4	-1.0 -6.3	1.0 -3.7	-0.1 -4.5	4.2 -1.2	0.7 3.0	0.7 -3.0	0.5 -2.9	1.4 -2.5	0.2 -3.6	4.9	0.5	1.0
Q4	-4.8 -6.8	-6.4	-7.8	-4.9	-5.8	-2.3	-4.9	-5.3	-4.0	-3.4	-3.6 -4.5	1.0 -0.4	-4.2 -5.8	-2.7 -4.2
2002 Q1	-3.8	-4.6	-1.3	-2.5	-3.7	1.0	-2.7	-3.8	0.4	-1.8	-3.1	1.9	-3.2	-2.2
Q2	3.6	2.8	6.1	2.9	2.2	5.0	3.5	2.6	5.7	2.6	1.9	4.6	3.2	3.0
Q3	7.7	6.5	11.7	6.3	5.9	7.2	6.7	5.6	9.6	5.4	5.1	6.3	7.0	6.1
Q4		6.3		**	6.8	**	**	- 22			••	**		**
2003 Q1		4				**			**			••		
Percentage of	hange on p	revious qua	rter ILJP	ILJQ	ILJR	ILJS	ILJT	ILJU	iLJV	ILJW	ILJX	ILJY	ILJZ	II IZA
1996 Q3	2.5	2.3	3.4	2.7	2.8	2.3	2.6	2.3	3.4	2.4	2.5	2.1	2.6	ILKA 2.5
Q4	2.9	2.8	3.2	2.7	2.2	3.9	3.0	3.0	2.9	2.5	2.0	3.7	2.8	2.7
1997 Q1	2.4	2.0	3.8	2.8	2.0	4.6	1.7	1.1	3.2	2.0	1.1	4.2	2.6	1.8
Q2	4.9	5.4	3.5	4.1	4.7	2.7	4.8	5.5	3.0	4.0	4.5	2.7	4.5	4.4
Q3 Q4	3.0 1.3	3.1 1.3	2.5 1.2	2.8 1.7	3.0 2.0	2.1	1.3	2.8 1.3	2.3 1.3	2.3	2.4	2.1 0.9	2.9 1.5	2.5 1.5
1998 Q1	0.6	1.0	-0.9	1.1	2.3	2.0	0.4	0.9	-0.7					
Q2	0.8	1.3	-1.1	1.0	2.1	-1.8	0.4	1.1	-0.7	0.8	1.7	-1.6 -1.2	0.8	0.6
Q3 Q4	0.3	0.5	-0.5	0.4	1.4	-2.2	0.1	-	0.3	0.4	1.2	-1.6	0.4	0.3
		0.6	0.6	1.2	2.0	-1.2	0.8	0.7	1.1	1.0	1.7	-0.9	0.9	0.9
1999 Q1	0.3	0.4	-0.2	1.2	2.1	-1.2	0.1	-	0.4	0.8	1.3	-0.6	0.8	0.5
Q2 Q3	2.6 4.4	2.4 3.6	3.4 7.0	3.2	3.8	1.3	2.7 3.4	3.0	1.8	2.8	3.6 2.9	0.5	2.9 3.8	2.7 3.0
Q4	3.8	3.5	4.9	4.3	4.5	3.8	3.3	3.3	3.1	3.8	3.9	3.3	4.1	3.5
2000 Q1	3.8	3.3	5.6	3.2	2.7	5.0	3.5	3.2	4.3	2.9	2.3	4.7	3.5	3.2
Q2	3.2	2.8	4.8	4.2	3.9	4.9	3.0	2.7	3.7	3.6	3.5	4.0	3.7	3.3
Q3 Q4	2.8 1.3	2.5 1.5	3.7 0.5	3.5 1.2	2.9 1.2	5.2 1.3	1.3	2.3	2.7 0.5	2.9 1.0	2.6 0.8	3.9 1.4	3.1 1.3	2.7 1.1
2001 Q1 Q2	-0.8 -3.3	-0.3 -3.4	-2.4 -2.7	-1.6 -2.0	-1.9 -2.2	-0.9 -1.3	-0.6 -2.4	-0.4 -2.7	-1.0 -1.6	-0.9 -1.5	-1.2 -1.9	-0.4	-1.2 -2.6	-0.7
Q3	-2.1	-2.1	-1.8	-1.3	-1.7	-0.3	-1.3	-1.5	-0.8	-1.0	-1.9	-0.4	-2.6	-2.0 -1.1
Q4	-0.8	-0.7	-1.1	-0.1	-0.2	0.2	-0.7	-0.8	-0.6	-	-0.1		-0.4	-0.4
2002 Q1	2.3	1.6	4.5	0.9	0.3	2.5	1.8	1.2	3.4	0.7	0.2	2.3	1.6	1.2
Q2	4.2	4.1	4.6	3.4	3.7	2.5	3.7	3.8	3.7	3.0	3.2	2.3	3.8	3.3
Q3 Q4	1.9	1.4 0.8	3.4	1.9	2.0 0.6	1.8	1.8	1.4	2.9	1.7	1.8	1.6	1.9	1.8
											,	.,	.,	
2003 Q1	**			**		**		44		***				

Data used in the World and OECD aggregates refer to Germany after unifi-cation

## Regional Economic Indicators - August 2003

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## Overview

Labour Force Survey data paints a fairly mixed picture across regions in 2003 quarter one but broadly shows growth. Data from employees jobs on the other hand shows employment declining in every region in March 2003. There were also small increases in long-term unemployment across all regions in the three months to June 2003. Industrial production contracted in the first quarter of 2003 in all countries of the UK. In line with this picture, external data shows that businesses in nearly all regions are generally less optimistic over the past four months to April 2003 than they were in January 2003. Annual house prices until recently showed very strong increases in all regions, but there is now evidence of falls in the latest period in many regions.

## GDP at basic prices

Tables 1 to 4 concern National Accounts statistics for the regions.

In Table 1, London and the South East together accounted for 31.7 per cent of the UK's total GDP in 1999, with contributions of 15.9 per cent and 15.8 per cent respectively. For the South East this was a significant increase from 14.8 per cent in 1989. The other region to grow significantly faster than the average was Northern Ireland, which posted an 82.3 per cent increase in value terms from 1989 to 1999, although this only accounted for 2.2 per cent of the UK's total GDP in 1999. In 1999 overall GDP at basic prices rose by 3.8 per cent, compared to 6.1 per cent in 1998 (figure 1). The highest annual rate of increase in 1999 was in the South East at 5.1 per cent.

Figure 1
GDP: UK, England, Wales, Scotland & Northern Ireland
growth, year on previous year

percentage change, 1997 to 1999



Table 2 compares GDP per head per region and on that basis it shows

that London remains the richest region and the North East the poorest. The growth rate was the highest in the South East, at 4.1 per cent. The other areas that grew above the UK average of 3.4 per cent were Yorkshire and the Humber, the West Midlands, the East and Wales. London, with one of the highest growth rates in GDP between 1997 and 1998 had the lowest growth rate in GDP per head of all the regions in 1999.

Table 3 shows how household disposable income per head increased in the UK in 1999 by 4.6 per cent compared to an increase of 1.9 per cent in 1998. London recorded the highest value in 1999 of £12,207 followed by the South East with £11,055, which continues medium term trends. Looking at annual percentage changes, Scotland recorded the largest rise of 7.8 per cent in 1999, while Yorkshire and the Humber was the slowest growing region, with growth of 2.4 per cent in 1999. Other slower growing regions were the South East, with 3.3 per cent, London, with 3.4 per cent, and the South West with growth of 3.6 per cent in 1999. Significant acceleration in the rates of increase in 1999 compared to 1998, of more than 4.5 per cent, was seen in the North East and Scotland, whilst growth slowed in the Yorkshire and Humber region.

Table 4, shows individual consumption expenditure per head, with London again recording the highest monetary value of £12,250 in 1999, followed by the South East with £11,392 and the North East having the lowest expenditure. Looking at annual percentage changes, London also recorded the largest rise in consumption with growth of 8.8 per cent in 1999, while the North East recorded a decline of 1.0 per cent in the same period, compared to an increase of 4.4 per cent in 1998.

## The Labour Market

Tables 5 to 11 concern the labour market. Tables 6, 8 and 9 are seasonally adjusted; tables 5, 7, 10 and 11 are not.

The **total in employment** (from the Labour Force Survey), table 9, in the UK grew by 0.2 per cent in 2003 quarter one down from growth of 0.5 per cent in the previous quarter. This however masks a quite varied performance at the regional level with the North West, the West Midlands, the East and London showing falls in employment of 0.1 per cent, 0.2 per cent, 0.7 per cent and 0.8 per cent respectively. The highest growth in employment of 3.1 per cent was in Northem Ireland. On an annual basis, most regions showed growth in the year to the first quarter, with the exception of the North East and the East and the South East. Northem Ireland recorded the highest growth for the period of 6.6 per cent. The other country that saw high annual growth (as it also did in the year to the fourth quarter) was Wales recording growth of 5.5 per cent.

Employee jobs (from Employers Surveys), in table 11 unlike the figures complied from the Labour Force Survey (LFS) shows employment in the UK declining in every region in March 2003 compared with December 2002 possibly due to seasonal effects and the survey does not take into account the self employed. Also, in the year to the first quarter more regions saw declines in employment than in the LFS, with the highest decline of 2.0 per cent occurring in the East Midlands. In the UK as a whole in the year to March 2003, there was a decline of 0.5 per cent with only the West Midlands and Wales showing lower declines.

The UK claimant count rate, table 8, was 3.1 per cent of the workforce in the UK in 2002 and has remained at that rate in the first half of 2003. Again, the national rate masked large variations between regions with the North East having the highest claimant count in June 2003 of 4.8 per cent. This region has had the highest count in every year since 1999. The North East is followed closely by Northern Ireland with 4.4 per cent.

Table 6 shows the rate of **ILO unemployment**. The rate stabilised at 5.1 per cent for most of 2002, except in quarter three when there was a slight increase to 5.3 per cent. The first quarter of 2003 also saw the rate at 5.1 per cent. However, there was a high degree of volatility in the latest quarters at the regional level and the differences in their rates are also fairly marked. There were increases in unemployment in 2003 quarter one in the West Midlands, the East and London. The largest decline in the unemployment rate was seen in the North East, where the rate fell by 1.1 percentage points, but this still leaves it with one of the highest rates.

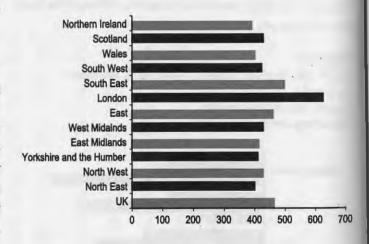
The Long-term claimant count rates as a percentage of the unemployed, table 7, shows there has been a rise of 0.2 percentage points in every month since February. Between May and June, there were increases, mostly small, in most regions. The South East had the highest increase of 0.5 percentage points. The only area to show a fall was Northern Ireland. Comparing June 2003 with June 2002 shows all regions' counts fell over the year except the South East which increased by 0.4 percentage points. In terms of rates, Northern Ireland has the

highest of 21.8 per cent (although it has reduced this from 26.2 per cent in June 2002) followed by London with 19.3 per cent. The South West has the lowest count of 11.8 per cent.

Table 10 shows **redundancy rates** in the government office regions. In the UK there was a small reduction in the redundancy rate between Spring 2002 and Spring 2003. There were also reductions across some areas: Yorkshire and the Humber, the West Midlands, the East, London, the South West and Scotland. Regions with small increases were the North West and the South East

Total average gross weekly pay (from the annual New Earnings Survey), in table 5, shows London having the highest pay of £624 a week in April 2002, up from £596 a year ago, an increase of 4.8 per cent (figure 2). Areas where the rate of growth increased by 5 per cent or more were the South East (5.1 per cent) and Scotland (5.5 per cent), the North East (5.2 per cent) and the East Midlands (5.0 per cent). However, the rates of increase in 2002 are generally lower than those seen in 2001, when the UK average was 5.8 per cent and more regions had growth rates of 5.0 per cent and above. In the year to April 2002, the West Midland's weekly pay increased by 2.4 per cent, the lowest of all the regions, although this followed the highest rate of growth in the year to April 2001, with a rate of 7.8 per cent.

Figure 2
Total average gross weekly pay
2002 April
seasonally adjusted

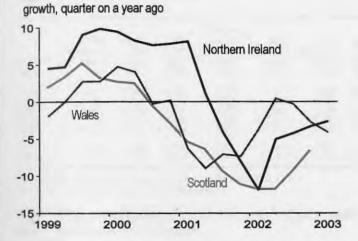


## Industrial Production and Construction

For UK industrial production output, table 12, figures for the UK, Northern Ireland and Wales extend to 2003 quarter one, while data for Scotland extends to 2002 quarter four (figure 3). Overall production was declining at the end of 2002, following a degree of recovery earlier in the year. This trend has continued into 2003 with the index for the UK

contracting by 0.4 per cent in quarter one having contracted by 0.8 per cent in the previous quarter. Overall in 2002 the index contracted by 3.6 per cent in the UK accelerating from a 2.2 per cent decline in 2001. In Wales, the index also contracted by 1.7 per cent in quarter one following a contraction of 2.6 per cent in the previous quarter. In 2002, the index fell 1.6 per cent and by 10.0 per cent and 6.3 per cent in Scotland and Northern Ireland respectively. The quarterly contraction in the latter was 1.2 per cent in the first quarter of 2003.

Figure 3 Index of production



**UK construction output**, table 13, fell by 1.9 per cent in 2003 quarter one following an equivalent rise in the previous quarter. Growth in this sector had been strong in recent years, in 2002; the index for the UK the index grew by 7.5 per cent. Data for Scotland and Northern Ireland only extends to quarter four of last year and shows construction in Scotland expanding slightly by 0.3 per cent following growth of 1.5 per cent in the previous quarter. During this same period growth in the index for Northern Ireland was negative 1.0 per cent and 3.1 per cent respectively. Construction output in Wales on the other hand has shown growth in quarter one of 1.5 per cent following growth of 3.7 per cent in the previous quarter. Overall in 2002, the index grew by 12.2 per cent in Wales.

## Manufacturing

Almost all CBI data is presented on the basis of government office regions. However, London and the South East are combined.

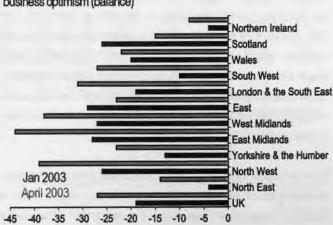
Tables 14 to 18 show that CBI/BSL balances reveal a fairly consistent picture across regions regarding in business optimism and in the volumes of new orders in its latest survey.

Table 14 shows that businesses in most regions were substantially less **optimistic about the business situation** in the April 2003 survey than the January 2002 survey (figure 4), with most regions also being

less optimistic than in the October survey. The regions where optimism decreased significantly were the East Midlands, the South West and the North West.

UK manufacturing output, as measured by CBI/BSL balances for **volume** of output in table 15, shows a generally more mixed picture. A few regions reported improvements but the majority reported deterioration in the volume of output over the past four months, looking ahead the picture is little changed with more firms in the regions expecting falls than rises. Output is anticipated to rise only in the South West, Scotland and Northern Ireland, although some regions indicated slower declines.

Figure 4
Manufacturing industry
business optimism (balance)



The overall CBI/BSL April 2003 balance for **volume of new orders**, table 16, shows a deterioration for the UK in the volume of new orders between January and April surveys and a similar picture across regions. The figures are volatile and those regions showing small recent increases generally have had large falls in earlier surveys. Looking ahead to the next four months, shows the balance of opinion across regions differing with the North East, the East, London and the South East, Wales and Northern Ireland expect an increase in the volume of new orders and the other regions expect a decrease.

Volume of new export orders, table 17, for the next four months is showing a more mixed outlook across the regions from the April survey. Broadly the figures show continuing decline, although there has been reductions in the extent of the deterioration in most cases. Only in Yorkshire and the Humber was the balance of opinion positive about the volume of orders in the past four months. Looking ahead, the picture on new export orders across the regions is still mixed but the majority expect the decline to continue. The exceptions are the North East, Yorkshire and the Humber, the East, London and the South East and Northern Ireland.

In line with the somewhat mixed picture on expectations regarding output

and expected workflow, the percentages of firms working below capacity, table 18, also shows variation across regions. In the UK as a whole, the number of firms working below capacity decreased from 74 per cent in January to 70 per cent in April, although this was slightly up from 67 per cent in October. Areas showing reductions were Yorkshire and the Humber, the East Midlands, the West Midlands, London and the South East, the South West and Scotland. All other areas showed an increase in the number of firms working below capacity, with Northern Ireland showing a significant increase from 51 per cent in January to 79 per cent in April. However, it should be noted that these figures are volatile.

## The Housing Market

In Table 20, UK **house prices** (not seasonally adjusted) fell in quarter one by 0.2 per cent following growth in the previous quarter of 2.1 per cent. Looking at the regions, shows that some also saw falls with the most significant being the North East where prices fell by 12.2 per cent, while growth slowed in most of the others, most notably in London where prices only increased by 0.4 per cent. Areas where growth over the quarter exceeded 2 per cent were Merseyside (6.7 per cent), the South West (2.3per cent) and Wales (8.6 per cent).

Data for the past 12 months shows a fairly similar story of house prices increasing though generally at lower rates. UK year-on-year growth in 2002 saw house prices increase by 17 per cent up from 8.6 per cent in the previous year and this was reflected in all regions. Areas with increases in house prices of over 20 per cent were Yorkshire and the Humber, East Midlands, West Midlands, the South West and Wales.

In Table 19 the number of **permanent dwellings started** fluctuates quite widely from quarter to quarter with a significant seasonal factor involved. Year-on-year growth to quarter one shows a mixed picture across the regions with some showing an increase in the number of permanent dwelling started and others showing a decrease.

## **Business Start-Ups**

VAT registrations and de-registrations, table 21, shows registrations outnumbering de-registrations by 12,700 for the calendar year 2001 which, is well up on the levels of 1999 and 2000, although well down on that recorded in 1998. In 2001 registrations outnumbered de-registrations in every region, except the North East, where there was a small net decline of 100 enterprises. The largest net gains were in London (2,800 businesses), the South East (3,900 businesses), the East (1,000 businesses) and the North West (1,400 businesses).

## Gross domestic product<sup>1</sup> at basic prices

Government Office Regions

£ million

	United Kingdom <sup>2</sup> (£m)	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
1989	TMPV	TMPW	TMPX	TMPY	TMPZ	TMQA	TMQB	TMQC	TMQD	TMQE	TMQF	TMQG	TMQH	TMQI
	452 437	17 156	49 365	34 848	30 439	37 956	45 885	68 907	66 979	34 118	385 653	19 007	38 448	9 329
1993	562 857	21 480	60 664	42 952	37 124	46 859	55 928	86 574	83 817	42 529	477 927	23 191	49 302	12 437
1994	593 931	22 074	63 938	44 752	39 023	49 577	59 824	91 118	88 936	44 607	503 851	24 463	52 273	13 344
1995	622 389	22 975	66 007	47 108	40 976	52 407	62 416	93 843	93 319	47 385	526 437	25 989	55 667	14 297
1996	657 775	23 755	68 937	50 043	44 184	54 851	66 484	99 490	100 614	50 128	558 483	27 017	57 338	14 936
1997	700 567	24 202	72 414	53 182	47 261	57 783	72 698	108 559	108 276	53 580	597 956	28 010	58 650	15 952
1998	743 314	25 294	75 275	55 457	49 413	61 130	77 962	118 499	116 024	56 064	635 117	29 541	62 153	16 501
1999	771 849	25 875	77 562	57 554	50 906	63 495	81 793	122 816	121 956	58 151	660 108	30 689	64 050	17 003

1 Based on the European System of Accounts 1995 (ESA95). 2 UK less Extra-Regio and statistical discrepancy.

Source: National Statistics

## Gross domestic product1 at basic prices: £ per head

**Government Office Regions** 

	United Kingdom <sup>2</sup>	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
1989	TMQJ	TMQK	TMQL	TMQM	TMQN	TMQ0	TMQP	TMQQ	TMQR	TMQS	TMQT	TMQU	TMQV	TMQW
	7 888	6 614	7 199	7 042	7 621	7 242	9 012	10 135	8 805	7 297	8 069	6 624	7 544	5 893
1993	9 671	8 216	8 783	8 563	9 102	8 855	10 772	12 494	10 834	8 927	9 852	7 978	9 614	7 610
1994	10 170	8 441	9 248	8 901	9 519	9 352	11 467	13 088	11 441	9 311	10 349	8 393	10 168	8 114
1995	10 619	8 796	9 547	9 354	9 944	9 869	11 889	13 406	11 918	9 828	10 771	8 900	10 818	8 654
1996	11 185	9 111	9 980	9 927	10 673	10 309	12 582	14 107	12 761	10 351	11 384	9 240	11 162	8 964
1997	11 871	9 301	10 494	10 541	11 371	10 845	13 657	15 266	13 634	11 008	12 141	9 562	11 429	9 507
1998	12 548	9 741	10 909	10 983	11 848	11 455	14 530	16 532	14 510	11 447	12 845	10 063	12 117	9 754
1999	12 972	10 024	11 273	11 404	12 146	11 900	15 094	16 859	15 098	11 782	13 278	10 449	12 512	10 050

1 Based on the European System of Accounts 1995 (ESA95). 2 UK less Extra-Regio and statistical discrepancy.

Source: National Statistics

## Household disposable income1: £ per head

**Government Office Regions** 

	United Kingdom <sup>2</sup>	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
	DEPZ	LRCG	LRCH	DEQB	DEQC	DEQH	LRCI	DEQE	LRCJ	DEQG	LREV	DEQJ	DEQK	DEQL
1989	5 560	4 908	5 239	5 208	5 280	4 934	6 097	6 549	6 110	5 638	5 643	4 994	5 355	4 729
1993	7 771	7 053	7 313	7 232	7 214	7 112	8 248	9 311	8 519	7 608	7 867	6 986	7 704	6 540
1994	8 019	7 095	7 536	7 417	7 569	7 391	8 540	9 612	8 873	7 767	8 127	7 235	7 773	6 959
1995	8 497	7 522	7 874	7 780	7 869	7 939	9 011	10 102	9 282	8 606	8 592	7 742	8 287	7 678
1996	8 938	7 972	8 334	8 323	8 401	8 313	9 484	10 650	9 814	8 915	9 070	8 056	8 541	7 834
1997	9 513	8 554	8 900	8 776	8 835	8 748	10 025	11 485	10 579	9 511	9 674	8 389	8 977	8 365
1998	9 696	8 585	9 008	9 106	8 935	8 981	10 147	11 811	10 698	9 725	9 862	8 529	9 154	8 500
1999	10 142	9 018	9 501	9 325	9 409	9 541	10 638	12 207	11 055	10 073	10 284	8 870	9 870	8 998

1 Based on the European System of Accounts 1995 (ESA95). 2 UK less Extra-Regio

Source: National Statistics



## Individual consumption expenditure<sup>1</sup>: £ per head

**Government Office Regions** 

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
1994	TLZI 7 441	TLZJ 6 676	TLZK 7 082	TLZL 7 081	TLZM 7 180	TLZN 6 920	TLZO 7 380	TLZP 8 799	TLZQ 8 424	TLZR 7 045	TLZS 7 539	TLZT 6 563	TLZU 7 334	THZZ 6 427
1995 1996 1997	7 762 8 268 8 776	6 973 7 391 7 744	7 336 7 798 8 331	7 306 7 758 8 177	7 583 7 939 8 370	7 364 7 705 8 128	7 915 8 514 8 963	9 011 9 485 10 248	8 697 9 333 9 938	7 408 8 049 8 584	7 865 8 365 8 895	6 997 7 722 8 041	7 537 8 007 8 488	6 775 7 188 7 463
1998	9 316	8 086	8 662	8 763	8 695	8 640	9 740	11 264	10 656	8 961	9 488	8 079	8 874	7 749
1999	9 864	8 003	9 321	8 907	9 057	9 262	10 077	12 250	11 392	9 600	10 057	8 206	9 459	8 281

<sup>1</sup> Based on the European System of Accounts 1995 (ESA95).

