

Economic Trends

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Introduction

Economic Trends brings together all the main economic indicators. It contains three regular sections of tables and charts illustrating trends in the UK economy.

'Economic Update' is a feature giving an overview of the latest economic statistics. The content and presentation will vary from month to month depending on topicality and coverage of the published statistics. The accompanying table on main economic indicators is wider in coverage than the table on selected monthly indicators appearing in previous editions of *Economic Trends*. Data included in this section may not be wholly consistent with other sections which will have gone to press earlier.

An article on international economic indicators appears monthly and an article on regional economic indicators appears every March, June, September and December. Occasional articles comment on and analyse economic statistics and introduce new series, new analyses and new methodology.

Quarterly articles on the national accounts and the balance of payments appear in a separate supplement to *Economic Trends* entitled *UK Economic Accounts* which is published every January, April, July and October.

The main section is based on information available to the ONS on the date printed in note 1 below and shows the movements of the key economic indicators. The indicators appear in tabular form on left hand pages with corresponding charts on facing right hand pages. Colour has been used to aid interpretation in some of the charts, for example by creating a background grid on those charts drawn to a logarithmic scale. Index numbers in some tables and charts are given on a common base year for convenience of comparison.

The section on cyclical indicators shows the movements of four composite indices over 20 years against a reference chronology of business cycles. The indices group together indicators which lead, coincide with and lag behind the business cycle, and a short note describes their most recent movements. The March, June, September and December issues carry further graphs showing separately the movements in all of the 27 indicators which make up the composite indices.

Economic Trends is prepared monthly by the Office for National Statistics in collaboration with the statistics divisions of Government Departments and the Bank of England.

Notes on the tables

1. All data in the tables and accompanying charts is current, as far as possible, to 17 July 1996.
2. The four letter identification code at the top of each column of data (eg, DJDD) is ONS's own reference to this series of data on our database. Please quote the relevant code if you contact us requiring any further information about the data.

3. Some data, particularly for the latest time period, is provisional and may be subject to revisions in later issues.

4. The statistics relate mainly to the United Kingdom; where figures are for Great Britain only, this is shown on the table.

5. Almost all quarterly data are seasonally adjusted; those not seasonally adjusted are indicated by NSA.

6. Rounding may lead to inconsistencies between the sum of constituent parts and the total in some tables.

7. A line drawn across a column between two consecutive figures indicates that the figures above and below the line have been compiled on different bases and are not strictly comparable. In each case a footnote explains the difference.

8. 'Billion' denotes one thousand million.

9. There is no single correct definition of *money*. Consequently, several definitions of money stock are widely used:

M0 the narrowest measure consists of notes and coin in circulation outside the Bank of England and bankers' operational deposits at the Bank.

M2 comprises notes and coin in circulation with the public *plus* sterling retail deposits held by the UK private sector with UK banks and building societies.

M4 comprises notes and coin in circulation with the public, together with all sterling deposits (including *certificates of deposit*) held with UK banks and building societies by the rest of the private sector.

The Bank of England also publish data for liquid assets outside M4.

10. Symbols used:
- .. not available
 - nil or less than half the final digit shown
 - + alongside a heading indicates a series for which measures of variability are given in the table on page T79
 - † indicates that the data has been revised since the last edition; the period marked is the earliest in the table to have been revised
 - * average (or total) of five weeks.

If you have any comments or suggestions about *Economic Trends*, please write to Michael Byrne, Technical Editor, ONS, Room 131E/1, Government Buildings, Great George Street, London, SW1P 3AQ.

Marketing and Customer Service Division
Office for National Statistics

17 July 1996

ONS Databank

The data in this publication can be obtained in computer readable form via the ONS Databank service which provides macro- economic time series data on disc. For more details about the availability of this and other datasets, prices or to place your order please telephone, write or fax: ONS Sales Desk, Room 131/4, Government Buildings, Great George Street, London, SW1P 3AQ. Telephone: 0171 270 6081 or fax 0171 270 4986. The ONS does not offer direct on-line

Table 2.15

Each month series on external competitiveness are published in Table 2.15 of *Economic Trends*. The Office for National Statistics has now taken over compilation of these series. The very latest receipt of source data from the IMF is included in this edition. We intend to further improve the quality and timeliness of these series wherever possible in the future.