Source: National Statistics

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland	Northern Ireland
1993 Арг	DEOG 316.0	LRCO 286.2	LSHZ 299.1	DCQI 287.6	DCQH 285.5	DCQG 292.6	112.2	DCPI 408.8	LRCR 328.9	DCQF 298.8	DCQL 281.5	DCQM 297.6	DCQN 282.4
1994 Apr	324.7	294.6	307.7	297.0	292.5	300.1	322.8	420.6	339.4	306.9	290.5	301.9	286.5
1995 Apr	336.7	299.2	317.7	306.0	306.4	311.3	331.5	441.5	348.1	313.9	302.1	313.4	300.2
1996 Apr	350.2	315.2	329.5	316.8	318.5	323.9	347.7	455.0	367.1	325.3	313.3	325.2	306.2
1997 Apr	366.3	327.4	345.6	330.6	333.1	337.3	362.2	480.1	382.6	342.6	330.2	336.9	319.7
1998 Apr	383.1	338.7	363.3	345.2	350.3	359.8	380.3	504.5	406.3	354.6	342.8	350.0	332.6
1999 Apr	399.8	349.7	373.7	360.7	362.5	375.8	397.3	524.7	423.6	365.4	354.1	370.1	344.9
2000 Apr	418.1	368.0	389.0	375.1	374.4	387.2	416.2	561.7	443.3	380.6	368.4	383.0	360.4
2001 Apr	442.3	379.7	408.2	391.7	393.4	417.4	438.0	595.6	472.5	408.3	381.6	404.8	375.0
2002 Apr	462.6	399.3	426.8	409.9	413.0	427.3	459.6	624.1	496.7	421.7	399.7	427.0	390.1

<sup>1</sup> Average gross weekly earnings of full-time employees on adult rates whose pay for the survey pay-period was not affected by absence.

Sources: New Earnings Survey, National Statistics; Department of Economic Development, Northern Ireland

6

Unemployed as a percentage of the economically active population<sup>1</sup>, seasonally adjusted

**Government Office Regions** 

Percentages

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
	MGSX	YCNC	YCND	YCNE	YCNF	YCNG	YCNH	YCNI	YCNJ	YCNK	YCNL	YCNM	YCNN	MGXW
2000 Q1	5.8	8.9	6.1	6.4	5.1	6.1	3.9	7.5	3.5	4.2	5.5	6.7	7.6	6.5
Q2	5.5	8.8	5.4	6.1	4.8	6.1	3.6	7.3	3.3	4.3	5.3	6.1	7.0	6.6
Q3	5.3	8.8	5.4	5.9	4.8	5.8	3.7	6.9	3.1	4.1	5.1	6.6	6.7	5.6
Q4	5.2	7.9	5.3	6.1	4.7	5.9	3.6	6.7	3.4	3.9	5.1	5.8	6.3	6.2
2001 Q1	5.1	7.7	5.3	5.4	4.7	5.6	3.6	6.5	3.3	3.9	4.9	6.1	6.0	6.1
Q2	5.0	7.3	5.4	5.4	5.0	5.4	3.5	6.1	3.2	3.6	4.8	6.1	6.2	5.9
Q3	5.1	6.9	5.2	5.4	4.6	5.6	4.0	6.5	3.4	3.6	4.9	5.5	6.7	6.1
Q4	5.2	7.3	5.3	5.1	4.7	5.5	3.9	7.2	3.3	3.6	5.0	5.9	6.7	6.0
2002 Q1	5.1	7.3	5.4	5.0	4.8	5.6	3.7	6.8	3.5	3.4	4.9	5.7	6.6	6.0
Q2	5.1	6.3	5.6	5.2	4.5	5.5	3.7	6.7	3.9	3.7	4.9	5.7	6.4	5.4
Q3	5.3	6.2	5.5	5.5	4.7	6.0	3.8	7.0	4.0	3.9	5.1	5.2	6.4	6.3
Q4	5.1	7.5	5.0	5.1	4.8	5.6	3.9	6.5	4.0	4.0	5.0	5.3	6.2	5.7
2003 Q1	5.1	6.4	5.0	5.1	4.1	6.0	4.7	6.8	3.9	3.8	5.0	4.9	5.9	5.1

<sup>1</sup> Periods are calendar quarters.

Source: Labour Force Survey, National Statistics

7

Long-term claimant count as a percentage of the unemployed<sup>1</sup> (those out of work for 12 months or more)

**Government Office Regions** 

Percentages

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland	Northern Ireland
	LRFN	LRFO	LSIA	LRFR	LRFS	LRFT	LRFU	LRFV	LRFW	LRFX	LRFY	LRFZ	LRGA
2002 May	16.7	18.1	16.6	15.8	15.9	19.2	12.7	19.7	11.6	12.9	16.1	14.2	27.4
Jun	16.7	18.1	16.6	15.7	16.1	19.0	12.8	19.6	11.8	13.1	16.3	14.1	26.2
Jul	16.2	17.7	16.2	15.2	15.7	18.2	12.4	19.3	11.6	12.8	15.6	13.5	23.8
Aug	15.9	17.7	15.9	14.9	15.2	17.6	12.1	19.2	11.4	12.3	15.1	13.4	23.3
Sep	16.1	18.1	16.3	14.9	15.4	17.7	12.3	19.2	11.7	12.6	15.2	14.2	23.3
Oct	16.3	18.2	16.6	15.2	15.6	17.9	12.5	19.3	12.0	12.6	15.6	14.4	23.9
Nov	16.0	17.6	16.3	14.8	15.1	17.6	12.3	19.3	11.8	12.3	15.3	14.2	23.2
Dec	15.7	17.0	15.8	14.3	14.5	17.1	12.2	19.3	11.9	11.7	14.8	14.1	22.8
2003 Jan	14.8	15.6	14.6	13.4	13.4	16.1	11.5	19.3	11.3	10.9	13.8	12.9	22.1
Feb	14.4	15.2	14.4	13.0	12.9	15.6	10.9	18.9	10.9	10.5	13.3	12.6	21.9
Mar	14.6	15.1	14.6	13.0	13.1	15.6	11.1	18.9	11.0	10.8	13.5	13.0	22.0
Apr	14.8	15.0	14.7	13.3	13.1	15.7	11.4	19.0	11.3	11.2	13.7	13.1	22.3
May	15.0	14.9	15.0	13.5	13.2	15.8	11.6	19.3	11.7	11.6	14.1	13.2	22.3
Jun	15.2	15.2	15.1	13.7	13.6	15.9	12.0	19.3	12.2	11.8	14.5	13.2	21.8

<sup>1</sup> Computerised claims only.

Source: National Statistics

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland	Northern Ireland
-	BCJE	DPDM	IBWC	DPB!	DPBJ	DPBN	DPDP	DPDQ	DPDR	DPBM	DPBP	DPBQ	DPBR
1999	4.2	7.1	4.6	5.0	3.7	4.5	2.9	4.5	2.3	3.1	5.0	5.1	6.4
2000	3.6 3.2 3.1	6.3	4.1	4.4	3.4	4.0 3.7	2.4	3.7	1.9	2.5	4.4	4.6	5.3
2001 2002	3.2	5.7	3.7	4.0 3.7	3.1	3.7	2.1	3.3	1.6	2.1	4.0	4.0	4.9
2002	3.1	5.2	3.6	3.7	2.9	3.5	2.1	3.6	1.7	2.0	3.6	3.9	4.5
2002 Jun	3.1	5.3	3.6	3.7	2.9	3.5	2.1	3.6	1.7	2.0	3.7	3.9	4.6
Jul	3.1	5.3	3.6	3.7	2.9	3.5	2.1	3.6 3.6	1.7	2.0	3.6	3.9	4.5
Aug	3.1	5.2	3.5	3.6 3.7	2.9	3.5	2.1	3.6	1.7	2.0	3.6 3.6	3.8	4.4
Sep	3.1	5.2	3.5	3.7	2.9	3.5	2.1	3.6	1.7	1.9	3.7	3.8	4.4
Oct	3.1	5.1	3.5	3.6 3.6 3.6	2.9	3.5	2.1	3.6	1.7	1.9	3.6	3.8	4.4
Nov	3.1	5.0	3.5	3.6	2.9	3.5	2.1	3.6	1.7	1.9	3.6	3.8	4.4
Dec	3.1	4.9	3.5	3.6	2.8	3.5	2.1	3.6	1.7	1.9	3.6	3.8	4.4
2003 Jan	3.1	4.9	3.5	3.6 3.6	2.8	3.5	2.1	3.6	1.7	1.9	3.6	3.8	4.4
Feb	3.1	4.9	3.5	3.6	2.8	3.6	2.2	3.6	1.7	1.9	3.5	3.8	4.3
Mar	3.1	4.9	3.4	3.5	2.9	3.6	2.2	3.7	1.7	1.9	3.5	3.8	4.3
Apr	3.1	4.8	3.4	3.5	2.9	3.6	2.2	3.7	1.8	1.9	3.5	3.8	4.3
May	3.1	4.9	3.4	3.6 3.6	2.9	3.6	2.2	3.7	1.8	1.9	3.6	3.8	4.4
Jun	3.1	4.8	3.4	3.6	3.0	3.6	2.2	3.7	1.8	2.0	3.6	3.8	4.4

Source: National Statistics

## Total in employment<sup>1,2</sup>, seasonally adjusted Government Office Regions

Thousands

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
	MGRZ	YCJP	YCJQ	YCJR	YCJS	YCJT	YCJU	YCJV	YCJW	YCJX	YCJY	YCJZ	YCKA	YCPT
2000 Q1	27 187	1 057	2 998	2 237	1 987	2 404	2 613	3 311	4 024	2 356	22 987	1 214	2 301	692
Q2	27 294	1 069	3 0 1 9	2 270	1 997	2 397	2 637	3 311	4 030	2 345	23 075	1 228	2 321	680
Q3	27 350	1 066	2 998	2 272	1 979	2 398	2 658	3 323	4 017	2 384	23 096	1 234	2 338	691
Q4	27 336	1 059	3 002	2 269	1 970	2 390	2 680	3 320	4 011	2 356	23 057	1 233	2 353	697
2001 Q1	27 428	1 062	3 016	2 263	1 965	2 409	2 695	3 365	4 019	2 361	23 155	1 229	2 348	699
Q2	27 512	1 065	3 032	2 256	1 971	2 409	2 680	3 404	4 030	2 380	23 228	1 221	2 357	708
Q3	27 487	1 067	2 982	2 263	1 990	2 412	2 668	3 409	4 038	2 386	23 217	1 219	2 343	714
Q4	27 559	1 066	3 0 1 6	2 261	1 993	2 439	2 684	3 405	4 050	2 393	23 308	1 219	2 338	700
2002 Q1	27 576	1 070	3 011	2 274	1 991	2 435	2 688	3 393	4 065	2 393	23 320	1 221	2 335	707
Q2	27 698	1 069	3 006	2 275	2 013	2 448	2 690	3 425	4 059	2 410	23 396	1 238	2 352	720
Q3	27 662	1 070	3 003	2 273	2 027	2 430	2 687	3 404	4 042	2 410	23 347	1 252	2 355	718
Q4	27 812	1 053	3 064	2 276	2 018	2 444	2 678	3 432	4 061	2 412	23 436	1 277	2 377	731
2003 Q1	27 859	1 060	3 062	2 298	2 025	2 438	2 658	3 406	4 063	2 422	23 432	1 288	2 390	754

Includes employees, the self-employed, participants on Government-sup-ported employment and training schemes and unpaid family-workers.
 Periods are calendar quarters.

Source: Labour Force Survey, National Statistics

## Redundancies, not seasonally adjusted<sup>1</sup> **Government Office Regions**

Rates<sup>2</sup>

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland	Northern Ireland
	DITA	LRDH	LRDI	DCXF	DCXG	DCXL	LRDJ	DCXI	LRDK	DCXK	DCXN	DCXO	DITB
Winter 1998	9	16	9	6	8	9	6	10	8	9	12	11	_3
Spring 1999	8	_3	9	9	_3	11	8	6	7	7	10	10	_3
Summer 1999	7	_3	9	9	8	8	7	4	6	7	_3	8	_3
Autumn 1999	7	_3	10	6	9	6	6	6	7	8	_3	6	_3
Winter 1999	8	11	8	7	11	10	6	7	7	6	15	9	_3 _3 _3
Spring 2000	7	10	7	9	8	8	4	7	6	8	_3	10	_3
Summer 2000	6	_3	7	5	9	7	5	4	7	8	_3	6	_3
Autumn 2000	7	_3	8	7	7	8	6	6	6	6	_3	7	_3
Winter 2000	7	_3 _3	9	6	7	9	5	6	6	8	9	6	_3
Spring 2001	7	_3	8	5	8	8	6	7	5	7	_3	10	_3
Summer 2001	7	_3	8	7	7	B	9	- 5	7	5	_3 _3	8	_3
Autumn 2001	8	10	9	10	7	6	7	8	9	6	_3	7	_3 _3 _3
Winter 2001	9	12	10	5	8	9	B	8	10	8			_3
Spring 2002	8	12 _3 _3	8	5	8	11	10	7	8	7	10	8	_3
Summer 2002	7	_3	7	8	7	10	7	7	6	8	_3	8	_3
Autumn 2002	7	_3	6	6	9	6	7	6	8	7	_3	7	_3 _3
Winter 2002	8	10	7	6	7	10	7	7	7	5			_3
Spring 2003	6	_3	8	7	7	8	6	4	8	5	12	6	_3

<sup>1</sup> The method of calculating redundancy estimates back to spring 1995 has changed from that used to calculate data previously published in this table Thus the data in this table are not comparable to those previously published. See pp225-229 of the May 2000 Labour Market Trends for more informa-tion.

Source: Labour Force Survey, National Statistics

Redundancies per 1,000 employees.
 Sample size too small to provide a reliable estimate.

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland	Northern Ireland
1999 2000 2001 2002	YEKA 105.3 107.2 108.2 108.1	YEKB 100.1 116.5 117.3 115.7	YEKJ 106.5 101.8 100.6 102.3	YEKC 104.0 109.1 110.0 110.4	YEKD 103.7 110.7 112.1 110.5	YEKI 101.9 107.2 108.1 108.5	YEKE 106.2 106.5 109.6 111.0	YEKF 111.9 102.0 102.1 102.7	YEKG 107.7 104.0 104.1 103.7	YEKH 104.7 105.3 105.1 105.1	YEKK 104.8 106.0 106.2 105.8	YEKL 102.0 103.5 106.5 106.6	YEKM 106.3 108.7 110.2 111.3
2001 Sep Dec	108.4 108.8	100.6 102.4	108.7 108.9	105.2 105.7	104.6 104.9	102.1 102.9	110.6 111.1	117.4 117.1	110.8 111.5	110.3 110.7	106.2 106.1	106.7 107.4	110.1 112.2
2002 Mar Jun Sep Dec	107.8 107.9 108.0 108.5	101.3 101.7 102.6 103.5	107.7 108.0 108.6 109.3	104.3 104.2 105.3 106.2	103.8 103.6 103.5 103.7	102.4 102.2 102.7 103.3	110.4 110.4 110.3 110.6	115.7 115.4 115.4 116.5	110.5 110.7 110.0 110.1	110.1 110.9 111.1 110.9	105.0 105.9 105.9 105.9	106.6 106.2 106.1 106.3	111.6 111.9 111.9 113.7
2003 Mar	107.3	102.8	108.0	104.9	101.7	102.0	109.5	115.1	109.6	108.9	104.8	105.1	112.7

Source: National Statistics

# 12 Index of industrial production<sup>1</sup>

Seasonally adjusted 1995 = 100

	United Kingdom	Scotland	Northern Ireland	Wales
The same	CKYW	LRFK	LRFL	TMQX
1999	104.2	115.3	118.3	100.9
2000	105.9	115.8	128.0	103.1
2001	103.6	106.5	126.9	95.4
2002	99.9	95.9	118.9	93.9
2000 Q1	104.8	116.8	124.5	104.5
Q2	106.2	117.1	125.6	103.8
Q3	106.4	115.8	130.3	101.9
Q4	106.3	113.4	131.5	102.0
2001 Q1	105.7	110.5	134.6	97.9
Q2	104.3	109.6	127.0	94.5
Q3	103.4	105.0	124.9	94.7
Q3 Q4	101.0	100.8	120.9	94.7 94.5
2002 Q1	99.8	97.5	118.6	94.2
Q2	100.0	96.7	120.6	94.9
Q3	100.4	95.2	119.6	94.4
Q4	99.6	94.2	116.9	91.9
2003 Q1	99.2		115.5	90.3

1 The index of industrial production has been rebased from 1990=100 to 1995=100. Figures on the 1990=100 base are not being continued

Sources: National Statistics; Scottish Executive; Department of Enterprise, Trade & Investment Northern Ireland;

# 13 Index of construction<sup>1</sup>

Seasonally adjusted 1995 = 100

	United Kingdom	Scotland	Northern Ireland	18/-1
	Kingdon	Scotland	Ireland	Wales
	GDQB	LRZR	LRFM	TMQY
1999	107.8	101.6		93.0
2000	109.7	109.3		86.3
2001	113.7	106.4	••	80.5
2002	122.2	103.3	**	80.5 90.3
		100.0	**	30.0
2000 Q1	112.1	114.9	109.4	85.9
Q2	109.7	105.2	121.2	91.4
Q3	107.9	107.3	114.9	91.4 86.8
Q4	109.2	109.5	113.2	81.3
			1,	
2001 Q1	111.5	110.4	119.2	82.2
Q2	113.1	108.5	118.7	82.2 74.4
Q3	114.1	104.7	118.1	82.2
Q4	116.1	102.0	116.5	83.4
2002 Q1	119.6	101.4	112.4	86.5
Q2	120.9	102.8	117.9	89.8
Q3	123.1	104.3	114.22	90.8
Q4	125.4	104.6	114.2 <sup>2</sup> 113.1 <sup>3</sup>	89.8 90.8 94.2
2003 Q1	123.0	44	**	95.6

 <sup>1</sup> The Index of construction has been rebased from 1990=100 to 1995=100.
 Figures on the 1990=100 base are not being continued
 2 Revised.

3 Provisional.

Sources: National Statistics; Scottish Executive; Department of Finance and Personnel, Northern Ireland

# Manufacturing industry: optimism about business situation Government Office Regions (London and the South East is still on an SSR basis)

Balance<sup>1</sup>

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London and the South East	South West	Wales	Scotland	Northern Ireland
-	DCMO	LRYS	LRYT	DCMU	DCMT	DCMS	LRYU	DCMP	DCMR	DCMX	DCMY	DCMZ
2002 Jul	4	-12	14	12	-4	-3	-20	-8	10	-1	-7	-6
Oct	-19	-11	-18	-9	3	-20		-18	-37	-15	-18	-7
2003 Jan	-19	<del>-4</del>	-26	-13	-28	-27	-29	-19	-10	-20	-26	-4
Apr	-27	-14	-39	-23	-44	-38	-23	-31	-27	-22	-15	-8

1 Balance in percentage of firms reporting rises less those reporting falls.

Source: CBI/BSL Regional Trends Survey ISSN:0960 7781

## 15 Manufacturing industry: volume of output

Government Office Regions (London and the South East is still on an SSR basis)

Balance<sup>1</sup>

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London and the South East	South West	Wales	Scotland	Northern Ireland
Past 4 months	DCLQ	LRYV	LRYW	DCLW	DCLV	DCLU	LRYX	DCLR	DCLT	DCLZ	DCMA	DCMB
2002 Jul	-10	1	7	-17	-12	-8	-9	1	-8	6	4	-4
Oct	-12	-17	-2	-20	6	-8	-26	-19	-17	12	1	24
2003 Jan Apr	-7 -12	13 3	-25 -26	-23 -25	-10 -18	-26 -5	-7 -6	-11	22 -13	9 -14	-7 3	10
Next 4 months	DCMC	LRYY	LRYZ	DCMI	DCMH	DCME	LRZA	DCMD	DCMF	DCML	DCMM	DCMN
2003 Apr	-10	-3	-2	-10	-12	-27	-3	-2	2	-8	9	32

<sup>1</sup> Balance in percentage of firms reporting rises less those reporting falls.

Source: CBI/BSL Regional Trends Survey ISSN:0960 7781

# 16 Manufacturing industry: volume of new orders Government Office Regions (London and the South East is still on an SSR basis)

Balance<sup>1</sup>

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London and the South East	South West	Wales	Scotland	Northern Ireland
Past 4 months	DCNA	LRZB	LRZC	DCNG	DCNF	DCNE	LRZD	DCNB	DCND	DCNJ	DCNK	DCNL
2002 Jul	-11	-5	8	-17	-17	-17	-1	3	-22	6	-3	6
Oct	-16	7	1	20	3	-6	-28	20	-35	-8	-2	8
2003 Jan	-9	22	-18	-2	-13	-12	-12	-6	-5	-24	-19	38
Apr	-21	-2	-32	-10	-26	-14	-25	-12	-21	-23	-5	1
Next 4 months	DCNM	LRZE	LRZF	DCNS	DCNR	DCNQ	LRZG	DCNN	DCNP	DCNV	DCNW	DCNX
2003 Apr	-17	20	-20	-6	-31	-22	4	3	29	6	-4	26

<sup>1</sup> Balance in percentage of firms reporting rises less those reporting falls.

Source: CBI/BSL Regional Trends Survey ISSN:0960 7781

# Manufacturing industry: volume of new export orders Government Office Regions (London and the South East is still on an SSR basis)

Balance<sup>1</sup>

United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London and the South East	South West	Wales	Scotland	Northern Ireland
DCNV	I D7L	1.071	DOOE	DCOD	DCCC	1971	DCN7	DCOR	DCON	DCOL	DCOJ
		11					-1		-1	9	11
-19	6	-	2	13	-4	-29	-25	-26	-9	-23	13
-21	15	-14	-16	-18	-8	-20	-17	-22	-34	-24	-5
-21	-15	-30	2	-16	-26	-14	-3	-37	-29	-28	-2
	. bredo										
									-		DCOV
	Kingdom DCNY -14	DCNY LRZH -14 -1 -19 6 -21 15 -21 15 DCOK LRZK	Kingdom         East         West           DCNY         LRZH         LRZI           -14         -1         11           -19         6         -           -21         15         -14           -21         -15         -30           DCOK         LRZK         LRZL	United Kingdom         North East         North West         and the Humber           DCNY         LRZH         LRZI         DCOE           -14         -1         11         -11           -19         6         -         2           -21         15         -14         -16           -21         -15         -30         2           DCOK         LRZK         LRZL         DCOQ	United Kingdom   East West   West Humber   Midlands	United Kingdom   North Kest   West   Humber   Midlands   Midlands	United Kingdom   North East   West   West   Humber   Midlands   Midlands   East   West   Midlands   East   West   Midlands   East   West   Midlands   East   Midlands   East   Midlands   East   Midlands   East   Midlands   East   East   East   East   Midlands   East   East   East   Midlands   East   East	United Kingdom   North East   West   West   West   West   Humber   Midlands   Midlands   East   South East	United Kingdom   North Kingd	United Kingdom         North East         North West         And the Humber         East Midlands         West Midlands         Heast South East         South East West West Water           DCNY         LRZH         LRZI         DCOE         DCOD         DCOC         LRZJ         DCNZ         DCOB         DCOH           -14         -1         11         -11         -33         -21         -13         -1         -43         -1           -19         6         -         2         13         -4         -29         -25         -26         -9           -21         15         -14         -16         -18         -8         -20         -17         -22         -34           -21         -15         -30         2         -16         -26         -14         -3         -37         -29           DCOK         LRZK         LRZL         DCOQ         DCOP         DCOO         LRZM         DCOL         DCON         DCOT	United Kingdom   East   West   West

<sup>1</sup> Balance in percentage of firms reporting rises less those reporting falls.

Source: CBI/BSL Regional Trends Survey ISSN:0960 7781

# 18 Manufacturing industry: firms working below capacity Government Office Regions (London and the South East is still on an SSR basis)

P	erc	en	ta	ae
	~			3-

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London and the South East	South West	Wales	Scotland	Northern
2000 1	DCOW	LRZN	LRZO	DCPC	DCPB	DCPA	LRZP	DCOX	DCOZ	DCPF	DCPG	DCPH
2002 Jul	67	92	53	70	62	55	66	73	56	64	44	54
Oct	67	74	63	81	53	63	66	66	67	52		70
2003 Jan	74	76	64	79	72	73	65	· 72	70	54	59	51
Apr	70	77	79	74	69	66	66		64	67	58	79

Source: CBI/BSL Regional Trends Survey ISSN:0960 7781

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland <sup>1</sup>	Northern Ireland
2001 2002	DEOI 193 053	LRDP 6 373 6 541	LRZQ 19 228 18 917	DCRX 14 774 14 634	DCRW 14 982 16 705	DCRV 14 616 14 599	LRDR 19 071 19 887	DCRR 16 601 17 642	LRDS 25 727 25 464	DCRU 16 393 16 904	BLIA 9 141 9 419	BLFA 23 078 22 858	BLGA 13 245 11 976
2000 Q1 Q2 Q3 Q4	52 100 50 641 48 140 37 971	2 071 1 793 1 712 1 518	5 546 4 804 4 554 3 779	3 571 3 661 3 594 2 987	4 161 3 992 3 890 3 087	4 566 4 464 3 663 3 087	5 350 5 074 4 871 3 391	3 240 4 466 4 119 3 475	6 316 6 776 6 078 4 270	4 688 4 595 4 258 3 200	2 205 2 749 2 781 1 617	6 794 5 464 6 130 5 291	3 592 2 803 2 490 2 269
2001 Q1 Q2 Q3 Q4	48 861 51 617 49 735 42 840	1 926 1 735 1 593 1 119	4 788 4 938 4 813 4 689	3 879 3 797 3 644 3 454	3 757 3 766 3 967 3 492	4 026 4 116 3 309 3 165	4 521 5 641 4 825 4 084	3 446 4 338 5 705 3 112	6 043 7 071 6 509 6 104	4 082 4 431 4 125 3 755	2 206 2 705 2 452 1 778	6 391 5 455 5 787 5 445	3 764 3 847 2 889 2 745
2002 Q1 Q2 Q3 Q4	50 629 50 559	1 768 1 764 1 644 1 365	5 258 5 093 4 672 3 894	3 328 3 765 4 196 3 345	3 580 4 439 4 976 3 710	4 079 3 621 3 864 3 035	5 391 4 403 5 982 4 111	4 765 4 152 4 321 4 404	6 431 7 145 6 300 5 588	4 672 4 372 4 508 3 352	2 161 2 794 2 628 1 836	6 335 5 428 5 431 5 664	3 381 3 381 3 107 2 107
2003 Q1		1 694	5 346	4 376	4 708	4 181	5 321	3 576	6 966	4 360	1 530		3 647

<sup>1</sup> Includes estimates for outstanding returns for private sector. 2 Estimates for 2003 Q1 for the English regions are provisional.

Sources: Office of the Deputy Prime Minister, National Assembly for Wales; Scottish Executive; Department for Social Development, Northern Ireland

## 20 House prices<sup>1</sup> **Government Office Regions**

1993 = 100

	United Kingdom	North East	North West <sup>2</sup>	Mersey- side	Yorkshire and the Humber	East Midlands	West Midlands LRBP	East	London	South East LREA	South West LRBO	Wales	Scotland	Northern Ireland LRBT
2001 2002	LRBH 179.2 209.6	132.1 156.3	143.5 168.7	141.9 152.0	132.5 160.2	157.1 196.3	160.5 195.2	192.9 235.4	231.8 254.8	207.5 241.7	191.3 236.2	146.4 176.3	LRBS 129.3 146.0	207.8 229.3
2000 Q1	156.0	116.5	126.5	109.8	119.9	137.3	137.5	163.7	200.7	171.6	157.7	128.6	124.2	181.5
Q2	164.5	131.9	135.8	120.0	119.9	140.8	146.9	170.6	215.7	184.5	163.8	129.2	123.6	184.3
Q3	167.6	122.4	134.8	121.2	127.4	144.6	151.0	178.0	204.1	192.4	176.9	131.8	124.4	186.0
Q4	172.6	126.2	129.3	134.8	125.7	144.7	153.1	181.4	219.2	202.1	177.7	133.2	124.2	201.9
2001 Q1	171.7	122.7	135.4	150.5	129.0	146.3	152.2	188.1	225.5	192.0	182.0	137.7	130.2	221.9
Q2	177.9	132.9	138.0	132.0	128.8	154.5	157.9	187.9	234.4	211.3	183.8	154.6	126.9	204.4
Q3	184.3	132.7	153.5	141.5	135.9	162.6	166.6	196.3	236.4	214.3	200.2	148.1	130.5	215.0
Q4	180.6	141.3	142.0	140.7	135.7	163.6	162.1	196.2	228.2	207.9	197.9	145.1	131.5	196.2
2002 Q1	187.3	139.6	144.5	121.6	141.7	173.8	168.9	222.2	226.6	211.0	201.2	168.3	146.2	210.7
Q2	202.3	144.0	169.9	158.1	156.0	190.5	184.3	227.7	253.1	228.1	226.8	170.2	141.0	222.1
Q3	219.1	153.6	172.3	153.8	164.2	202.4	209.6	239.4	268.5	254.1	255.9	192.5	145.3	237.9
Q4	223.8	181.7	185.2	163.4	176.4	216.2	210.5	247.9	261.5	263.6	253.1	174.6	154.7	233.8
2003 Q1	223.4	159.5	173.7	174.4	169.6	209.9	204.9	252.1	262.6	259.9	258.9	189.7	146.4	228.7

These indices adjust for the mix of dwellings (by size and type, whether new or second-hand) and exclude those bought at non-market prices and are based on a sample of mortgage completions by all lenders.
 Excludes Merseyside.

Source: Office of the Deputy Prime Minister

## VAT registrations and deregistrations<sup>1</sup>: net change<sup>2</sup> **Government Office Regions**

Thousands

	United Kingdom	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	Wales	Scotland	Northern Ireland
	DCYQ	LREB	LRZS	DCYT	DCYU	DCYY	LRED	DEON	LREE	DCYX	DCZA	DCZB	DCZC
1998	30.3	0.2	2.5	0.5	1.2	1.7	2.7	11.3	6.9	1.7	-0.1	0.9	0.9
1999	6.5	-0.1	0.9	-0.7	-0.2	0.2	0.6	4.6	2.4	0.1	-0.7	-0.5	-0.1
2000	6.2	0.1	0.8	-0.8	0.2	0.3	1.0	2.7	1.9	-	-0.2	_	0.3
2001	12.7	-0.1	1.4	0.2	0.8	1.0	1.0	2.8	3.9	0.8	0.1	0.8	0.2

Registrations and deregistrations of VAT-based enterprises. Not wholly comparable with figures for earlier years which counted VAT reporting units.
 Registrations less deregistrations.

Source: Department of Trade and Industry

## Research and Experimental Development (R&D) Statistics 2001

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GERD £ billion at ppp's,

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## Summary of trends

- Measuring expenditure and employment of R&D is difficult
  because of the subjective judgements that have to be made
  about the dividing line between R&D and other activities. There
  are discontinuities in the series arising from the interpretation of
  definitions, and because of changes in the actual or perceived
  status of organisations (Chapter 1 of Science, Engineering and
  Technology Statistics 2003¹ (Department of Trade and Industry,
  2003) details this). Some general conclusions can be drawn, but
  significance should not be given to small percentage changes
  between years.
- In 2001 Gross Domestic Expenditure on R&D (GERD) was 1.87 per cent of GDP, very similar to 2000 (Table 2). In terms of international comparisons in 2001 the UK was just below the EU average of 1.93 per cent.<sup>5</sup>
- Within the UK, net expenditure in real terms on R&D by government peaked in 1980/81. Since then there was a gradual downward trend until 1998/99, after which point the expenditure for subsequent years has slightly increased (Table 4). The overall level of net government expenditure on defence R&D has fallen from 42 per cent in 1993 to 30 per cent in 2001 (Table 6).
- Expenditure in real terms performed by the business sector has increased by 7 per cent on the 2000 total (Table 7).
- Within the manufacturing sector, the chemicals broad product group has the largest share of total R&D expenditure at 35 per cent. The services sector accounts for 19 per cent of total R&D expenditure (Table 8).
- Within the regions, spending is highest in the South East for both the business & government sectors (Table 14).

## Background

This article is the latest in an annual series; the previous article was published in the August 2002 edition of *Economic Trends*. Most of the figures have already been published by the Office for National Statistics, the Department of Trade and Industry (Office of Science and Technology) or the OECD<sup>1,2,4,5</sup>. The purpose of this report is to bring together a range of data produced & published by ONS in a single annual article and our aim is to continue to inform and stimulate debate within the R&D community.

The R&D statistics published here are consistent with OECD's Frascati

Manual<sup>3</sup> which defines Research and Experimental Development (R&D) and gives guidelines on how to measure expenditure and employment on R&D. The manual is applied throughout the OECD so it is possible to make comparisons between countries.<sup>5,6</sup>

R&D is defined as creative work undertaken systematically to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this knowledge to devise new applications.

Care should be exercised when using R&D statistics for economic analysis. R&D can lead to the technological inventions that are necessary for a successful, innovative economy. However, such inventions are not a sufficient condition for success — many other economic and social factors are important. Undue weight should not be given to the economic significance of R&D's role as a generator of inventions. On the other hand, the economic benefit of R&D is not limited to that role: R&D develops skills and techniques that are important for any economy.

## Sources of information

Performers and funders of R&D are divided into four economic sectors: Government, Business, Higher Education Institutions (HEIs), and the Private Non-Profit (PNP) sector. Definitions are provided at the end of this article.

The ONS conducts an annual survey of Central Government R&D, which is addressed to all Government departments. The survey collects data on expenditure and employment for outturn and planning years. The latest detailed results will be published in OST's *Science*, *Engineering and Technology Statistics* 2003 (SET 2003).¹ This document will be available on OST's website at http://www.dti.gov.uk/ost/.

The ONS also conducts an annual survey of R&D in businesses. As in previous years the 2001 survey used a sample survey to minimise burdens on contributors. The register of R&D performers is continually updated and results and detailed methodology notes can be found in the 2001 Business Monitor MA14.<sup>2</sup>

Statistics on expenditure on and employment in R&D by Higher Education Institutions (HEIs) are based on information collected by Higher Education Funding Councils and HESA (Higher Education Statistics Agency). In 1994 a new methodology was introduced to estimate expenditure on R&D by HEIs. This was based on the allocation of various Funding Council Grants. Full details of the new methodology will be contained in SET 2003.1

## The Tables

## Gross Domestic Expenditure on R&D (GERD) (Tables 1-3)

These tables show the performers and funders of R&D in the UK. Measuring expenditure on R&D performed within each sector avoids problems of omission and double counting that can arise when measuring funds provided for R&D. GERD is the sum of R&D performed in the four sectors. Tables 1 and 2 show that UK GERD in 2001 was £18.8 billion in cash terms. GERD is often quoted as a percentage of GDP when making international comparisons. In 2001 UK GERD was 1.82 per cent of GDP, similar to the previous year's figure, but below the provisional OECD estimate for the EU average of 1.93 per cent.

Table 1 shows the interaction between R&D funders and performers. For example £12.7 billion was spent on R&D in the business sector. Of this, £1.5 billion was provided by the government, £3.0 billion came from abroad and £8.2 billion was funded by businesses from their own sources. Funds from abroad include those from overseas parent companies, contracts for R&D projects, support for R&D provided through European Union schemes and international collaborative projects typically for aerospace or defence projects.

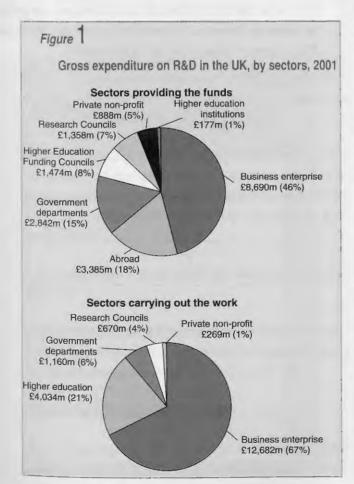


Figure 1 shows that the business sector is the most important sector of the economy in terms of providing funds for and carrying out R&D.

## Government R&D expenditure (Tables 4 to 6, 17 and 19)

A department's net expenditure on R&D is its expenditure on R&D performed within the department (intramural), plus its expenditure on R&D outside the department (extramural), minus receipts for R&D.

The sum of a department's net expenditure is the R&D element of the government's budget expenditure. This is used for international comparisons of Government appropriations for R&D (e.g. Table 17). The UK has a high proportion of Central Government expenditure devoted to R&D for defence purposes (Table 19).

Figures in Tables 4 and 6 for Government's net expenditure on R&D differ from Government funding figures in Tables 1 and 3. This is because Tables 1 to 3 are based on information supplied by R&D (performers) whilst Tables 4 to 6 contain expenditure figures reported by Government departments (funders). The gap is mainly accounted for by differences in the reporting of Government contracts with businesses for certain types of defence R&D and R&D performed abroad but funded by the UK Government. In addition the difference is also attributed to other factors such as time lag problems due to differences in accounting periods and not all monies given being used in that financial period, treatment of VAT and sub-contracting of R&D work.

R&D in NHS hospitals previously included in Table 5 on the basis of the Culyer report, <sup>7</sup> are now reported as extramural expenditure. The figures for Central Government intramural R&D in Table 5 are lower than those performed by the government sector in Tables 1 and 2. This is because the latter includes estimates for a small amount of R&D not collected by the Government survey and R&D performed by local authorities.

Table 4 shows a time series dating back to 1966/67. This shows that in 2001/02 the net Government expenditure on R&D (by civil and defence departments) was £6.3 billion, a 3 per cent increase in cash terms on 2000/01. In real terms, spending on R&D was flat in the late sixties but rose in the seventies to a peak in 1980/81. Since then it has declined although spending in 2001–02 was still greater than in 1966–67.

Table 5 shows the breakdown of departmental intramural expenditure (see Figure 2); the current (which is also shown by Frascati type

of research) and capital expenditure. Figure 2 shows that 94 per cent (£1.3 billion) of intramural expenditure is current expenditure. Applied research accounts for 54 per cent of the total intramural expenditure. Total intramural expenditure is further broken down in Table 5 into Social Science & Humanities (SSH) and Natural Science & Engineering (NSE) research.

Table 6 provides an analysis of net government R&D expenditure by Frascati type of research activity for the period 1993/94 to 2001/02.

Figure 2 Analysis of Central Government Intramural Expenditure 2001-02 Breakdown of intramural current and capital expenditure Capital expenditure £82m (6%) Current expenditure £1,304m (94%) Departmental breakdown of current intramural R&D Total civil departments £270m (21%) Total MOD £419m (32%) Total OST & Research Councils £615m (47%) Breakdown of current expenditure by Frascati type of research Basic research £323m (25%) Applied research £709m (54%) Experimental development £271m (21%)

There has been a 15 per cent increase in basic research and a 9 per cent increase in applied research between 2000/01 and 2001/02. In 2001/02 defence expenditure accounted for 30 per cent of total expenditure.

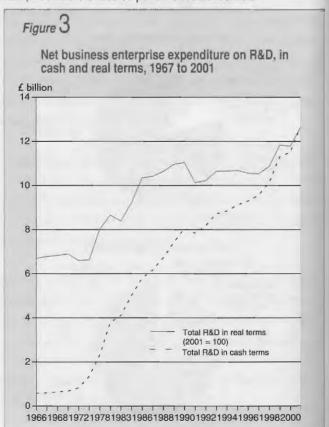
## R&D performed by the Business Sector (Tables 7-12)

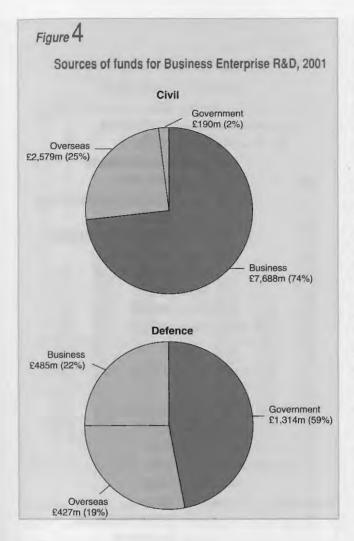
Table 7 and Figure 3 show a time series dating back to 1966 for expenditure performed by the Business sector. They show that in 2001 R&D expenditure was £12.7 billion. Expenditure in real terms in the business sector has increased by 89 per cent on 1966 figures.

Table 8 shows that within the business sector, the services broad product group accounted for 19 per cent of the total expenditure in 2001, a rise of 2 per cent on 2000. In the manufacturing sector the pharmaceuticals and chemicals broad product group had the largest share of R&D expenditure at 28 per cent of the total.

Statistics for civil and defence R&D have been collected separately since 1989. Defence includes all R&D programmes undertaken primarily for defence reasons, regardless of their content or whether they have secondary civil applications.

In 2001, civil R&D represented 82 per cent of all R&D expenditure performed by business (Table 9). Table 10 and figure 4 show that, in 2001, 74 per cent of civil R&D performed by businesses was funded by businesses themselves. Government funded 2 per cent of civil R&D, whereas it funded 59 per cent of defence R&D.





A breakdown into detailed product groups is shown in Tables 11 and 12. The product group with the largest expenditure is pharmaceuticals, medical chemicals and botanical products, which accounted for £3.0 billion in 2001, followed by Aerospace at £1.2 billion.