Methodology notes will be provided on request. The contact details are:

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ECONOMIC UPDATE - JULY 1996

(Includes data up to 18th July 1996)

by Adrian Richards, Philip Blackburn and Kevin Madden, Economic Assessment - Office for National Statistics

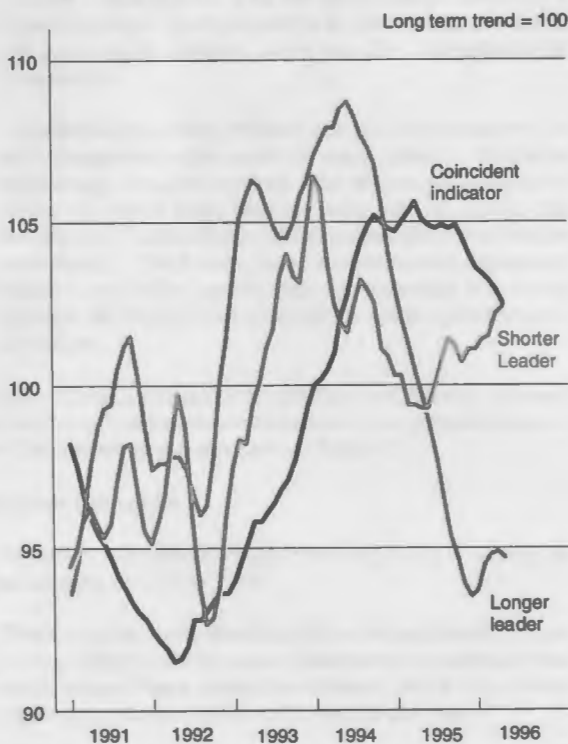
Overview

Production in the economy continues to grow at a slow rate with manufacturing growth remaining depressed. The economy was temporarily boosted by strong output growth from the energy industries following colder than average weather. Demand for credit by consumers rose sharply, but retail sales growth continues to be moderate. Although underlying retail price inflation remained constant in June, input and output prices fell, while average earnings in services and the production industries fell in June. Exports and imports are growing at a fast rate, but imports are outperforming exports, resulting in an increase in the trade deficit. Exports are being driven by manufactures whereas imports growth is in inputs.

Activity

The ONS's coincident cyclical indicator, based on partial information continued its fall in May: contributors to the fall were decreases in CBI capacity utilisation and in real M0 money supply. Partial information suggests that the shorter leading index picked up in May as new car registrations increased, and the longer leading index fell in May, although it rose in the four months to April. Chart 1 shows the recent movements in indicators.