Table 12 shows the split of current and capital expenditure on R&D performed by UK businesses. Current expenditure is the sum of salaries and wages, basic and applied research and experimental development. Capital is the expenditure on land, buildings, plant and machinery.

# R&D employment – Government and Business Enterprise (Table 13)

Between 2000 and 2001, employment rates have remained at similar levels, except for government departments where there has been a 37 per cent decrease.

#### Regional R&D statistics (Tables 14-15)

Regional estimates for the Government and Business sectors are derived from the ONS surveys of Government and Business Enterprises.

The Higher Education Institutions (HEI) regional R&D estimates are less reliable and should be treated with special caution. The expenditure estimates are obtained by allocating total R&D performed by HEIs (HERD) to individual HEIs in proportion to their income from research grants and contracts. An estimate of the labour force in Full Time Equivalents (FTE) is not available.

Estimates are given for UK Government Office Regions (GOR). Of the 12 GOR regions the South East of England has the highest number of R&D personnel and the largest expenditure on R&D. To adjust for this the R&D personnel estimates are shown as a percentage of the labour force (see Figure 6). At the time of publication it is not possible to show R&D expenditure as a percentage of GDP because of the unavailability of regional GDP for 2001. Tables 14 and 15 show that, within the UK, the Eastern and South East have the highest concentration of R&D expenditure performed by business. For the Government sector the highest regions are the South East, the South West and the Eastern region, whilst for the Higher Education Sector, London, the South East and Scotland are prominent (see Figure 5). In terms of personnel estimates as a percentage of the labour force (see Figure 6), the Eastern and South East regions are prominent in the Business sector and the South East is prominent in the Government sector.

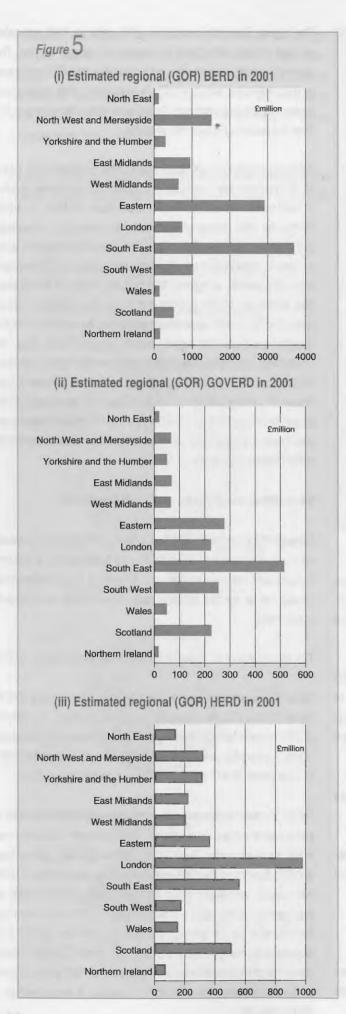
#### International comparisons of R&D (Tables 16-19)

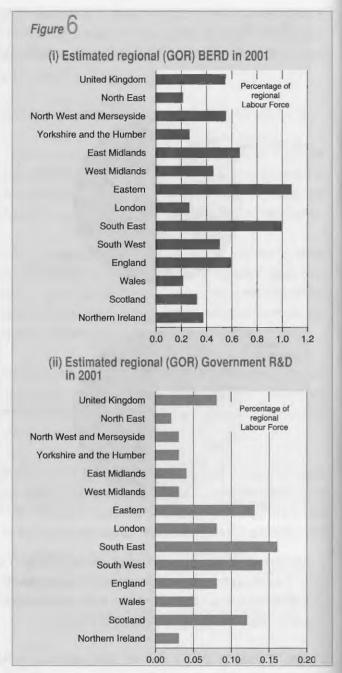
Although the guidelines in the Frascati Manual are generally followed, methods of collecting R&D data do vary from country to country (5 discusses national variations). Therefore small differences should not be treated as significant when making international comparisons.

The figures shown for Japan in the tables are estimated by OECD.

Table 16 shows gross expenditure on R&D as a percentage of GDP for the G7 countries over the time period 1993 to 2001. The ratio for GERD has been fairly constant over this time for most of the countries. Figure 7 shows the position in 2001. The UK was ranked 6th. Table 16 also shows BERD and GOVERD as a percentage of GDP.

Table 17 shows the international comparisons of GERD by sector of performance and source of funding. Table 18 shows R&D performed in the business sector. Table 16 also shows this as a percentage of GDP; Japan and the USA spend most as a percentage of GDP. International comparison of Government funding of R&D in 2001 by socio-economic objective is shown in Table 19. Of the G7 countries, the USA and the UK devoted the highest proportion of their total Government funding of R&D to defence. For Germany, Italy and Japan about half of their total Government funding of R&D was classified as the advancement of knowledge compared to approximately a third for the UK.





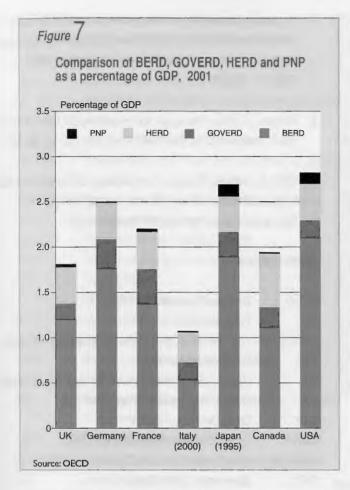
#### **Definitions**

### Type of R&D

Basic or fundamental research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

**Applied research** is research undertaken with either a general or a particular application in view.

**Experimental Development** is the use of the results of basic and applied research directed to the introduction of new materials,



processes, products, devices and systems, or the improvement of existing ones. It should include the prototype or pilot plant stage, design and drawing required during R&D and innovative work done on contracts with outside organisations, government departments, and public bodies. Firms in the aerospace industry are asked to include expenditure on development batches.

#### Sectors of the Economy

The four sectors of the economy are defined in an ONS publication.<sup>4</sup> However higher education is identified separately as recommended in the Frascati Manual.

Central Government includes the central government departments, research councils, higher education funding councils, NDPBs, and Executive Agencies.

Business Enterprises include private businesses, public corporations, and research associations serving businesses.

**Higher Education** includes the former polytechnics and central institutions in Scotland as well as the old universities.

Private Non-Profit sector makes up the remainder and includes medical research charities.

#### Regional data

Data are classified according to the Government Office Regions (GOR).

#### Rounding

Throughout the tables components of totals have been rounded independently of the totals. Therefore the rounded totals will not always be equal to the sums of the rounded components. Symbols follow the conventions used elsewhere in *Economic Trends*.

#### **Revisions and Discontinuities**

In the Government Tables, a new method for estimating Government funded R&D in HE was introduced in 1994/95. Whilst it has been possible to adjust 93/94 figures it has not been possible to revise the data for previous years because of structural changes in the HE sector.

Government figures in some tables (see table footnotes) for 1995/ 96 onwards, now include NHS Hospital R&D estimates for the first time.

Company mis-reporting has led to a number of revisions in the Business R&D survey. Data for the product group 'Refined petroleum products and coke oven products; Processing of nuclear fuel' for the years 1993 to 1998 inclusive have been revised. Similarly the product groups 'Wholesale and retail trade' and 'Transport and storage' have been revised back to 1992.

Figures relating to gross expenditure on R&D published in the ONS First Release on 28 March 2003<sup>4</sup> have been revised slightly due to government department amendments.

Regional data are published using GOR regions and these should not be compared to Nomenclature of Units for Territorial Statistics (NUTS) regional data previously published in this annual article.

#### **Data Analysis Service**

The ONS is now able to offer additional analyses on R&D statistics, e.g. sizeband and regional breakdowns. The contact for this service is:

Jane Morgan Tel no: 01633 813109 e-mail: jane.morgan@ons.gov.uk

For further information on:	ONS Contacts:
Business R&D <sup>2</sup>	Jane Morgan
	Tel. 01633 813109
Information on aggregated R&D data	Jane Morgan
	Tel. 01633 813109
Definitions of R&D <sup>3</sup>	Jane Morgan
	Tel. 01633 813109
GERD⁴	Jane Morgan
	Tel. 01633 813109
General information on Science &	Steve Churchill
Technology <sup>1</sup>	Tel. 01633 812003
International comparisons <sup>5, 6, 8</sup>	Steve Churchill
	Tel. 01633 812003

#### References

- Department of Trade and Industry/Office of Science and Technology (2003). Science, Engineering and Technology Statistics 2003. http://www.dti.gov.uk/ost/setstats
- Office for National Statistics (2003). UK Business Enterprise, Research and Development in UK Business, Series MA14. http://www.statistics.gov.uk/StatBase/Product-asp?vink=165
- Organisation for Economic Co-operation and Development (1993). Proposed Standard Practice for Surveys of Research and Experimental Development (The Frascati Manual). OECD: Paris.
- Office for National Statistics First Release, 28 March 2003. Gross
   Domestic Expenditure on Research and Development 2001.
   http://statistics.gov.uk/pdfdir/gerdo303.pdf
- Organisation for Economic Co-operation and Development (2002). Main Science and Technological Indicators 2002/2. OECD: Paris.
- Eurostat (2001). Research and Development: Annual Statistics 1990–2000. Eurostat: Luxembourg.

- Supporting Research and Development in the NHS (A report to the Minister of Health by a research and development task force chaired by Professor Anthony Culyer), September 1994;
   ISBN 0 11 321831 1.
- Morgan J. (2002) Research and Experimental Development (R&D) Statistics 2000. Economic Trends No. 585, pp 32–56.
- Office for National Statistics First Release, 22 November 2002
   Business Enterprise Research and Development 2001.
   http://www.statistics.gov.uk/pdfdir/berd1102.pdf

#### **Abbreviations**

BERD	Business Expenditure on R&D
EU	European Union
<b>EUROSTAT</b>	The Statistical Office of the European Communities
FTE	Full Time Equivalent
G7	Group of Seven countries, comprising: UK, Germany,
	France, Italy, Japan, Canada, and USA
GDP	Gross Domestic Product
GERD	Gross (Domestic) Expenditure on R&D
GOVERD	Government Intramural Expenditure on R&D
GOR	Government Office Regions
HEFC	Higher Education Funding Council
HEIs	Higher Education Institutions
HERD	Higher Education Expenditure on R&D
HESA	Higher Education Statistics Agency
NDPB	Non-Departmental Public Body
NHS	National Health Service
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and
	Development
ONS	Office for National Statistics
OST	Office of Science and Technology (part of DTI since
	April 1996)
PPP	Purchasing Power Parities
PNP	Private Non-Profit
R&D	Research and (Experimental) Development

### Government departments: abbreviations

BBSRC	biotechnology and Biological Sciences Research
	Council
CCLRC	Council for the Central Laboratories of the Research
	Councils
DCMS	Department for Culture, Media and Sport
DEFRA	Department for Environment, food and Rural Affairs

DFES Department for Education and Schools
DFID Department for International Development

DOH Department of Health

DTI Department of Trade and Industry

DTLR Department for Transport, Local Government and the

Regions

DWP Department for Work and Pensions

EPSRC Engineering and Physical Sciences Research

Council

ESRC Economic and Social Science Research Council

FSA Food Standards Agency

HEFC Higher Education Funding Council
HSE Health and Safety Executive

HO Home Office

MOD Ministry of Defence

MRC Medical Research Council
NAW National Assembly for Wales

NERC Natural Environment Research Council

NHS National Health Service

NI Northern Ireland Department of Enterprise, Trade and

Investment

OCD Other Civil Departments

PPARC Particle Physics and Astronomy Research Council

SE Scottish Executive

Table 1 Gross expenditure on civil and defence R&D performed in the UK in 20011

£ million

			Sectors carr	ying out the wor	rk <sup>2,3</sup>		
Sectors providing the funds <sup>2,3</sup>	Government departments <sup>4</sup>	Research Councils	Higher education	Business enterprise	Private non-profit	Totals	Abroad
Government departments <sup>4</sup>	937	148	237	1,493	27	2,842	169
Research Councils	7	384	943	11	13	1,358	122
Higher Education Funding Councils		-	1,474			1,474	
Higher education institutions	1	9	166	-	2	177	
Business enterprise	191	37	250	8,168	43	8,690	
Private non-profit	11	53	660	4	161	888	
Abroad	13	39	304	3,006	23	3,385	
Total	1,160	670	4,034	12,682	269	18,815	n/a
Civil							
Government departments <sup>4</sup>	542	143	220	179	27	1,111	152
Research Councils	7	384	943	11	13	1,358	122
Higher Education Funding Councils		-	1,474	-		1,474	
Higher education institutions	0	9	166		2	177	
Business enterprise	179	37	222	7,684	43	8,165	
Private non-profit	11	53	660	4	161	888	
Abroad	7	39	304	2,579	23	2,952	
Total	746	665	3,989	10,456	269	16,125	n/a
Defence							
Government departments4	395	5	17	1,314	0	1,731	17
Research Councils		-	-	-			
Higher Education Funding Councils	-	-	-	-		-	
Higher education institutions	0	-	-	-		0	
Business enterprise	12		28	485	-	525	
Private non-profit			-		-	-	
Abroad	6			427		433	
Total	414	5	45	2,226	0	2,690	n/a

#### Notes:

General Note

These estimates are derived from the ONS surveys of government and business enterprise R&D and from information from the HEFC. More details are in the ONS First Release Gross Domestic Expenditure on Research and Development, (GERD), published on 28 March 2003. GERD data has been revised slightly due to departmental amendments.

#### Notes

- 1 Research in the social sciences and humanities is included.
- 2 The OECD terminology is used for describing the breakdown of GERD by sector.
- 3 Some of the numbers have been estimated.
- 4 The total for R&D performed by government includes estimates for a small amount of R&D not available from the Government Survey; R&D performed by local authorities. Since 1996 UK NHS figures have been obtained from the Department of Health and the Scottish Office on the basis of the Culyer report.
- 0 represents a value less than 0.5
- represents a nil value

Table 2 Gross expenditure on R&D in the UK by performing sector, 1993 to 20011

								£ million
1993	1994	1995	1996	1997	1998	1999	2000	2001
1,928	2,051	1,462	1,495	1,427	1,487	1,450	1,489	1,160
-		581	575	590	591	622	646	670
8,717	8,842	9,116	9,297	9,556	10,133	11,302	11,510	12,682
2,312	2,623	2,696	2,792	2,893	3,040	3,324	3,648	4,034
232	168	177	177	190	203	231	255	269
13,189	13,684	14,034	14,336	14,657	15,454	16,929	17,547	18,815
2m):								
2,358	2,475	1,716	1,700	1,574	1,597	1,520	1,526	1,160
-	-	682	654	651	635	652	662	670
10,658	10,669	10,695	10,572	10,541	10,879	11,847	11,797	12,682
2,827	3,165	3,163	3,175	3,192	3,264	3,484	3,739	4,034
283	203	208	201	210	218	242	262	269
16,126	16,512	16,465	16,302	16,168	16,592	17,745	17,985	18,815
2.02	1.98	1.93	1.85	1.78	1.78	1.84	1.82	1.87
							Indexes	2001=100
1993	1994	1995	1996	1997	1998	1999	2000	2001
81.8	82.9	85.2	87.9	90.7	93.1	95.4	97.6	100.0
								£ million
1993	1994	1995	1996	1997	1998	1999	2000	2001
653,582	690,575	729,001	772,856	824,164	868.642	918,202	962,613	1,005,023
	1,928 8,717 2,312 232 13,189 2m): 2,358 10,658 2,827 283 16,126 2.02	1,928 2,051 8,717 8,842 2,312 2,623 232 168  13,189 13,684  2m): 2,358 2,475 10,658 10,669 2,827 3,165 283 203 16,126 16,512 2.02 1.98  1993 1994 81.8 82.9	1,928 2,051 1,462 - 581 8,717 8,842 9,116 2,312 2,623 2,696 232 168 177  13,189 13,684 14,034  2m):  2,358 2,475 1,716 - 682 10,658 10,669 10,695 2,827 3,165 3,163 283 203 208  16,126 16,512 16,465  2.02 1.98 1.93  1993 1994 1995 81.8 82.9 85.2	1,928	1,928	1,928	1,928	1,928

Table 3 Gross expenditure on R&D in the UK by source of funds, 1993 to 20011,2

									£ million
	1993	1994	1995	1996	1997	1998	1999	2000	2001
Sector providing funds									
Expenditure in cash terms (£m):									
Funded by:									
Government	4,237	4,479	2,514	2,402	2,332	2,535	2,601	2,547	2,842
Research Councils	-	-	1,078	1,092	1,135	1,117	1,185	1,250	1,358
Higher Education Funding Councils	-		1,018	1,027	1,033	1,085	1,157	1,276	1,474
Higher education	103	116	119	120	123	130	142	158	177
Business enterprise	6,815	6,886	6,765	6,817	7,321	7,356	8,213	8,648	8,690
Private non-profit	477	514	511	545	578	621	701	815	888
Abroad	1,558	1,689	2,029	2,331	2,136	2,610	2,929	2,854	3,385
Total	13,189	13,684	14,034	14,336	14,657	15,454	16,929	17,547	18,815
Expenditure in real terms (2001=100) (£m): Funded by:									
Government	5,180	5,405	2,950	2,731	2,572	2,721	2,727	2,610	2,842
Research Councils			1,264	1,242	1,252	1,199	1,243	1,281	1,358
Higher Education Funding Councils	-		1,194	1,168	1,139	1,165	1,213	1,308	1,474
Higher education	125	140	139	137	135	140	149	162	177
Business enterprise	8,332	8,309	7,937	7,752	8,076	7,898	8,609	8,864	8,690
Private non-profit	583	620	600	620	638	667	735	836	888
Abroad	1,905	2,039	2,381	2,651	2,356	2,802	3,070	2,925	3,385
Total	16,126	16,512	16,465	16,302	16,168	16,592	17,745	17,985	18,815
Total as percentage of GDP	2.02	1.98	1.93	1.85	1.78	1.78	1.84	1.82	1.87

Notes:
1 See notes at Table 1.
2 See notes at Table 2.

Table 4 Total Net Government expenditure on R&D in cash terms and real terms, 1966/67 to 2001/02

		£ million							
	Total Net Government R&D								
Year	In cash terms excluding NHS figures	In real terms (2001=100) <sup>1</sup>							
1966/67	486	5,619							
1967/68	503	5,650							
1968/69	531	5,685							
1969/70	562	5,713							
1970/71	606	5,686							
		4 36 3							

755

847

964

1,169

1,495

1,647

1,814

2,097

2,601

3,184

3,395

3,519

3,730

3,964

4,175

4,255

4,408

4,497

4,772

4,955

5,027

5,078

5,402

5,200

5,295 5,351

5,504

5,304

5,782

6,166

6,329

6,491

6,739

7,160

7,252

7,408

7,186

6,963

7,252

7,701

7,972

7,762

7,522

7,632

7,705

7,696 7,595

7,463

7,128

7,059

6,800 6,502

6,362

6,605

6,275

6,212

6,085

6,072

5,695

6,061

6,320

#### Notes

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1996/97<sup>2</sup> 1997/98<sup>2</sup>

1998/992

1999/00<sup>2</sup>

2000/012

2001/022

<sup>1</sup> See note at Table 2.

<sup>2</sup> Figures for NHS are available in SET 20021.

Table 5 Analysis of Government Intramural expenditure, 2001-021,2

£ million Breakdown of current Frascati R&D expenditure SSH NSE Current Applied Experimental Capital Total Basic development expenditure expenditure Intramural OST - DTI **Research Councils** BBSRC 148.0 49.3 98.7 16.7 164.7 164.7 5.2 **ESRC** 4.5 4.5 0.7 5.2 219.9 MRC 196.5 133.8 62.7 23.4 219.9 55.1 21.7 8.1 123.1 123.1 **NERC** 115.0 38.2 **EPSRC** 17.9 9.3 8.6 0.6 18.4 18.4 25.5 **PPARC** 22.2 19.9 2.2 3.4 25.5 129.1 CCLRC 111.2 27.6 83.7 17.9 129.1 Total OST & Research Councils 615.2 282.7 310.9 21.7 70.7 686.0 5.2 680.8 Higher Education Funding Councils **Total Higher Education Funding Councils** Civil departments 3.5 4.3 88.88 0.7 88.1 **DEFRA** 84.5 18.4 62.7 DFEE 6.8 1.5 5.4 6.8 6.8 2.2 0.2 0.3 6.5 4.3 DTLR 6.5 6.1 2.6 36.1 0.0 36.1 DH (includes NHS) 1.9 8.3 33.5 23.3 NHS3 0.0 0.0 0.0 0.0 DWP (formerly DSS) 4.4 4.4 4.4 4.4 0.7 0.5 0.2 6.2 5.5 **HSC** 6.0 5.4 HO 1.3 1.0 21.4 13.7 7.7 20.3 19.0 10.0 8.5 0.0 0.3 10.3 1.0 9.4 DCMS (formerly DNH) 1.5 DFID (formerly ODA) 1.8 1.8 1.8 0.5 1.3 DTI (ex OST) FSA NI 7.0 0.3 6.5 0.2 0.5 7.5 1.5 6.0 57.1 2.5 54.6 SE (formerly SO) 56.9 4.8 16.6 35.6 0.2 2.7 2.3 NAW (formerly WO) 1.2 3.5 0.3 5.0 5.0 2.5 29.7 18.0 Other departments 27.2 1.0 21.9 4.3 11.7 48.3 233.3 169.7 59.7 11.5 281.6 Total civil departments 270.1 40.6 Total civil R&D 885.3 323.3 480.6 81.5 82.3 967.6 53.5 914.1 418.5 MOD 418.5 228.8 189.7 418.5 1,303.8 323.3 709.4 271.2 82.3 1,386.1 53.5 1,332.6 Total

#### Notes:

<sup>1</sup> Excludes Research Councils' pensions/other costs.

<sup>2</sup> Includes intramural R&D funded by other departments.

<sup>3</sup> NHS expenditure figures are now reported as extramural.

<sup>4</sup> Full departmental titles can be found under "Abbreviations".

Table 6 Analysis of net Government R&D expenditure by Frascati type of research activity, 1993/94 to 2001/021

£ million

	1993/94	1994/95	1995/962	1996/972	1997/98 <sup>2</sup>	1998/99²	1999/00²	2000/012	2001/022
Total Government R&D									
Basic	1,571		-	-	-	-	-	-	-
- pure	-	1,253	1,273	1,322	1,334	1,369	1,492	1,691	1,964
- orientated	-	472	504	524	523	535	566	620	683
Applied - strategic	1,019	879	1,004	1,109	1,079	1,020	1,153	1,257	1,308
- specific	1,050	1,075	1,322	1,224	1,198	1,178	1,059	1,029	1,156
Experimental development	1,762	1,492	1,530	1,570	1,757	1,592	1,902	1,966	1,638
Total £m	5,402	5,171	5,634	5,750	5,891	5,695	6,172	6,564	6,748
Civil R&D									
Basic	1,571	-	-	-		-	-	-	
- pure	-	1,253	1,273	1,322	1,334	1,369	1,467	1,666	1,964
- orientated	-	472	504	524	523	535	566	620	682
Applied - strategic	962	810	839	948	923	875	985	1,097	1,157
- specific	454	479	813	681	698	704	667	657	750
Experimental development	137	126	136	131	102	116	141	145	137
Total £m	3,124	3,140	3,565	3,606	3,580	3,599	3,827	4,185	4,691
Defence R&D									
Basic		-		-	-	-	-		-
- pure	-		-	-	-		25	25	
- orientated	-		-	-		-	-		0
Applied - strategic	58	69	166	160	156	145	167	161	151
- specific	596	596	510	544	500	475	392	372	406
Experimental development	1,624	1,366	1,394	1,439	1,655	1,476	1,761	1,821	1,500
Total £m	2,278	2,032	2,070	2,144	2,311	2,096	2,345	2,379	2,057

#### Notes

2 Includes NHS estimates1.

<sup>1</sup> For the purpose of this analysis Research Councils expenditure for Pensions/Other costs have been excluded from 1994/95 onwards.

Business Enterprise R&D, in cash terms and real terms, 1966 to 2001 Table 7

£ million

	Total Business Enterprise R&D							
Year	In cash terms	In real term (2001=100						
1966	580	6,706						
1967	605	6,79						
1968	639	6,84						
1969	680	6,913						
1970	N/S	N/S						
1971	N/S	N/S						
1972	831	6,612						
1973	N/S	N/S						
1974	N/S	N/S						
1975	1,340	6,640						
1976	N/S	N/S						
1977	N/S	N/S						
1978	2,324	8,03						
1979	N/S	N/S						
1980	N/S	N/S						
1981	3,793	8,67						
1982	N/S	N/S						
1983	4,104	8,39						
1984	N/S	N/S						
1985	5,005	9,22						
1986	5,804	10,366						
1987	6,159	10,42						
1988	6,717	10,64						
1989	7,416	10,97						
1990	8,054	11,05						
1991	7,842	10,14						
1992	8,166	10,23						
1993	8,717	10,65						
1994	8,842	10,66						
1995	9,116	10,69						
1996	9,297	10,57						
1997	9,556	10,54						
1998	10,133	10,87						
1999	11,302	11,84						
2000	11,510	11,79						
2001	12,682	12,68						

Notes:
1 See notes at Table 2.
(N/S) = No survey carried out

Table 8 Expenditure on R&D performed in UK businesses: broad product groups, in cash & real terms, 1993 to 2001

									£ million
In cash terms	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing: Total	6,965	7,051	7,134	7,264	7,608	8,142	8,995	9,231	10,040
Chemicals	2,400	2,509	2,515	2,479	2,831	2,926	3,253	3,528	3,563
Mechanical engineering	665	761	660	668	709	730	712	776	1,041
Electrical machinery	1,386	1,218	1,245	1,313	1,181	1,320	1,335	1,558	1,734
Transport equipment	717	710	833	977	990	1,020	1,235	1,094	1,161
Aerospace	782	860	886	812	893	1,039	1,237	1,091	1,260
Other manufacturing	1,015	993	994	1,016	1,004	1,108	1,222	1,183	1,282
Services	1,376	1,458		1,736	1,652	1,668	1,972	1,905	2,377
Other: Total	376	334		296	295	323	335	374	265
Agriculture, hunting & forestry; Fishing	89	80		76	84	102	115	135	96
Extractive industries	62	66	65	64	44	41	42	46	40
Electricity, gas & water supply	214	177	168	148	130	140	137	160	99
Construction	11	11	8	8	38	39	41	34	30
Total	8,717	8,842	9,116	9,297	9,556	10,133	11,302	11,510	12,682
In real terms (at 2001 prices)	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing: Total	8,516	8,508	8,370	8,260	8,393	8,741	9,429	9,462	10,040
Chemicals	2,934	3,027	2,951	2,819	3,123	3,141	3,410	3,616	3,563
Mechanical engineering	813	918	774	760	782	784	746	796	1,041
Electrical machinery	1,695	1,470	1,461	1,493	1,303	1,417	1,399	1,597	1,734
Transport equipment	877	857	977	1,111	1,092	1,095	1,295	1,122	1,161
Aerospace	956	1,038	1,039	923	985	1,115	1,297	1,119	1,260
Other manufacturing	1,241	1,198	1,166	1,155	1,108	1,190	1,281	1,213	1,282
Services	1,682	1,759		1,974	1,822	1,791	2,067	1,952	2,377
Other: Total	460	403		337	325	347	351	383	265
Agriculture, hunting & forestry; Fishing	109	97		86	93	110	121	138	96
Extractive industries	76	80	76	73	49	44	44	47	40
Electricity, gas & water supply	262	214	197	168	143	150	144	164	99
Construction	13	13	9	9	42	42	43	35	30
Total	10,658	10,669	10,695	10,572	10,541	10,879	11,847	11,797	12,682

Notes:

<sup>1</sup> denotes disclosive figures.

Expenditure on civil and defence R&D performed by Business Enterprises, 1993 to 2001 Table 9

				C	ivil					Defence						
	1994	1995	1996	1997	1998	1999	2000	2001	1994	1995	1996	1997	1998	1999	2000	2001
All product groups	7,421	7,725	7,937	8,112	8,600	9,626	9,838	10,456	1,420	1,391	1,360	1,443	1,533	1,675	1,671	2,226
Manufacturing: Total	5,717	5,865	5,997	6,303	6,725	7,376	7,582	8,073	1,334	1,292	1,268	1,305	1,417	1,619	1,649	1,967
Chemicals	2,500	2,511	2,477	2,829	2,926	3,252	3,527	3,562	9	3	2	2	-	1	-	-
Mechanical engineering	415	418	395	407	455	434	463	470	346	266	273	302	276	279	314	571
Electrical machinery	824	823	896	803	916	1,013	1,163	1,200	394	423	417	377	404	322	395	533
Transport equipment	699	823	967	979	983	1,159	1,023	1,079	11	10	10	11	36	77	71	82
Aerospace	380	413	359	412	485	535	457	621	480	473	453	481	554	701	634	639
Other manufacturing	899	878	903	873	960	983	948	1,141	94	117	113	131	147	239	235	141
Services	1,372		1,644	1,513	1,552	1,915	1,883	2,118	87	99	92	139	116	57	22	259
Other: Total Agriculture, hunting &	334		296	295	322	335	374	265	1		-	-			-	-
forestry; Fishing	80		76	84	102	115	135	96				_		_		
Extractive industries	66	65	64	44	41	42	46	40					_			
Electricity, gas & water	00	00	01													
supply	177	168	148	130	140	137	160	99	1	-	-	-	-	-	-	-
Construction	11	8	8	38	39	41	34	30	-	-	-	-		-	-	-

(ii) in real terms (£m 2001 prices	(ii)	in real	terms	(£m 2001	prices	)1
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				C	ivil							Defe	ence			
	1994	1995	1996	1997	1998	1999	2000	2001	1994	1995	1996	1997	1998	1999	2000	2001
All product groups	8,955	9,063	9,026	8,949	9,233	10,090	9,838	10,456	1,713	1,632	1,547	1,592	1,646	1,756	1,713	2,226
Manufacturing: Total	6,898	6,881	6,819	6,953	7,220	7,732	7,582	8,073	1,610	1,516	1,442	1,440	1,521	1,697	1,690	1,967
Chemicals	3,017	2,946	2,817	3,121	3,141	3,409	3,527	3,562	11	4	2	2	-	1	-	-
Mechanical engineering	501	490	449	449	488	455	463	470	418	312	310	333	296	292	322	571
Electrical machinery	994	966	1,019	886	983	1,062	1,163	1,200	475	496	474	416	434	338	405	533
Transport equipment	843	966	1,100	1,080	1,055	1,215	1,023	1,079	13	12	11	12	39	81	73	82
Aerospace	459	485	408	454	521	561	457	621	579	555	515	531	595	735	650	639
Other manufacturing	1,085	1,030	1,027	963	1,031	1,030	948	1,141	113	137	128	145	158	251	241	141
Services	1,656		1,869	1,669	1,666	2,007	1,883	2,118	105	116	105	153	125	60	23	259
Other: Total	403	.,	337	325	346	351	374	265	1							
Agriculture, hunting &																
forestry; Fishing	97		86	93	110	121	135	96	-	-	-	-	-	-	-	-
Extractive industries Electricity, gas & water	80	76	73	49	44	44	46	40	-	-	-	-		-	-	-
supply	214	197	168	143	150	144	160	99	1	-	-	-	-	-		-
Construction	13	9	9	42	42	43	34		-	-	-	-	-			-

Notes: 1 See Table 2 for deflators.

Table 10 Sources of funds for business enterprise R&D in cash terms, 1993 to 2001

£ million, cash terms

		Government £m	Overseas £m	Mainly own resources <sup>1</sup> £m	Total intramural R&D £m
1993		965	1,345	6,409	8,717
of which:	Civil	244	1,048	6,085	7,375
	Defence	722	295	324	1,342
1994	Deletice	910	1,410	6,523	8,842
of which:	Civil	198	1,071	6,152	7,421
	Defence	713	338	370	1,420
	Defence	953	1,738	6,426	9,116
1995	Oball	224		6,093	7,725
of which:			1,409	333	1,391
	Defence	729	329		9,297
1996	e: "	842	2,018	6,438	
of which:		150	1,715	6,074	7,937
	Defence	693	303	364	1,360
1997	200	915	1,800	6,841	9,556
of which:		198	1,475	6,439	8,112
	Defence	717	325	401	1,443
1998		1,094	2,238	6,800	10,133
of which:	Civil	307	1,857	6,435	8,600
	Defence	787	381	365	1,533
1999		1,157	2,570	7,575	11,302
of which:	Civil	316	2,092	7,219	9,626
	Defence	841	478	356	1,675
2000		1,013	2,470	8,026	11,510
of which:	Civil	228	2,003	7,607	9,838
OI WINGII.	Defence	785	467	418	1,671
2001	Deletice	1,504	3,006	8,172	12,682
of which:	Civil	190	2,579	7,688	10,456
OI WINGII.	Defence	1,314	427	485	2,226
		%	%	%	%
1993		11	15	74	100
of which:	Civil	3	14	83	100
	Defence	54	22	24	100
1994	20101100	10	16	74	100
of which:	Civil	3	14	83	100
OI WITICIT.	Defence	50	24	26	100
1995	Deletice	10	19	70	100
of which:	Civil	3	18	79	100
OF WHICH,		52	24	24	100
1000	Defence		22	69	100
1996	Obah	9		77	100
of which:		2	22	27	100
1007	Defence	51	22		
1997	20.0	10	19	72	100
of which:		2	18	79	100
	Defence	50	23	28	100
1998		11	22	67	100
of which:		4	22	75	100
	Defence	51	25	24	100
1999		10	23	67	100
of which:	Civil	3	22	75	100
	Defence	50	29	21	100
2000		9	21	70	100
of which:	Civil	2	20	77	100
	Defence	47	28	25	100
2001	30.01100	12	24	64	100
of which:	Civil	2	25	74	100
or wallers.			19	22	100
	Defence	59	19	22	100

Notes:

1 Mainly own resources includes Other Private sector funds which is shown separately in ONS's First Release for Business Enterprise R&D.

2 See notes about revisions to past data.

Table 11 Intramural expenditure on R&D performed by UK businesses: detailed product groups, 1993 to 2001

£ million

		1993	1994	1995	1996	1997	1998	1999	2000	2001
Total		8,717	8,842	9,116	9,297	9,556	10,133	11,302	11,510	12,682
Agriculture, hunting and forestry; Fishing		89	80	.,	76	84	102	115	135	96
Extractive Industries		62	66		64	44	41	42	46	40
Food products and beverages; Tobacco prod	ucts	191	228	189	198	180	242	237	264	314
Textiles, clothing and leather products		44	22	23	27	33	33	28	29	31
Pulp, paper and paper products; printing and straw products	publishing; Wood and	40	44	39	57	44	49	45	38	34
Refined petroleum products and coke oven p	roducts: Processing of									
nuclear fuel		224	203	239	230	225	234	212	182	250
Chemicals, man- made fibres		721	689	701	627	680	688	718	682	522
Pharmaceuticals, medical chemicals and bot	anical products	1,679	1,820	1,813	1,852	2,151	2,238	2,535	2,846	3.040
Rubber and plastic products		67	72	60	67	60	66	72	54	45
Other non-metallic mineral products		42	56	54	60	47	56	59		41
Casting of iron and steel		50	51	46	39	39	47	41		28
Non-ferrous metals		16	15	20	15	15	20	22	21	19
Fabricated metal products		72	72	100	91	88	90	70	73	64
Machinery and equipment		593	689	583	577	622	640	642	703	977
Office machinery and computers		252	134	150	161	102	125	111	113	105
Electrical machinery and apparatus		a576	567	494	490	424	423	357	422	585
Radio, television and communication equipm	ent	558	517	602	662	655	772	867	1.024	1.044
Precision instruments		312	273	303	307	336	340	473	480	488
Motor vehicles and parts		682	669	795	926	924	913	1,060	864	870
Other transport equipment		17	24	18	30	50	72	99	158	208
Shipbuilding and repairs		18	17	20	20	15	36	76	72	83
Aerospace		782	860	886	812	893	1,039	1,237	1,091	1,260
Furniture; Other manufactured goods		28	28	21	16	25	20	33	27	31
Recycling		1	1		1		-	1	1	1
Electricity, gas and water supply		214	177	168	148	130	140	137	160	99
Construction		11	11	8	8	38	39	41	34	30
Wholesale and retail trade		**								55
Transport and storage		**			**					12
Post and telecommunications		389	408	414	455	496	449	565	674	733
Miscellaneous business activities; Technical	esting and analysis	118	104		141	142	157	196	131	343
Computer and related activities		635	744	675	749	680	688	713	611	724
Research and development services		199	178	247	369	313	346	448	428	493
Public administration		16	10	14	10	6	8	11	12	18

 <sup>..</sup> denotes disclosive figures.
 Zero denotes a value less than 0.5.
 See notes about revisions to past data.

Table 12 Current and capital expenditure, and as a percentage of the total, on R&D performed by UK Businesses: detailed product groups, 2001

	Total	Capital Total	Current Total	Salaries and wages	Other current	Total	Capital Total	Current Total	Salaries and wages	Other
	£m	£m	£m	£m	£m	%	%	%	%	%
Total	12,682	1,681	11,001	4,978	6,023	100	13	87	39	47
Agriculture, hunting and forestry; Fishing	96	16	79	40	39	100	17		42	41
Extractive Industries	40	1	38	21	17	100	4	96	53	44
Food products and beverages; Tobacco products	314	69	245	125	120	100	22	78	40	38
Textiles, clothing and leather products	31	1	30	25	5	100	2	98	80	18
Pulp, paper and paper products; Printing and										
publishing; Wood and straw products	34	6	29	10	19	100	17	83	29	54
Refined petroleum products and coke oven products										
Processing of nuclear fuel	250	53	198	73	125	100	21	79	29	50
Chemicals, man-made fibres	522	46	477	255	221	100	9	91	49	42
Pharmaceuticals, medical chemicals and botanical	-				-				100	-
products	3,040	507	2,533	1,058	1,475	100	17	83	35	49
Rubber and plastic products	45	8	37	20	18	100	18		43	39
Other non-metallic mineral products	41	6	35	18	17	100	15		43	42
Casting of iron and steel	28	0	28	28	**	100	1	99	99	-
Non-ferrous metals	19	1	17	9	9	100		92	46	47
Fabricated metal products	64	5	59	28	31	100	7		44	49
Machinery equipment	977	217	759	345	414	100			35	42
Office machinery and computers	105	6	99	41	58	100	6	94	39	55
Electrical machinery and apparatus	585	180	405	194	211	100	31	69	33	36
Radio, television and communication equipment	1,044	114	930	386	544	100	11	89	37	52
Precision instruments	488	44	444	228	216	100	9	91	47	
Motor vehicles and parts	870	50		410	410	100		-	47	47
	208			23		100			11	
Other transport equipment	83			47		100		.,	57	
Shipbuilding and repairs		35	1,225	427	798	100		97	34	
Aerospace	1,260					100			69	63 25
Furniture; Other manufactured goods	31	2		21	8					31
Recycling	1	0		0	0	100		94	63	
Electricity, gas and water supply	99	2		53	44	100	_		53	45
Construction	30	2		18	11	100	6		58	36
Wholesale and retail trades	55	2		43	10	100			78	19
Transport and storage	12		12		4	100		100		36
Post and telecommunications	733	27	706	314	392	100	4	96	43	53
Miscellaneous business activities; Technical testing						,,,,				
and analysis	343	160		120		100			35	18
Computer related activities	724	70		367		100				40
Research and development services	493	44		222		100			45	
Public administration	18	5	13	2	10	100	30	70	14	57

#### Notes:

<sup>1</sup> Zero denotes a value less than 0.5 2 .. denotes disclosive figures.

Table 13 Government and business enterprise personnel engaged on R&D in the UK, 1993 to 2001

Full time equivalents, thousands

	1993	1994	1995	1996	1997	1998	1999	2000	2001	% change in 2001 from 2000
Personnel engaged on R&D	450	450			407		450		150	
- Business Enterprise	156	150	145	142	137	148	153	145	152	4
- Research Councils	13	12	12	12	11	11	11	11	12	3
- Government Departments <sup>1</sup>	22	20	17	16	15	18	18	19	12	-36
Total Civil	159	148	143	141	135	145	149	144	146	1
Total Defence	32	35	31	29	28	32	33	31	29	-7
Researchers										
- Business Enterprise	84	79	82	82	83	91	92	86	93	9
- Research Councils	6	6	6	5	5	5	5	5	5	1
- Government Departments <sup>1</sup>	8	8	8	8	7	9	10	10	5	-52
Total Civil	81	75	78	78	78	87	87	82	85	3
Total Defence	17	18	17	17	17	19	20	19	19	-1
Technicians										
- Business Enterprise	39	40	33	33	30	32	33	30	28	-6
- Research Councils	3	2	33	3	30 3 3	3	3	3	3	5
- Government Departments <sup>1</sup>	4	4	4	3	3	4	4	4	3	-17
Total Civil	40	38	33	33	29	32	32	30	28	-5
Total Defence	6	8	7	6	6	7	7	7	6	-14
Admin & other staff										
- Business Enterprise	33	31	29	27	24	24	28	30	31	2
- Research Councils	4	4	4	4	3	3	3	3	4	5
- Government Departments <sup>1</sup>	9	8	5	5	4	5	5	5	4	-19
Total Civil	36	34	33	29	27	27	30	35	35	1
Total Defence	10	9	7	6	5	6	6	3	3	-6

Note:

Excludes NHS employment, as these figures were not available.

Table 14 Estimated GOR breakdown of expenditure on Intramural R&D in the Business, Government and Higher Education sectors, 20011

			£ million
	R&D performed within business (BERD)	R&D performed within Government Establishments (GOVERD) <sup>2</sup>	R&D performed within Higher Education Institutions (HERD)
United Kingdom	12,682	1,829	4,035
North East	118	19	142
North West and Merseyside	1,512	66	322
Yorkshire and the Humber	298	50	317
East Midlands	950	68	224
West Midlands	641	65	207
Eastern	2,913	277	366
London	737	224	980
South East	3,693	515	562
South West	1,022	254	178
England	11,885	1,537	3,297
Wales	136	49	155
Scotland	512	226	510
Northern Ireland	150	16	73

Estimated regional breakdown of personnel engaged on R&D in the Business and Government sectors,  $2001^{\circ}$ 

	R&D perforn	ned within business	R&D performed within Government establishments <sup>2</sup>			
	Full time equivalents 000's	% of the regional Labour Force <sup>3,4</sup>	Full time equivalents 000's	% of the regional Labour Force <sup>3,4</sup>		
United Kingdom	151.8	0.55	23.4	0.08		
North East	2.3	0.21	0.2	0.02		
North West and Merseyside	16.5	0.55	0.8	0.03		
Yorkshire and the Humber	6.0	0.26	0.6	0.03		
East Midlands	13.3	0.66	0.9	0.04		
West Midlands	11.1	0.45	0.8	0.03		
Eastern	28.7	1.07	3.5	0.13		
London	9.0	0.26	2.9	0.08		
South East	40.2	0.99	6.6	0.16		
South West	11.9	0.50	3.3	0.14		
England	139.0	0.59	19.7	0.08		
Wales	2.5	0.21	0.6	0.05		
Scotland	7.6	0.32	2.9	0.12		
Northern Ireland	2.6	0.37	0.2	0.03		

Regional GDP figures are not available at time of publication and therefore it is not possible to show R&D expenditure as a percentage of regional GDP.
 Figures include estimates for those areas of Central Government not available from the Government Survey and local authorities.

<sup>1</sup> Regional breakdown is based on the GOR (Government Office Region) classification.
2 Government sector covers Central Government only. Local Authorities, NHS and those areas of Central Government not available from the Government survey are excluded
3 Labour Force figure used is a head count. An estimate of the Labour Force in full-time equivalents(FTE) is not available. Using the head count figure gives a lower percentage than a FTE would give. Labour Force figures relate to those in employment, rather than all those economically active.