Chart 1
Cyclical Indicators

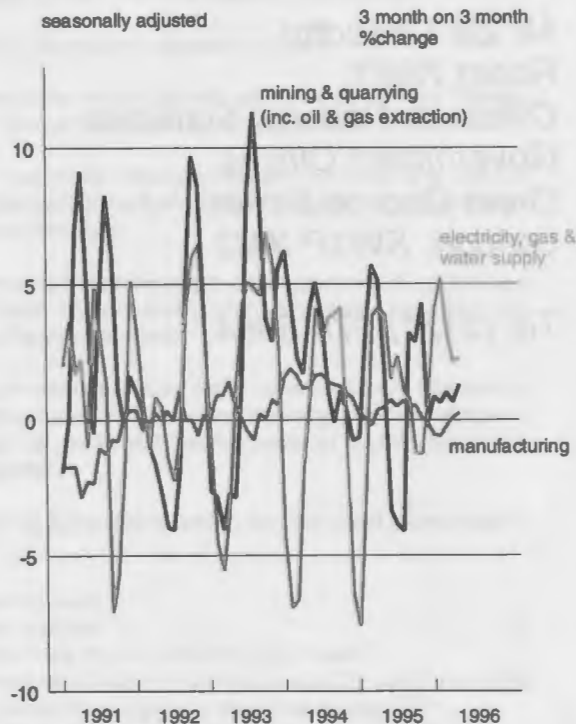


Output and expectations

2. The index of industrial production, seasonally adjusted, was 0.5% higher in the three months to May than the previous three months. Within this, manufacturing output rose by 0.3%, mining and quarrying output, including oil and gas extraction rose

strongly by 1.3 % and output of the electricity, gas and water supply industries rose sharply, by 2.2%. Chart 2 shows the sectoral split for industry groups. Output of the energy sector was strong between April and May. Oil and gas rose sharply by 3.8% and particularly electricity, gas and water supply was up 5.6% due to lower than normal temperatures in May. Short term trends in manufacturing and production continued to be flat. However, in the three months to May, output of the investment goods industries rose by 1.5%.

Chart 2
Output of the production industries



3. The CBI Monthly Trends Enquiry in manufacturing reported the output expectations balance in the next 4 months, seasonally adjusted, rising from 9% in May to 11% in June, indicating continued optimism about future growth in manufacturing.

4. The volume of new construction orders in Great Britain, seasonally adjusted, fell by 7% in the three months to May compared with the three months to February. The sectoral pattern shows that, private commercial orders were 21% lower, public non-housing orders were 18% lower, and private industrial orders were 8% lower. However, new orders for private sector housing were 13% higher and infrastructure orders were 12% higher.

Indicators of domestic demand

5. In the three months to May, the volume of retail sales was 0.5% higher than in the previous three months and 2% up on a year earlier. Between March and May, the volume of household goods sold grew by 2% due to strong growth in May alone, up 3.2%.

6. Total net personal borrowing, seasonally adjusted, rose from £6.0 billion in the three months to February to £6.4 billion in the three

months to May. Over this period, net borrowing secured on dwellings, seasonally adjusted, rose by £0.1 billion to £3.9 billion while net consumer credit, seasonally adjusted, rose from £2.1 billion to £2.5 billion.

Prices and wages

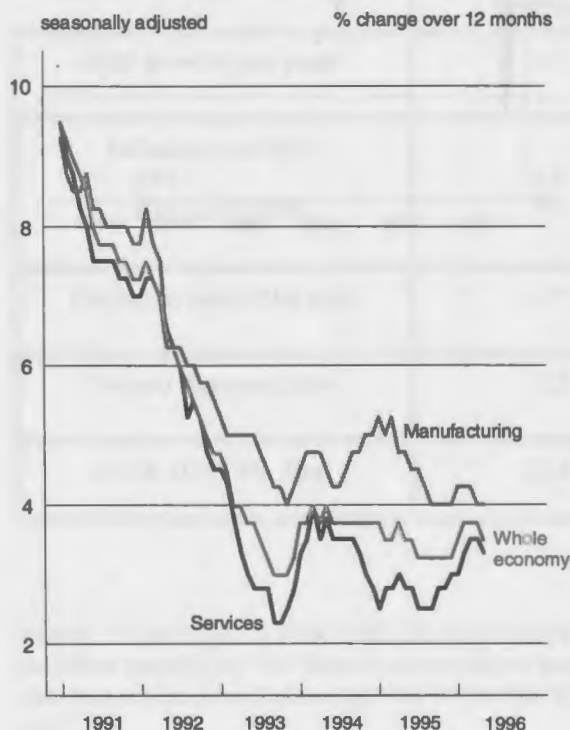
7. The 12-month rate of increase of the retail prices index (RPI) edged lower to 2.1% in June, 0.1 percentage points below May's rate. Excluding mortgage interest payments (RPIX), the 12-month rate remained unchanged at 2.8% in June. Excluding mortgage interest payments and indirect taxes (RPIY), also remained unchanged at 2.3% in June, showing that falling mortgage rates were responsible for the fall in the headline rate.