4 Labour Force figures are for Spring 2002.

Table 16 OECD Science and Technology indicators Gross Expenditure on R&D: International Comparisons, 1993 to 2001

	Year		JK Germa	ny	F	rance <sup>1</sup>		Italy <sup>2</sup>		Japan <sup>3</sup>	Canada		USA4	
Gross Domestic Product (GDP) <sup>5</sup>	1993	65	3.6 980	0.6		700.7		649.6		1,682.4	361.1		4,195.6	;
£ billion at ppp) <sup>6</sup>	1994	69				731.0		696.1		1,757.6	391.6		4,513.0	
Simon at PPP/	1995	72				784.7		753.9		1,915.2	441.4		4,798.7	
	1996	77:				779.2		773.9		1,986.3	447.7		4,991.9	
										0.045.4				
	1997	82				794.4		786.7		2,015.4	465.5		5,197.9	
	1998	86				854.5		860.7		1,988.3	487.1		5,635.5	
	1999	91				906.0		897.8		2,054.8	527.4		5,992.8	
	2000	96	2.6 1,386	5.5		971.1		935.5		2,130.7	558.6		6,300.3	
	2001	1,00	5.0 1,388	3.5	1	1,021.5		973.7		2,152.8	575.9		6,419.1	
ross Expenditure on R&D (GERD)	1993	13	3.2 2	3.1		16.8		7.3		44.0 (e)	6.1		105.9	)
billion at ppp)6	1994	13			(e)	17.1		7.3		45.1 (e)	6.9		109.5	,
- FFF	1995				(e)	18.1		7.5		51.4 (e)			120.4	
	1996				(e)	17.9		7.8		(0)	7.5		127.4	
	1997				(6)						7.8		133.9	
				.2	1-1	17.6		8.3		-				
	1998				(e)	18.5		9.2		-	8.7		146.6	
	1999			2.1		19.7		9.3		-	9.5		158.8	
	2000				(e)	21.2		10.0		-	10.5		171.1	
	2001	-1	3.8 34	.5	(e)	22.5 (	(p)	-		-	11.2	(p)	180.8	3
ERD as a percentage of GDP	1993	2	02 2.	35		2.40		1.13		2.62 (e)	1.70		2.52	2
	1994				(e)	2.34		1.05		2.57 (e)			2.43	3
	1995				(e)	2.31		1.00		2.69 (e)			2.51	
	1996				(e)	2.30		1.01			1.68		2.55	
					(0)	2.00					1.68			
	1997			29		2.22		1.05					2.58	
	1998				(e)	2.17		1.07			1.79		2.60	
	1999			44		2.18		1.04			1.81		2.65	
	2000	1	82 2.	49	(e)	2.18		1.07		**	1.87		2.72	
	2001	1.	87 2.	49	(e)	2.20 (	(p)			•	1.94	(p)	2.82	?
ERD as a percentage of GDP	1993	1	33 1.	58		1.48		0.60		1.86	0.90		1.78	3
	1994	- 1	28 1.	51	(e)	1.45		0.56		1.83	1.00		1.71	1
	1995			50	. ,	1.41		0.53		1.89	1.00		1.80	
	1996				(e)	1.41		0.54			0.97		1.87	
	1997			54	(0)	1.39		0.52			1.01		1.91	
					1-1									
	1998			57	(e)	1.35		0.52			1.07		1.94	
	1999			70		1.38		0.51			1.06		1.98	
	2000	1	20 1.	75	(e)	1.37		0.53		.,	1.09		2.04	
	2001	1	26 1.	76	(e)	1.37 (	(p)	0.56	(p)	**	1.11	(p)	2.10	)
OVERD as a percentage of GDP	1993	0	30 0.	36		0.51		0.24		0.26	0.28		0.26	3
	1994	0	30 0.	34		0.48		0.22		0.25	0.27		0.24	1
	1995			35		0.48		0.21		0.28	0.25		0.24	
	1996			34		0.47		0.20			0.25		0.22	
	1997			34		0.41		0.20			0.22		0.21	
	1998			34		0.40		0.22		**	0.22		0.20	
	1999			34		0.40		0.20		**	0.22		0.20	
	2000			34 33	(0)	0.38	(n)	0.20	/n1	**	0.22	(p)	0.18	
					(0)		(P)		(1)	**		(4)		
ERD as a percentage of GDP	1993			41		0.38		0.28		0.37 (e)			0.39	
	1994			41		0.38		0.27		0.36 (e)			0.38	
	1995			41		0.39		0.25		0.39 (e)			0.38	
	1996			42		0.39		0.27			0.45		0.38	
	1997	0	35 0.	41		0.39		0.32			0.45		0.37	7
	1998			40		0.38		0.34			0.49		0.36	
	1999			40		0.37		0.33			0.53		0.37	
	2000			40		0.41		0.33		**	0.55		0.38	
					101		/n1					/		1
	2001	0	40 0.	40	(e)	0.41 (	101				0.59	(D)	0.40	1

There are breaks in series for all data between 1996 and 1997.
 There are breaks in series for GERD and HERD between 1996 and 1997.

<sup>2</sup> There are breaks in series for GERD and HERD between 1996 and 1997.
3 Data for Japan are adjusted by OECD.
4 Excludes most or all capital expenditure.
5 The measure of GDP used is at market prices.
6 Amounts are converted to £ sterling using the purchasing power parities (ppp) developed by the OECD.
(p) = provisional.
(e) = estimate.

International comparison of gross expenditure on R&D by sector of performance and source of funding 2001

							Per cent
	UK	Germany <sup>1</sup>	France (p) <sup>2</sup>	Italy <sup>3</sup>	Japan (e)4	Canada (p)	USA (p)5
Percentage by sector of performa	ance						
Government	9.7	13.4	17.7	18.9	10.4	11.9	7.0
Business enterprise	67.4	70.5	62.4	50.1	70.3	57.5	74.4
Higher education	21.4	16.0	18.5	31.0	14.5	30.3	14.2
Other	1.4	-	1.4		4.8	0.3	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage by source of funds							
Government	30.2	31.5	38.7	50.8	20.9	31.3	26.9
Business enterprise	46.2	66.0	52.5	43.0	72.3	41.9	68.3
Abroad	18.0	2.1	7.2	6.2	0.1	17.8	-
Other <sup>6</sup>	5.7	0.4	1.6	-	6.7	9.0	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: OECD databank (May 2003)

Notes:

Notes:

1 Data for "other" included elsewhere.
2 Source of funds data for France are for 2000.
3 For Italy, sector of performance data are for 2000 and source of funds data are for 1996.
4 Data for Japan are OECD estimates and are for 1995.
5 Excludes most or all capital expenditure.
6 For UK data, "Other" consists of Higher Education & Private Non-Profit expenditure. For the remaining countries, "Other" represents other national sources.

(p) = provisional (e) = estimate

Table 18 R&D performed in the Business Enterprise sector (BERD), 1993 to 2001

£ billion at ppp1

Year	UK	Germany	France <sup>2</sup>	Italy	Japan <sup>3</sup>	Canada	USA4
1993	8.7	15.5	10.4	3.9	31.3	3.2	74.8
1994	8.8	16.0 (e)	10.6	3.9	32.1	3.9	77.2
1995	9.1	17.1	11.1	4.0	36.2	4.4	86.4
1996	9.3	17.0 (e)	11.0	4.2		4.3	93.2
1997	9.6	18.3	11.0	4.1	-	4.7	99.2
1998	10.1	19.8 (e)	11.5	4.4	-	5.2	109.3
1999	11.3	22.4	12.5	4.6	-	5.6	118.9
2000	11.5	24.3 (e)	13.3	5.0	-	6.1	128.8
2001	12.7	24.4 (e)	14.0 (p)	5.5 (p)	-	6.4 (p)	134.5 (p)

Source: OECD databank (May 2003)

Amounts are converted to £ sterling using the purchasing power parities (ppp) developed by the OECD.

There is a break in series between 1996 and 1997.

Data for Japan are adjusted by OECD.

Excludes most or all capital expenditure.

(p) = provisional (e) = estimate

Table 19 International comparison of Government funding of R&D in 2001 by socio-economic objective (percentage distribution)1

Per cent

		UK	Germany (p)	France (p)	Italy	Japan <sup>2</sup>	Canada (p)	USA <sup>3</sup>
Agriculture	e, forestry and fishing	3.9	2.4	2.1	1.9	3.5	10.3	2.5
	development	3.5	12.1	6.3	10.2	7.5	12.1	0.5
Energy		0.5	3.4	3.9	3.6	17.4	4.5	1.5
Infrastructi	ure	1.5	1.7	0.6	0.4	4.4	3.0	2.0
	ental protection	1.9	3.1	2.9	2.3	0.8	4.5	0.7
Health	Alle protection	15.0	4.0	5.8	7.0	3.9	11.3	24.8
	elopment and services	4.0	4.5	0.8	4.4	0.9	2.8	0.9
	atmosphere	1.6	1.8	0.8	1.9	1.9	4.5	1.2
	ent of knowledge	35.3	55.1	41.4	57.0	48.6	34.5	6.3
Civil space		2.1	4.7	9.8	7.3	6.7	6.6	7.1
Defence		30.5	7.1	23.2	4.0	4.3	4.8	52.7
	nere classified	0.3	0.1	2.3	· · · · · · · · · · · · · · · · · · ·	•	1.2	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total	£ million4	6,774	11,382	10,162	6,742	14,836	2,997	55,580

Source: OECD databank (May 2003)

Notes:

1 Data for Canada are for 2000.

2 Data for Japan are OECD estimates.

3 Excludes most or all capital expenditure.

4 Amounts are converted to £ sterling using the purchasing power parities (ppp) developed by the OECD.

# VAT missing trader intra-Community fraud: the effect on Balance of Payments statistics and UK National Accounts

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### 1. Summary

Data for UK trade released on 9 July 2003 includes revisions to imports and the balance of trade in goods for the period since 1999 to reflect initial adjustments for the impact of VAT missing trader intra-Community (MTIC) fraud. These revisions will also have some effect on GDP which will be taken into account when revised National Accounts estimates up to and including 2003 quarter two are published on 30 September. In the meantime this article gives an approximate estimate of this effect. These revisions will be incorporated in the *Quarterly National Accounts and Balance of Payments* First Releases and the *United Kingdom Economic Accounts* (UKEA) datasets to be released on 30 September 2003. These datasets will be consistent with the 2003 *Blue* and *Pink Books* to be published on 24 October 2003.

This particular type of VAT fraud was highlighted in November 2001 in the HM Treasury and Customs and Excise paper, *Tackling Indirect Tax Fraud*, published with the *2001 Pre-Budget Report*. In this paper, MTIC fraud was described as follows:

"VAT intra-Community missing trader fraud is a systematic criminal attack on the VAT system, which has been detected in many EU Member States. In essence, fraudsters obtain VAT registration to acquire goods VAT free from other Member States. They then sell on the goods at VAT inclusive prices and disappear without paying over the VAT paid by their customers to the tax authorities. The fraud is usually carried out very quickly, with the fraudsters disappearing by the time the tax authorities follow up the registration with their regular assurance activities."

The 'carousel' version of the fraud occurs when goods that have been imported into the UK are sold through a series of transactions before being re-exported to another EU Member State. They may then be re-imported back into the UK.

The fraud impacts on intra-EU trade statistics as these are collected via the VAT system. Whilst 'carousel' transactions are captured in export data, the acquisition of the goods in MTIC frauds is not included in import data. Imports are, therefore, under-recorded. This fraud is also a factor contributing to the recent widening asymmetry between UK and other EU Member States' trade data – the difference between what other EU Member States record as exports to the UK and what the UK records as imports from other Member States, and correspondingly for UK exports.

The purpose of this article is to explain how the fraud causes the trade deficit to be understated, how the Office for National Statistics (ONS) has made the revisions, and what their impact is on the UK National Accounts and EU asymmetries.

The revisions involve upward adjustments to imports of £1.7 billion in 1999, £2.8 billion in 2000, £7.1 billion in 2001 and £11.1 billion in 2002. There are corresponding downward revisions to the balance on trade in goods.

The revisions to imports also impact on estimates of total GDP and its expenditure components. The imports revisions will be incorporated in the full National Accounts in September at the same time as other new data. However, as GDP estimates are derived using information from production and income as well as expenditure, GDP revisions will be much smaller than those to imports.

A preliminary analysis suggests that the impact of the trade revisions on GDP would be negligible in 1999 and would reduce GDP growth by 0–0.2 per cent in both 2000 and 2001. However, other revisions being made for the *Blue Book* are expected to offset these downward adjustments, leaving GDP broadly unchanged compared with currently published estimates (apart from the effects of annual chain-linking). Estimates of growth for more recent quarters, from the beginning of 2002, will not be affected as they

are made using primarily data on output which are not affected by revisions to imports.

As with the National Accounts, there will be other revisions in the *Balance of Payments* First Release on 30 September consistent with the 2003 *Pink Book*. Current indications are that there will be upward revisions to the balance on trade in services of the order of £1–2 billion a year. This will offset a significant proportion of the effect on the overall trade balance of the revisions introduced here to account for the impact of MTIC fraud in 1999 and 2000, but only a small proportion subsequently.

Following the National Statistics Code of Practice and Protocols on Revisions and Release Practices, these revisions are being published as early as possible, consistent with avoiding creating uncertainty for these market sensitive statistics. However, it will not be possible to incorporate the revisions into the published National Accounts until all the analysis undertaken for the Blue Book has been completed, the results of which will be published on 30 September. One unavoidable consequence of publishing as early as possible is, therefore, that there will be a temporary inconsistency between estimates of UK trade in goods and the National Accounts. During this period, the ONS's best estimates of total GDP will be those published successively on 27 June, 25 July and 22 August. In order to help users, however, and to minimise uncertainty surrounding these market sensitive statistics, this article contains an approximate estimate of the effect of the revisions to imports on GDP, drawing on the analysis carried out so far in preparing the Blue Book (see Section 6 below), and also gives an indication of the effect of other Blue Book revisions.

#### 2. Background

#### The VAT system and EU trade statistics

The measurement of trade in goods within the European Union is based on the Intrastat system which relies on the VAT system.

As part of the VAT return which firms complete each quarter, there is a declaration of the total value of exports of goods to customers in other EU Member States and the total value of imports of goods from suppliers in other EU Member States. These returns provide a direct estimate of the size of UK exports to and imports from the EU. They are also used to underpin a requirement to fill in a more detailed, monthly Intrastat return (if the value of the declarations on the VAT return exceed a given threshold – currently £233,000 per annum in the UK).

The Intrastat system therefore relies on the VAT returns providing an accurate and comprehensive record of trade flows.

#### VAT missing trader fraud

In recent years a particular type of cross-border fraud, based on the VAT system, has come to light which is now known to have caused the trade deficit to be understated. This EU-wide fraud is known as VAT missing trader intra-Community fraud (MTIC fraud).

This type of VAT fraud was highlighted in November 2001 in the HM Treasury and HM Customs and Excise paper, *Tackling Indirect Tax Fraud*, which was published as part of the *2001 Pre-Budget Report*. In this paper, MTIC fraud was described as follows:

"VAT intra-Community missing trader fraud is a systematic criminal attack on the VAT system, which has been detected in many EU Member States. In essence, fraudsters obtain VAT registration to acquire goods VAT free from other Member States. They then sell on the goods at VAT inclusive prices and disappear without paying over the VAT paid by their customers to the tax authorities. The fraud is usually carried out very quickly, with the fraudsters disappearing by the time the tax authorities follow up the registration with their regular assurance activities."

The 2002 Pre-Budget Report provided an update on the situation.

There are two main types of VAT MTIC fraud: acquisition and carousel fraud:

Acquisition fraud is where the goods are imported from the EU into the UK by a trader who then goes missing without completing a VAT return or Intrastat declaration. The 'missing trader' therefore has a VAT free supply of goods, as they make no payment of the VAT monies due on the goods. He sells the goods to a buyer in the UK and the goods are available on the home market for consumption.

Carousel fraud is similar to acquisition fraud in the early stages, but the goods are not sold for consumption on the home market. Rather, they are sold through a series of companies in the UK and then re-exported to another Member State, hence the goods moving in a circular pattern or 'carousel'.

Carousel fraud is currently regarded as the dominant type in terms of loss of government revenue. For reasons explained later, the adjustments described in this article relate only to part of the carousel variant. The fraud is not exclusive to the UK. Because these VAT arrangements apply throughout the European Union the fraud can be perpetrated between any two or more Member States.

#### The impact of MTIC fraud on the trade statistics

As discussed earlier the intra-EU trade in goods statistics rely on the VAT forms being a correct record of trade transactions. MTIC fraud affects the measurement of trade in goods through the role of the missing trader.

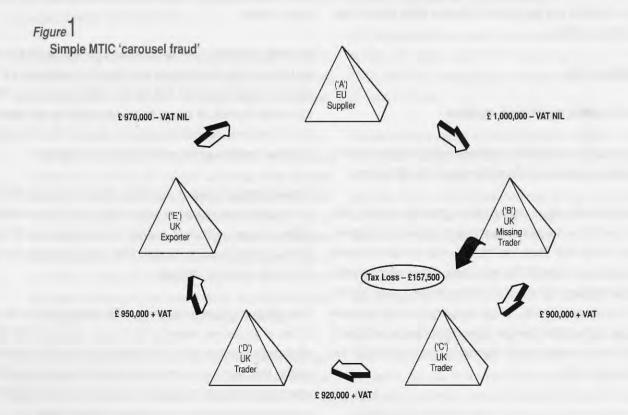
The carousel fraud is illustrated in Figure 1. The UK Trader B imports goods from the EU supplier A. Trader B should pay VAT on sales to Trader C and fill in a VAT return. Trader B ceases operation as soon as it has sold the goods on to Trader C, keeping the VAT and hence not filling in VAT forms. Without the VAT form there is no record of the transaction for UK import statistics. The carousel then involves various traders selling the goods on (in this example, C and D) until the goods reach Trader E. Trader E exports the goods to non-UK Trader A; Trader B imports them again from Trader A, and the carousel continues. The transaction of the UK exporter E will be recorded alongside his VAT return because insufficient evidence of export would result in the exporter being required to charge and account for VAT on his onward sale. The VAT system (and therefore the Intrastat collection of trade statistics) picks up the exports of any 'carouselled' goods, but does not pick up the associated import at the time the carouselled goods entered the UK. The balance of trade, exports minus imports, is therefore overstated.

The treatment of this imbalance in the trade statistics is guided by the European System of Accounts methodology. This is described in more detail at Section 6 below. Since the conclusion drawn for National Accounts purposes is that adjustments for fraudulent activity such as this be included in the accounts, it was concluded that any revisions to account for the impact of MTIC fraud in the trade statistics should be added to the imports and therefore included in turn in the National Accounts.

# 3. Estimation of the impact of MTIC fraud on trade statistics

The measurement of illegal activity is by definition an inexact science; statisticians are required to estimate figures in areas where traders are seeking to conceal their identity or otherwise to trade covertly. At present there is no internationally approved methodology for including adjustments for the impact of MTIC fraud in the trade figures and the National Accounts.

ONS in partnership with HM Customs & Excise have developed a methodology to estimate these adjustments. The method used relies heavily on information uncovered during HM Customs & Excise's operational activity. As such it cannot be detailed for risk of prejudicing current activity, including criminal investigations and prosecutions, and more generally undermining HM Customs & Excise's ability to tackle the fraud effectively. The method is applied only to some of the transactions involving mobile phones and computer components – the commodities of choice of the fraudsters. It specifically excludes other commodities and adjustments for the acquisition variant of the fraud which cannot be quantified at present.



This adjustment has been assessed for coherence with other data. In particular ONS Supply and Use balances, used for the construction of GDP estimates, have been used to validate and inform the relevant sizes of adjustments on the specific products that are predominantly used to carry out the fraud. The asymmetry analyses (see Section 5 – EU asymmetries, below) have also been used as further input to this process. The revisions for the impact of MTIC fraud on the trade statistics are, however, just one of a number of factors influencing the asymmetry discrepancies. These other factors are listed in the Annex.

The analysis has led to the following adjustments for the impact of MTIC fraud, which have been added to existing UK import figures. Table 1 shows the adjustments for the impact of MTIC fraud at both current and constant prices expressed both in £ billion and as percentages of imports of goods and services.

Table 1: Adjustments for the impact of MTIC fraud on imports of goods and services

	Curre	nt prices	Constant 1995 prices				
	£ billion	% of imports	£ billion	% of imports			
1999	1.7	0.7	2.1	0.7			
2000	2.8	1.0	3.4	1.0			
2001	7.1	2.4	8.5	2.5			
2002	11.1	3.8	14.0	4.0			

It is notable that constant price impacts are larger than current price impacts because the goods favoured by fraudsters are the goods that are high value and low volume such as computer components and mobile phones, where prices have been falling relative to other prices in the economy.

As discussed, the nature of the activity means that any adjustments made for the impact of the fraud are necessarily subject to a large margin of error. This was particularly so prior to 2002 when less transaction data were available. Nevertheless there is no doubt that the adjustments improve the coherence of the trade statistics and National Accounts. While the Balance of Payments and the UK National Accounts will be adjusted to account for the impact of MTIC Fraud, the Overseas Trade Statistics (OTS) published by HM Customs & Excise will not be adjusted. Trade statistics on a Balance of Payments basis include a number of adjustments, for example estimates of alcohol and tobacco smuggling, which are not included in the detailed data published by HM Customs & Excise.

It may be necessary to update calculations as part of future *Blue Book* processes. An updating of these calculations may involve an adjustment for carousel fraud in other commodities and for acquisition fraud. As stated, the present adjustments relate only to mobile phones

and computer components. It is likely that this constitutes a sizeable proportion of the carousel fraud, but a fuller assessment has not been possible at this stage.

From the particular perspective of the estimation of GDP and UK National Accounts as a whole, acquisition fraud is a lesser concern. Consumer demand is likely to be understated in the case of both carousel and acquisition fraud, but more so in the case of acquisition fraud since carousels are generally selling to other businesses, not to consumers. In the case of acquisition fraud, consumer demand may be understated since households may not declare all of these purchases in consumer surveys and, similarly, the sellers of the goods are less likely to be captured by retailing enquiries. Therefore, total domestic expenditure and imports will be mis-stated by similar amounts. However any acquisition fraud missed would impact on the current account.

# 4: Adjustments to trade in goods due to the impact of MTIC fraud

The revised annual profiles of trade in goods figures and associated balances are illustrated in Figures 2 to 8. Due to the methodology available to produce the revisions, it should be noted that revisions prior to 2002 are less robust than those for 2002 (and future revisions). Figure 2 shows imports of goods from 1990 onwards both including and excluding the revisions to account for the impact of MTIC fraud as well as exports of goods.

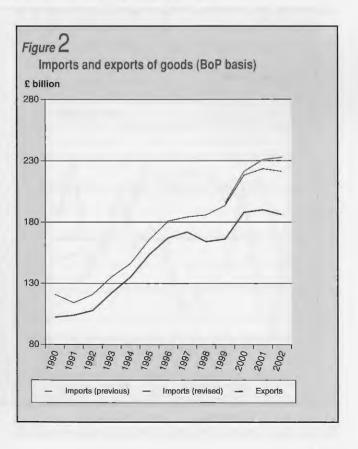


Figure 3 shows the balance on trade in goods from 1990 onwards both including and excluding the revisions to account for the impact of MTIC fraud.

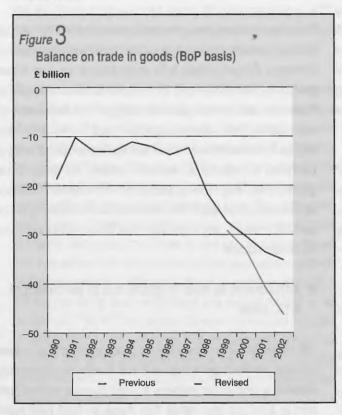


Figure 4 shows the balance on trade in goods as a percentage of GDP at current prices both including and excluding the revisions to account for the impact of MTIC fraud.

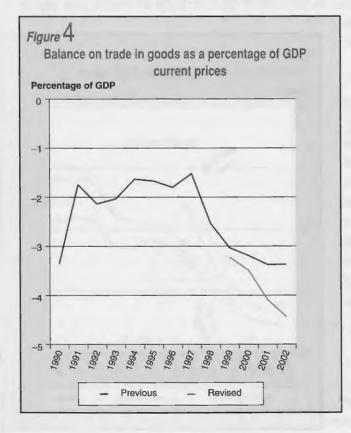


Figure 5 shows the balance on trade in goods, both including and excluding the revision to account for the impact of MTIC fraud, as a percentage of GDP at constant 1995 prices, as published in the *Quarterly National Accounts* First Release on 27 June 2003.

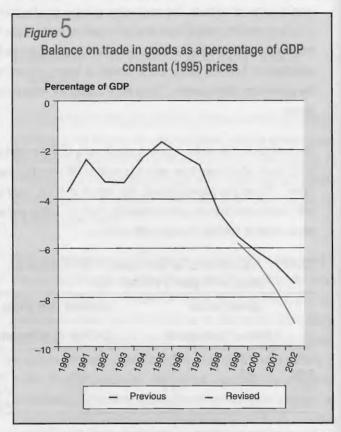


Figure 6 shows the balance on the current account from 1990 onwards both including and excluding the revisions to account for the impact of MTIC fraud.

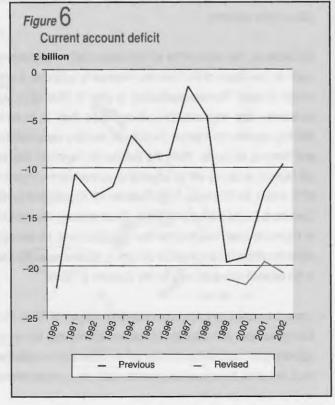


Figure 7 shows the current account as a percentage of GDP at current market prices both including and excluding the revisions to account for the impact of MTIC fraud.

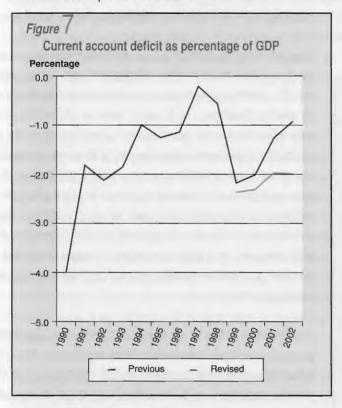
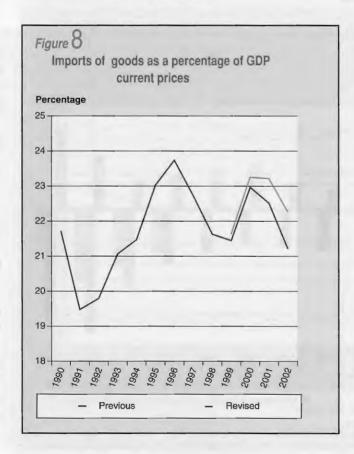


Figure 8 shows imports of goods as a share of gross final expenditure at current market prices both including and excluding the revisions to account for the impact of MTIC fraud.



The annual revisions have been broken down into monthly and quarterly components in the monthly *UK Trade* First Release for the purpose of introducing the adjustment into the published figures in this release only. In the future, as with other balance of payments adjustments, ONS will make annual adjustments available with the publication of the *Pink Book* each year. Monthly and quarterly figures and commodity and country breakdowns will not be made available as the quality of the estimates obviously deteriorates at more detailed levels of disaggregation. Furthermore, HM Customs & Excise advise that publication of detailed adjustments is likely to affect their ability to tackle the fraud effectively and reveal information which risks prejudicing ongoing and future criminal investigations and prosecutions. Within these constraints, ONS and HM Customs & Excise are considering what might be done to help users interpret short-term movements in exports and imports.

#### Analysis of effect of the revisions on interpretation of exports

The appropriate treatment of the revisions being introduced is to adjust imports upwards by the relevant amounts. This is in accordance with National Accounts and Balance of Payments methodology. However, given that exports of carouselled goods are being recorded in the export figures, the profile of the import adjustments to account for MTIC fraud could be used to inform analyses of export trends.

Figure 9 shows the quarter on quarter growth in exports of goods at constant prices. It compares total export figures with exports adjusted to exclude the MTIC adjustments (i.e. applying the adjustments described in this article to exports rather than imports).

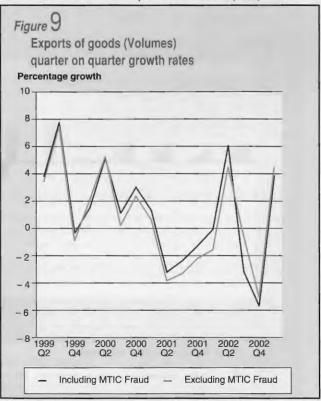
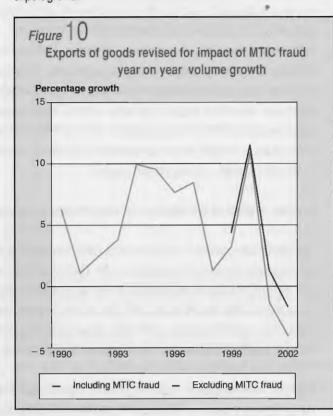


Figure 10 shows a profile of the annual growth of exports, again with unadjusted and adjusted data. Due to the methodology available to produce the revisions, it should be noted that revisions prior to 2002 are less robust than those for 2002 (and future revisions). This should be taken into consideration when analysing the effects on export growth.

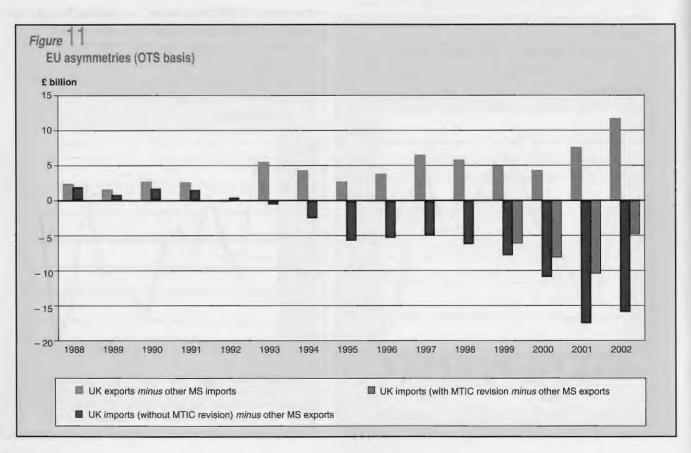


#### 5. EU asymmetries<sup>2</sup>

It is now clear that MTIC fraud has made a major contribution to increased asymmetries between EU Member States trade figures.

Asymmetry analyses arise because trade can be looked at from the perspective of either of the countries involved. For example, the UK's estimate of its exports to country X should be the same as country X's estimates of its imports from the UK, and the UK's estimates of its imports from country X should be the same as country X's estimates of its exports to the UK. These types of checks are known as mirror statistics and the divergences between the mirror statistics, as asymmetries. In practice there are a number of technical and methodological reasons that means these theoretical identities will not hold. However comparisons of this type have long been recognised as helpful cross-checks on trade data (the Annex discusses a number of possible explanations of why there are non-zero asymmetries).

The Statistical Office of the European Communities (Eurostat) produces an analysis of all Member States asymmetries. Figure 11 shows the two mirror relationships for the UK. This Figure shows the import asymmetries on an Overseas Trade Statistics (OTS) basis both with and without the MTIC adjustment, although it should be borne in mind that the OTS statistics will not be revised to take account of the impact of MTIC fraud.



The mirror statistics show both higher imports and lower exports than UK trade data. In recent years, both differences – so-called asymmetries – act in the same direction as far as its effect on the trade balance is concerned. A mirror estimate of the UK balance of trade is therefore substantially below the UK estimate as shown at Figure 12 below, which also includes an estimate of the deficit on trade in goods that takes into account the revisions to account for the impact of MTIC fraud set out in this article.

Prior to 1993 the scale of the divergence was relatively small, an average of £1.8 billion a year in the five years up to 1992. However, since the introduction of the single market in 1993, the figures have been diverging to an increasing extent. The increasing divergence is largely driven by the imports data. The dramatic divergence has meant that in 2001 the UK balance of trade deficit based on the EU mirror data was £31.5 billion, set against an estimate of £6 billion based on UK data. Following the revisions discussed in this article, the UK balance of trade in goods deficit for 2001 is now estimated at £13.1 billion. A significant part of the divergence is therefore now resolved.

More generally the Eurostat mirror statistics show that other EU member states have import and export asymmetries in the same directions as those shown for the UK in Figure 11. MTIC fraud is likely to affect the trade statistics in many EU economies because the conditions for it apply throughout the EU.

It should be emphasised that MTIC fraud is not the only cause of the EU asymmetries. Figure 11 demonstrates that the revisions to account for the impact of MTIC fraud will account for a significant amount (and the rapid increase in recent years), but the Annex describes many other causes of the asymmetries. Some of these causes are not specifically related to membership of the EU. For example, the UK has significant export and import asymmetries with the USA, and these, by definition, are not related to the MTIC fraud.

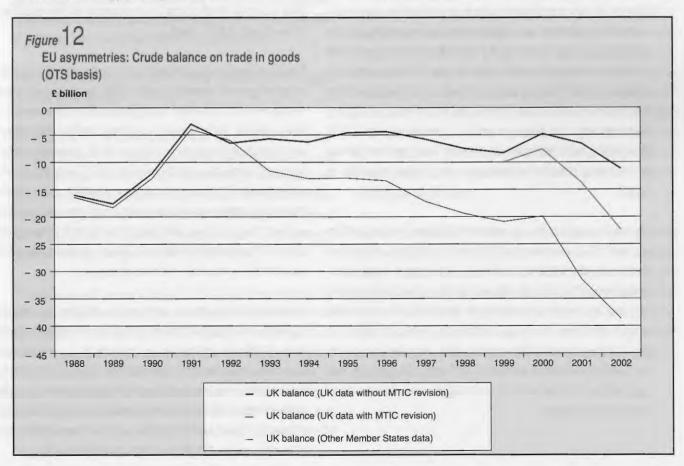
## Adjustments to the National Accounts and estimates of GDP due to the impact of MTIC fraud

#### National accounting and illegal activity

National Accounts are constructed according to the European System of Accounts (ESA) 1995. The purpose of this is to give a standard so that all countries' figures are comparable against each other. At the most basic level the ESA specifies whether transactions / activities should or should not be included in the National Accounts.

The ESA took explicit account of illegal activity when considering the definition of a transaction:

"1.42. The definition of a transaction stipulates that an interaction between institutional units be by mutual agreement .......... Illegal economic actions are transactions only when all units involved



enter the actions voluntarily. Thus, purchases, sales or barters of illegal drugs or stolen property are transactions, while theft is not."

Recognising these guidelines, the UK has already taken a step towards the incorporation of illegal activity in the UK National Accounts. In *Blue Book* 2001, ONS introduced estimates for the smuggling of tobacco and alcohol into the UK involving adjustment of consumer demand, imports of goods and compensation of employees.

Incorporating an adjustment for the impact of MTIC fraud into the National Accounts involves a judgement over whether the activity should be in the accounts at all. The relevant consideration is that all involved in transactions forming part of a MTIC carousel are participating by mutual agreement (even if some may not be involved in the fraud), and so complies with section 1.42 of the ESA above. In this way, the transactions should be recorded in both import and export flows. However the non-payment of VAT by the UK missing trader is regarded as theft from the government and these transactions will therefore not be recorded. Government revenue figures will be recorded as received, and not be adjusted upwards for tax stolen.

#### **Estimates of GDP**

GDP in the UK is estimated using three approaches, by directly measuring production, by measuring the income generated by the production and by measuring the expenditure on the goods and services produced. The ONS believes that the best benchmark estimate of GDP at current prices comes from incorporating information on production, income and expenditure in a Supply Use framework (see below) to produce a single estimate of GDP. Short-term growth estimates, on the other hand, are best derived by estimating changes in production using indirect measures of output.

Imports are used in the estimation of GDP from the expenditure approach. They are subtracted from other expenditure components so the expenditure total only relates to domestically produced goods and services. Therefore, the substantial upwards revisions to imports of goods, as a result of adjusting for the impact of MTIC fraud, would suggest that there should be a substantial downward revision to the estimates of both GDP level and growth. However, because of the complex methods of estimating GDP using data from all three approaches, the effect is much less straightforward than the effect on imports data alone.

#### Benchmark estimates

Benchmark estimates for the level of GDP at current prices are estimated using income, expenditure and production approaches which are reconciled and balanced using a Supply Use framework. Within the Supply Use framework, the supply (domestic production plus imports) of 123 products is compared to the demand for those products. Simultaneously, the outputs of 123 industries are compared to the inputs into each industry. Supply and demand should be equal. as should industrial inputs and outputs. The raw data within the Supply Use table are adjusted to produce a balance which generates a single, coherent measure of GDP; i.e. in which at the end of the balancing process the GDP totals of income, expenditure and output components are all the same as each other. The adjustment process takes account of the quality of the data in each cell. This process draws on all the available data so, in effect, GDP is a weighted average of production, income and expenditure information. However, the weight given to each of the individual components varies from product to product and across time. In practice though, production data are generally considered the most reliable and are given the greatest weight.

The Supply Use balance is first published 18 to 21 months after the end of the year to which it relates. So, for *Blue Book* 2003, there will be a preliminary balance for 2001, which will include an initial adjustment for the impact of MTIC fraud. At the same time, the tables for 1996 to 2000 are being revised and rebalanced. For 1999 and 2000, the revisions will include the incorporation of initial adjustments for the impact of MTIC fraud.

The use of import data adjusted for the impact of MTIC fraud leads to higher figures for imports of goods, which need to be incorporated into the accounts. In terms of the aggregate differences between the three measures, this increases the difference between the production and expenditure measures in 1999 and 2000. However in terms of the specific products primarily used in MTIC frauds, the converse is true. Classes 73, 'electronic components' and 74, 'transmitters for TV, radio and phone' have for some time seen demand outstripping supply. In this way the existing National Accounts balance provides support for the revisions introduced to account for the impact of MTIC fraud which has the effect of increasing supply.

Constant price figures are produced by deflating the balanced expenditure estimates at current prices. The full impact on growth in volume terms is expected to be similar to the current price effect but will be confounded by the introduction of annual chain-linking at the same time. An article explaining the effects of annual chain-linking on the *Blue Book* 2002 dataset was published in the April 2003 edition of *Economic Trends* and is available on-line at www.statistics.gov.uk/ CCI/article.asp?ID=328&Pos=&ColRank=1&Rank=224.

#### Short-term growth estimates

Supply Use tables are not compiled for the most recent periods. Instead, the ONS relies on a production based measure of GDP which is designed to measure short-term changes in output. Although expenditure and income based estimates of GDP are produced, they have little or no weight in the estimation of GDP with the income and expenditure measures being adjusted to bring them into line with the output measure.

As MTIC fraud activity is not thought to have a significant impact on the output measure of GDP, incorporation of the adjustments will have little or no effect on estimates of growth for more recent quarters since the start of 2002. However, the expenditure data that balances with the output data in these quarters has up to now, underrecorded imports of goods. When the revisions to import components are incorporated in the National Accounts for the estimates to be published on 30 September, the alignment and other adjustments that are used to help bring the expenditure measure into line with the output measure will be reviewed.

The upward revision to imports of goods to account for the impact of MTIC fraud should help to resolve the larger than usual alignment adjustments currently in place in the second half of 2002. These adjustments in part reflect the distortions in the quarterly path of expenditure data due to trends in the adjustments for the impact of MTIC fraud. The revision to import data means that the alignment adjustments required to bring the expenditure and output measures of GDP into balance will be smaller throughout 2002.

# Estimates of the expected effect of the revisions for the impact of MTIC fraud on GDP

The effects of the revisions to account for the impact of MTIC fraud on GDP will not be incorporated into the National Accounts, and hence published estimates of GDP from the output, expenditure and income perspectives or their components, until the *Blue Book* 2003 consistent *Quarterly National Accounts* First Release is published on 30 September. In the meantime, approximate estimates of the effect of the adjustments on GDP are given below.

The multi-layered balancing approach to benchmark estimates of GDP described above mean that it is not possible to provide a precise assessment of the impact of the MTIC fraud revisions. Revisions are usually made following an assessment of the total change to each of the three measures of GDP due to all the revisions taken together, not for a single component in isolation. However the ONS has attempted to make an assessment of what the balance, and hence the level of GDP, would have been without the revisions in order to judge the impact of MTIC fraud.

The figures shown in Table 2 below are, therefore, approximate estimates of the impact of making adjustments for the impact of MTIC fraud on GDP levels at current prices. The table also shows an implied estimate for the effect on GDP growth at constant 1995 prices using existing estimates of the price deflators.

Table 2: Estimates of expected effect on GDP percentages

	Level at Annual current prices	growth¹ at constant prices
1999	Negligible	Negligible
2000	-0.2 to 0	-0.2 to 0
2001	-0.4 to -0.2	-0.2 to 0
2002	-0.4 to -0.2	Negligible
2003 Q1	-0.4 to -0.2	Negligible

<sup>1</sup> Change on year earlier.

The estimated effect of the imports adjustment on GDP is quite modest when compared to the size of the adjustment. This is not surprising because, as explained earlier, GDP is derived using data on production and income as well as expenditure. Taking on the imports adjustment has led to a reassessment of all of the components of GDP, not just those directly affected by the relevant products. Looking at GDP in terms of expenditure, the counterpart to the upward adjustment to imports is most notable in household final consumption and gross fixed capital formation, but also affects other components. However, this does not imply a direct relationship between these components and the initial adjustments for MTIC fraud. Put another way, these estimates do not represent an internally consistent analysis of the effects of the initial adjustments for the effects of MTIC fraud on GDP and its components. Rather they are indications of how ONS estimates of GDP and its components will change as a result of absorbing the revisions to imports and reviewing other aspects of the National Accounts. The effect on the level of GDP in 2002 and the first quarter of 2003 is broadly the same as for 2001 because GDP growth from the start of 2002 is determined primarily by output data.

In terms of interpretation, the estimates should be regarded as having a similar status as the estimates of revisions due to annual chain-linking that were published in the April 2003 *Economic Trends*. The eventual *Blue Book* dataset will reflect both of these revisions, but also will reflect new and updated survey data and other changes. The precise impact of all the changes, including the effect on GDP at constant prices, will not be known until the *Blue Book* dataset is released.

#### Other revisions

As usual, the *Blue Book* dataset will reflect other new data. In particular, for 2001 there will be information from the Annual Business Inquiry, from the Inland Revenue and from the annual International Trade in Services Inquiry (ITIS). Preliminary indications are that the impact of most of these revisions will be to increase the estimates of components of GDP. Broadly, the impact of these is thought to offset the adjustment for the impact of MTIC fraud adjustments in 2000 and 2001. Therefore, the level and growth estimates for GDP at current prices published in this year's *Blue Book* will be broadly similar to those already published. Any revisions to volume growth estimates will be mostly attributable to the introduction of annual chain-linking.

# Estimates of the effect of the adjustment for the impact of MTIC fraud on the Balance of Payments Current Account

As with the National Accounts, there will be other revisions in the *Balance of Payments* First Release on 30 September consistent with the 2003 *Pink Book.* Current indications are that the main other revisions will be upward revisions to the balance on trade in services of the order of £1–2 billion a year. This will offset a significant proportion of the effect on the overall trade balance of the adjustments for the impact of MTIC fraud in 1999 and 2000, but only a small proportion subsequently.