8. Producer prices continued to fall in June. The three month on three month annualized percentage growth in the output price index for manufactured products (home sales), seasonally adjusted and excluding excise duties, fell from 1.7% in May to 1.4% in June. Over the same period the annualized change in input prices (all manufacturing), seasonally adjusted, fell further from deflation of 0.1% to deflation of 2%. The falling price of crude oil was the main contributor to further deflation of input prices.

9. Expectations of price increases remained low in June. The CBI Monthly Trends Enquiry for manufacturing showed a balance of 7%, seasonally adjusted by the ONS, expecting to raise prices in the next four months. The balance remained the same as last month, with no signs of expectation of rising prices.

10. The annual rise in underlying whole economy average earnings for Great Britain fell in May by ¼ percentage point to be 3¼%. This was due to a fall in the underlying rate of increase in earnings in the service sector, which fell by ¼ percentage point to be 3¼% and earnings in the production sector which fell by ¼ percentage point to be 4%. Over the same period, manufacturing underlying earnings growth remained unchanged at 4%. Chart 3 illustrates the latest downward trend in earnings.

Chart 3
Whole economy underlying earnings in GB

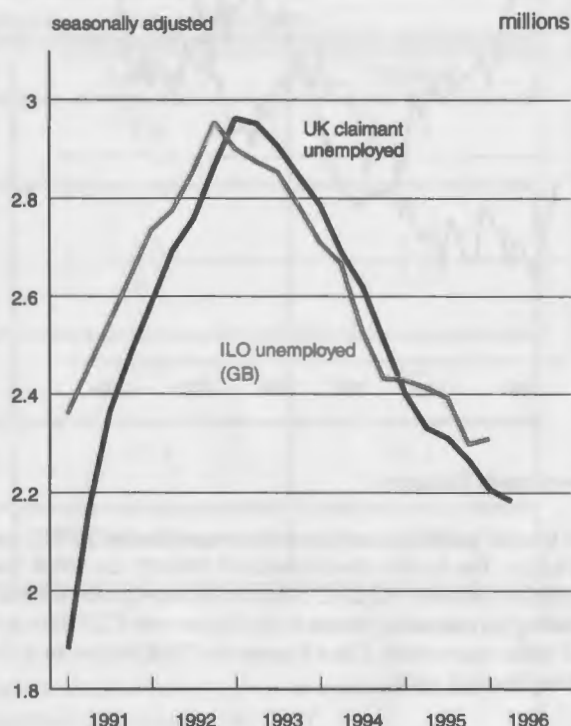


Labour market and productivity

11. UK claimant unemployment, seasonally adjusted, fell in June by 14,300 to stand at 2.1 million, or 7.7% of the workforce. In the three months to June the average monthly fall was 11,600 compared with an average fall of 16,300 in the three months to March.

12. The Spring 1996 Labour Force Survey (LFS) (March to May) showed a rise in ILO unemployment (GB), seasonally adjusted, of 11,000 to stand at 2.313 million. Chart 4 highlights the latest diversities in unemployment measures.

Chart 4
Measures of unemployment



13. There was a fall in GB employment in manufacturing industries of 7,000 between April and May, and a fall of 31,000 in the twelve months to May. Employment in the rest of the production industries rose by 2,000 between April and May, the first rise since September 1995, but fell by 15,000 in the twelve months to May.

14. LFS employment for Great Britain, seasonally adjusted, fell by 34,000 between the Winter 1995 and Spring 1996 surveys to lie at a total of 25.6 million. Significant falls were recorded in the distribution, hotels and restaurants sector (34,000), the energy and water sector (8,000) and the communications sector (7,000). Despite the falls, average weekly hours worked increased by 0.3% between the winter quarter and the spring quarter.