#### 7. Conclusion

The figures presented in the latest *UK Trade* First Release and shortly to be presented in the 2003 *Blue Book* contain revisions to imports of goods due to the introduction of an adjustment for the impact of MTIC fraud. Such an adjustment is necessarily tentative and subject to uncertainty, but it is clear that making and publishing this adjustment improves the overall coherence of the accounts and the wider presentation of the economy in official statistics.

#### Notes

- Estimates of GDP to be published on 22 August will be based on unrevised trade data.
- 2. The data used in the asymmetries section are based on Eurostat trade statistics from Customs administrations. These are on a different basis and therefore not directly comparable to trade statistics on a Balance of Payments basis used elsewhere in this article. More details about the adjustments made by the ONS to meet the IMF Balance of Payments Manual (BPM5) definition and the data sources can be found in *United Kingdom Balance of Payments: the Pink Book*.

## **ANNEX**

## Factors Influencing EU Asymmetries In Trade in Goods

While the adjustments for the impact of VAT MTIC fraud have made a major contribution to increased asymmetries between UK and other EU Member States' trade figures there are a number of other factors which also contribute to these asymmetries. This Annex explores some of these other factors influencing EU asymmetries in trade in goods.

The agreed international guidelines for trade statistics are those published by the United Nations 'International Merchandise Trade Statistics: Concepts and Definitions'. This is the standard to which most countries aspire. It consists of recommended guidelines rather than hard and fast rules. This can lead to inconsistencies between countries because some are easier to implement in one country than another. The list below sets out the known reasons for these inconsistencies:

- Valuation differences
  - For statistical purposes the valuation bases recommended in the *International Merchandise Trade Statistics Concepts & Definitions* published by the United Nations and adopted by Customs are:
  - The valuation of exports is on a free on board (f.o.b.) basis,
     i.e. the cost of goods to the purchaser abroad, including:
  - · packaging;
  - · inland and coastal transport in the UK;
  - · dock dues;
  - · loading charges; and
  - all other costs such as profits, charges and expenses (e.g. insurance) accruing up to the point where the goods are deposited on board the exporting vessel or aircraft or at the land boundary of Northern Ireland.

The valuation of imports is on a *cost*, *insurance* and *freight* (c.i.f.) basis including:

- · the cost of the goods;
- · charges for freight and insurance; and
- all other related expenses in moving the goods to the point of entry into the UK (but excluding any duty or tax chargeable in the UK).

When goods are re-imported after process or repair abroad the value includes the cost of the process or repair as well as the value of the goods when exported.

Because of its link with VAT, the primary valuation for trade in goods with EU countries is that required for VAT accounting purposes, usually the invoice value. Regular sample surveys are conducted by HM Customs & Excise to establish conversion factors to adjust the invoice values to produce the valuation basis required for statistical purposes. Separate factors are imputed for a range of different delivery terms and for trade with each Member State.

The value recorded for imports and exports includes any duties or levies that have been applied to goods originating in non-EU countries but which have since cleared EU Customs procedures in one EU country prior to moving onto other EU countries.

- · Exchange rate:
  - The value recorded must be in the national currency even if the transaction was completed in another currency. Use of different exchange rates by the exporter and the importer can cause discrepancies.
- Timing differences resulting in movements of goods reported in different months by exporting and importing countries.
- Goods classified to different commodity codes by importer and exporter.
- · Reporting concessions and simplifications:
  - Countries allow special concessions for large traders. For example shipments of mixed products (e.g. vehicle parts) can be reported under one commodity code. Countries may have different thresholds below which value or tonnage a detailed commodity breakdown is not required.
- Methodological discrepancies in reporting:

The trade statistics compiled by HM Customs & Excise are in accordance with the 'general trade' system of recording which is described in *International Merchandise Trade Statistics Concepts & Definitions* published by the United Nations. They comprise all merchandise crossing the national boundary of the UK including goods imported into and exported from HM Customs & Excise warehouses and free zones. Imported goods are recorded whether or not at the time of importation they are intended for use in the UK or for re-export. Import statistics therefore include British goods re-imported and goods imported for process or incorporation with other goods and subsequent re-exportation.

Such re-exports are not distinguished from exports of UK produce.

Goods in transit through the UK (even where transhipment is involved) are not included in the statistics.

The 'special trade' system of recording that is used for data supplied by HM Customs & Excise to Eurostat records transactions across the customs boundary (e.g. on release from a Customs & Excise warehouse).

- · Differences in method of recording leased goods.
- Goods may be traded while in transit from one country to another (e.g. grain and crude oil).
- · Reclassification of goods for confidentiality.
- Suppression of data to avoid disclosure of confidential information.
- Differences between country of consignment and country of origin and between country of consignment and country of final destination.
- · Fraudulent declarations.
- · Errors in data collection and processing.

All the above can apply equally to EU trade and to non-EU trade.

A lack of consistency between Member States in implementing the Intrastat system for EU trade introduced some additional causes of discrepancies for trade within the EU:

- no common approach to adjustments for non-response and below threshold trade;
- differences in the treatment of distance selling arrangements (e.g. mail order); and
- transactions between a reporting trader in one Member State with a trader below the threshold in another Member State so that the transaction is not reported in both countries.

# Introducing a new method to calculate index weights for the Producer Price Indices

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### Summary

- The Producer Price Index (PPI) is currently being rebased which means updating the weighting structure from the base year 1995=100 to 2000=100. As a part of this process a review of certain methodological aspects has been undertaken.
- One such change was to look at the approach to the calculation of index weights and adopt a more sophisticated method to estimate sales to the domestic market, used to weight detailed PPI series to produce indices at a more aggregate level.
- Introducing this new method of determining weights will only lead to small differences in index values at the aggregate level with larger differences confined to more detailed indices.
- The rebased results are to be published in October 2003. At that point there will be further changes due to the updating of the weights.

#### Introduction

### Background to Producer Price Inquiry (PPI)

The PPI measures the change in prices of goods bought and sold by UK manufacturers. Overall there are four types of PPI series produced, which are:

- Gross Sector Output (GSO);
- Net Sector Output (NSO);
- Gross Sector Input (GSI);
- Net Sector Input (NSI).

With the difference between output and input being:

 Output prices – measure the change in price of goods sold by UK manufacturers;  Input prices – measure the change in price of goods bought by manufacturers for use in the manufacturing process.

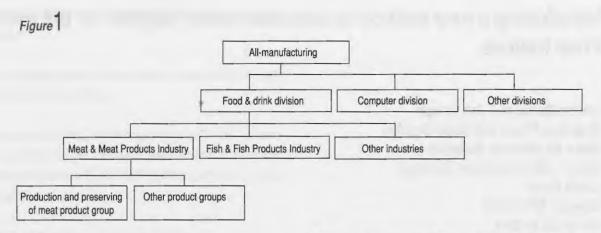
And the difference between net and gross sector is:

- Net sector the weights used to calculate these exclude transactions between companies classified to the same sector, e.g. the value of an electronic component manufacturer's sales to a car manufacturer would be excluded from the weights (thereby reflecting the value of sales to purchasers outside the manufacturing sector);
- Gross sector all transactions are included when deriving the weights, including sales within the same sector.

The same basic price information is used to feed into each of these four types of PPI series. The difference between the various indices is the weights that are applied to combine the low level series to form these higher level indices and which low level series are combined to form the high level indices. The headline series produced in the PPI First Release are the NSO and NSI all-manufacturing series including duty.

#### **Price Data**

Around 9,000 price quotes are collected each month together with some prices from administrative sources like trade publications and other government departments. Output PPIs are calculated at a fairly detailed product group (six digit) level, with the products that fall into each PPI defined by the European 'Classification of Products by Activity' (CPA) which in turn is based on the 1992 Standard Industrial Classification. Indices produced for 1,277 detailed product groups are then grouped together using the 'family tree' structure of the CPA to produce 229 industry (four digit) level series. The industry level series are then grouped to give 23 division level (two-digit) indices, which in turn are grouped into the 'all-manufacturing' index. An example of this structure is provided in Figure 1.



#### Index weights

The high level all-manufacturing series are generally structured in the same way. It is easiest to explain the structure for the GSO. Initially the prices supplied by each contributor are compared to the average price of the same item in the base period to form a price relative. The price relatives are then weighted together to form the 6-digit product index. The weights are derived based on the value of ProdCom sales (total sales figure obtained from the Products of the European Community survey). The 6-digit product groups are then weighted together with other product groups of a similar nature to produce the industry indices. In turn these industries are weighted together to form their respective divisional indices. Finally weighting together all the divisional series then produces the GSO all-manufacturing index.

Indices from product level to divisional level are produced on a gross sector basis. At the all-manufacturing level output indices are produced on both a gross and net sector basis. To calculate the NSO series the same method is used to produce indices from product level to generally divisional level as is used for the GSO series. To combine the division level indices to produce the all-manufacturing NSO series, input-output data is used in place of ProdCom (and export) data to provide index weighting patterns. Unlike ProdCom data which provides only a total product sales value input-output data allows a split in sales to be made within and outside of the manufacturing sector, enabling sales to the manufacturing sector to be excluded from the NSO weights.

The Net Sector Input series is calculated from import and gross sector output indices which are calculated up to input/output group level using similar methods to those described above. These series are then weighted together using input/output domestic and import data, removing sales and imports to the manufacturing sector, in the same way as for NSO.

#### Rebasing

Rebasing is a five-yearly process for the PPI (and trade price series)

with the aim being to update the weights used in the calculation of all series produced. Over time relative volumes and prices of products sold will change and it is important to ensure the weighting structure of the index is updated at regular intervals to reflect recent information on the relative importance of products

Together with the updating of the weights to the most recent base year other methodological issues have been addressed during the current rebasing exercise. There are three key methodological issues:

- The change to the calculation of the sales to the domestic market (total sales less exports) data which is used to weight the output indices for the PPI;
- 2. The weighting pattern and structure of the import series;
- 3. The structure of the input series.

This article will look mainly at the change in method to calculate the home sales data and the effect this has had on the actual results. Brief summaries are detailed towards the end of the report for the other changes implemented as part of the rebasing process.

#### Calculation of home sales data

#### Current method

Each 6-digit product level index is produced by weighting together price information supplied by a sample of contributors. For further details on the approach to index calculation see the *Economic Trends* article (Morris and Birch, 2001).

To move from the 6-digit to higher level series, indices are weighted together based on the relative values of sales of each 6-digit product group to the domestic (home) market. These values used as the basis for index weights are referred to here as 'home sales'.

Home sales are calculated using ProdCom total sales estimates (which include sales to both the domestic and export markets) adjusted using export data from Customs and Excise (C&E) to remove exports from the total, leaving just the required estimates of sales to the home market. The weights of relevant product level indices within the industry level index are the home sales value for the 6-digit product group divided by the total home sales of all 6-digit product groups within the industry.

Whilst in theory it is a straightforward calculation to produce home sales values, problems are encountered as the data is obtained from two different sources. There are differences in the approach used to derive the respective estimates of totals produced, both in terms of methods and also in terms of classification and definition. (See the section 'Reason for changing the method' for further details). Cases were found where the export value for particular product groups were greater than the total sales. In these cases 'special rules' are adhered to so all negative home sales are removed. An adjustment to remove negative home sales estimates was also applied in previous rebasing exercises. For the current exercise an improvement has been made to the method used.

#### Reason for changing the method

The review of the approach taken to adjusting these negative estimates addressed concerns with the previous approach namely:

Matching two data sources.

The ProdCom estimates of total sales and Customs and Excise estimate of export sales are derived using different methods, coverage and definitions – there were only limited allowances for these differences in place.

ProdCom is a survey of businesses classified to the manufacturing sector. A stratified random sample design is used with stratification based on industry classification of the business and employment. All of the larger businesses and a sample of the smaller businesses within each industry are selected for the survey. Contributors are then asked to provide information on sales of products manufactured. Product classifications are based on the European ProdCom 'Product list'. In contrast Customs & Excise estimates of product exports are based on a cut-off sample of traders with significant total exports covering around 97 per cent of total trade. Product classifications are based on the 'combined nomenclature' (CN) classification system.

There could therefore be differences between the two data sources due to:

- Coverage ProdCom includes only businesses classified to the manufacturing sector whilst customs covers all exports (including re-exports).
- Design there are likely to be differences in responders to the survey.

- Classification products may be classified differently by responders (although there is a direct link between ProdCom and CN classifications).
- There may be some bias in the approach previously used as only
  negative values were adjusted and not all values were adjusted
  in a similar way. The magnitude of this bias was determined as
  the value of exports of unrecorded production (e.g. re-exports
  and production from industries not included in ProdCom).

#### New method

Initially, in developing the revised approach, consideration was given to whether additional information was available to supplement the sales estimates available from ProdCom and C&E surveys. The monthly Production Inquiry (MPI) was identified as an additional source of information. This survey provides monthly estimates of total and export sales at an industry level. Whilst there are differences between the MPI and PPI approach, MPI estimates are based on industry classifications whilst PPI estimates are produced on a product classification basis; MPI data provided a useful additional source of information.

A more detailed but robust method to produce home sales estimates has now been defined which addresses concerns with the previous approach. The underlying rationale for the improved method is that C&E data is used to provide relative export proportions by product group. These are applied to each ProdCom industry separately, to obtain a split between exports and home sales. These estimates are then scaled to ensure that the ProdCom industry export totals are consistent with the MPI data.

Average C&E export proportions are compared against the MPI export proportion. If the C&E export proportion is greater then exports are defined as too big and are reduced. If the C&E export proportion is less than the MPI export proportion then exports are defined as too small, so the home sales are reduced accordingly. The home sales are reduced as opposed to increasing the exports so to ensure that the exports are not increased above the total sales producing negative home sales values, i.e. ProdCom estimates provide constraining totals. An example showing the workings of the new home sales method is available on request.

By introducing this method the following properties hold true:

- The home sales and exports are proportional to the ProdCom sales for the product within its industry.
- . There are no negative home sales values.
- MPI data provides reliable estimates of export proportions by industry, which are coherent with ProdCom data because both

surveys are based on the same sampling frame with the same allocation of contributors to industry.

# Comparison of results at the higher level using the old and new home sales method

To determine the impact of the change in method on results, a comparison has been made of index values produced with index weights derived on both the old and new home sales. The analysis undertaken focuses on the difference in the method of the home sales and does not include the change due to the base year being updated. All the data calculated is provisional and uses the new base year 2000=100 to calculate weights and indices but with home sales estimates derived using both the old and new method.

#### Results

#### Weights

The change in the method to calculate the home sales figures will obviously introduce differences in index weights. These differences are due to the estimates of home sales or the proportion of this value within the total. The extent to which the weight change will impact on results will depend on the size of weights and index levels.

By introducing the new method to calculate home sales the overall total has increased by around 4 per cent. This was anticipated given that it was thought that the old method produced estimates of home sales that were biased downwards.

Analysis of differences in weights derived on the old and new basis found, as expected, larger changes for product (6-digit) level weights within industry level series. There were 73 product groups showing a difference of 10 per cent or more out of 1,277 product groups in total. At the next level the difference was less with 12 industries showing a change of 5 per cent or more out of a total number of 229 industries.

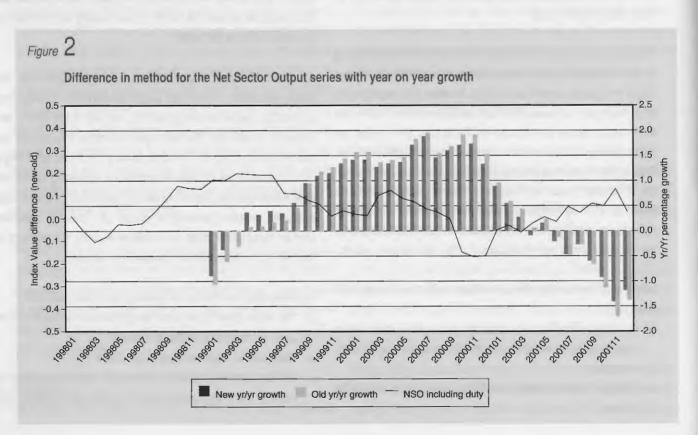
Investigation of these differences in weights identified the main reason being that under the old method when constraining the inconsistent data sets, exports were given too low a value.

Analysis of weight changes showed that, with relatively few exceptions, the new method provided an improved approach to the calculation of index weights.

#### Effect on the data series

What is of most concern and interest to users is the effect the introduction of the new home sales method will have on the data series published. This has been considered in isolation i.e. ignoring the effect of rebasing.

Figure 2 shows the provisional difference in NSO all-manufacturing index values due to the difference in methodologies — the difference shown being the series using the new home sales method weights less the series derived using the old.



It is worth noting that in calculating the NSO series it is only weights below divisional level that are affected. Under both approaches the weights of the division level series within the all-manufacturing index are consistent (and based on input-output data).

The provisional difference over time for the level is generally less than 0.2 index points with a few exceptions with the largest differences generally occurring towards the latter part of 1998 and the beginning of 1999. Differences in the year on year growth are on average less than 0.15 with the largest differences occurring towards the end of 2001.

## Causes of differences in the NSO all-manufacturing series

As the weights for the division level series feeding into the high level are the same, then differences within the division level series will account for the all-manufacturing level differences. Figure 3 shows the provisional difference within the NSO series together with the contribution of the major component divisions to this difference.

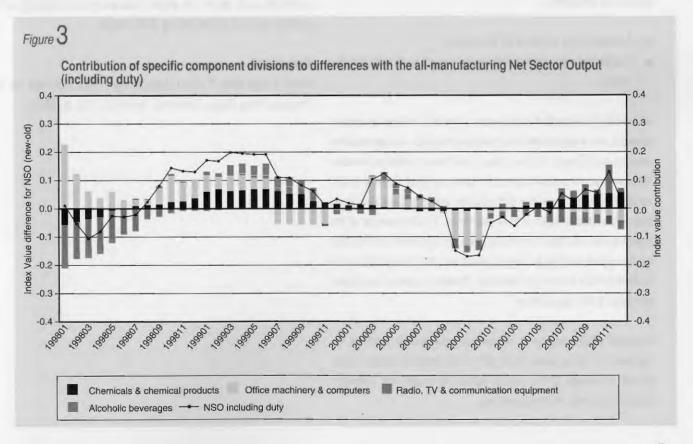
Differences within the office machinery and computers component series are the main contributor to differences within the NSO series. Other components contribute to differences at the NSO level in specific periods, e.g. the alcoholic beverages component contributes to differences in specific months as do the chemical and radio, television and communication component.

As expected the differences between methods are greater at the lower levels most significantly within the office machinery and computer industry. With a small number of exceptions, provisional differences at division level are less than 2 index points. The reason for these differences is that there is now an improved approach which better reflects the products exported for these particular industries.

### Weighting and structure of the import series

As part of the current rebasing project, improvements have been introduced in other areas. One such improvement has been to the import series. The import series like the output PPIs are constructed using price information from contributors and from published sources. A review of price quotes obtained from published sources has been undertaken to ensure that these are representative. This review resulted in the introduction of additional published source price quotes to improve coverage. The sample for both the import and export series has also been updated and increased again to improve the overall coverage and quality of the series produced.

The structure of the import series has also been reviewed with a view to introducing a consistent approach across all series. The structure of the series is now similar to that of PPI with detailed product level series produced based on a 4-digit Standard Industrial Trade Classification (SITC) classification. These product level series are in turn combined to produce 3-digit and 2-digit level SITC series



and all-import indices, with index weights based on relative import values of component series. There has also been a slight change to the approach used to weight quotes from businesses to form the product level series. Weights are now based on relative 2000 product import sales values of businesses included in the sample.

### The input series review

The input series measures the movement of prices of materials/ products purchased by manufacturers that are required as inputs to the manufacturing process – both the raw material intermediate products that feed into the manufacturing process and materials required for the day-to-day running of the business. Input indices are constructed on both a gross and net sector basis. The net sector input indices are published at the all-manufacturing level only. This series excludes all inter-sector transactions, that is purchases from UK manufacturers are excluded from the gross purchase values before weights are calculated.

The structure of the indices is defined using input-output domestic and import matrices which provide information on the products purchased by industry groups from both the domestic and import markets. Due to cost and burden constraints it is not possible to collect input price data directly so gross sector output and import prices are used as proxies to construct the series. The review of the structure of the input series has considered which output PPIs and import indices should be used as components of the series. The review has considered:

- An appropriate structure for the series;
- Availability of component indices to be used in constructing the series.

In reviewing the structure of the series component, indices have been limited to raw materials and intermediate products – capital products have been excluded from the series. Since the last rebasing exercise the coverage of the import series has been improved. Suitable import series introduced since the last rebasing exercise have also been included as components of the input series. Whilst coverage of the import series has been increased there are still areas not covered by the current sample. In these cases proxy series have been used to represent the missing components. These proxy series are based on higher level import series.

A benefit of this approach is that this new structure allows for replacement of the proxy series with the appropriate import series, should coverage of the import series be expanded following completion of the rebasing exercise. The impact of these changes were generally found to be less than 0.2 index points across all series and periods analysed.

#### Conclusions

This article has given details of the methodological changes implemented as part of the 2000=100 rebasing exercise for PPI. In particular concentrating on the changes made to the calculation of home sales data used to weight the output PPIs and identifying the effect this change has had on the high level series. The main points of conclusion are:

- The new method to calculate home sales are more robust compared to the previous approach.
- The differences due to the change in the method were small at the higher level with larger differences occurring at the more detailed level.
- Other methodological changes have been introduced during the rebasing programme. These are a review of how the input series is calculated and structured, and the structure and weighting of the import series.

These changes are to be implemented as part of the 2000=100 rebasing exercise. The analysis concentrates on the difference due to the methodological changes but the results of rebasing will also incorporate the change due to the update of the weights. The first results to be published on this basis will be available from October 2003. If you have any comments or if you would like further information with regard this article, please contact Jon Gough at the address given at the beginning of the article.

#### Reference

Morris L and Birch T (2001) Introducing a New Estimator for the Producer Price Index. *Economic Trends* No. 573, pp 63–71.