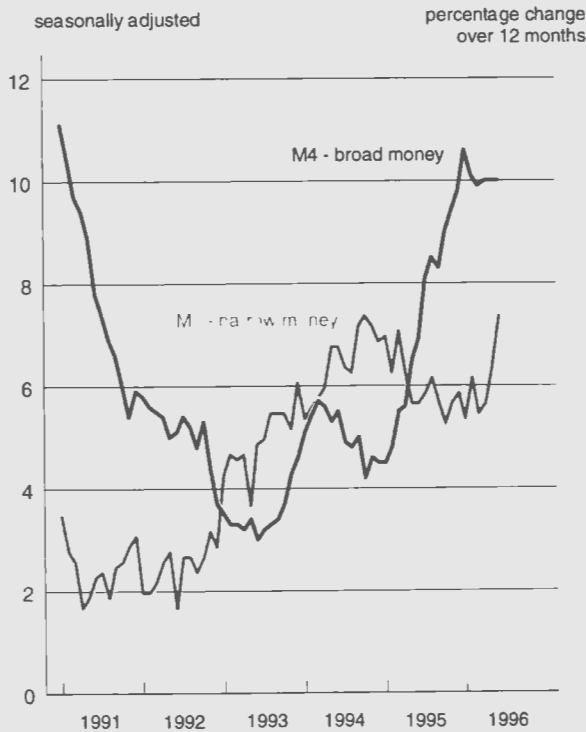
15. In the three months to May, productivity in manufacturing was 1.0% up on the three months to May 1996 as employers continued to cut back employment. Unit wage costs in manufacturing rose by 3.2% over the same period.

Monetary indicators

16. The annual growth of narrow money (M0), seasonally adjusted, accelerated from 6.3% in May to 7.3% in June. Annual growth of broad money (M4), seasonally adjusted, provisionally remained unchanged at 10.0% in May. In Chart 5, the strong growth rates of both money supply measures can be seen.

Chart 5

Annual growth of monetary aggregates

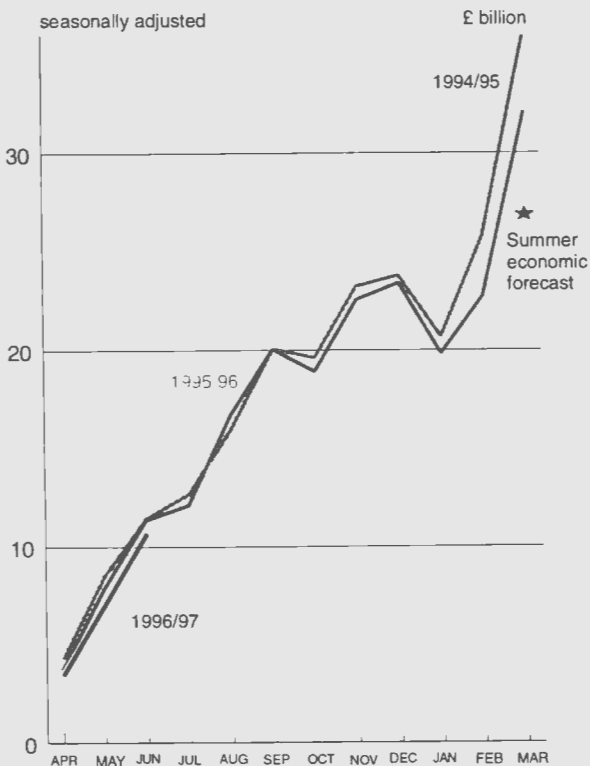


Government finances

17. In June the **public sector borrowing requirement (PSBR)** was £3.6 billion. For the first three months of 1996-97, the PSBR was £10.7 billion compared with £11.3 billion in the same period last year. **Excluding privatisation proceeds** the figures were £12 billion and £11.3 billion respectively. Chart 6 maps the PSBR behaviour in the last three financial years.

Chart 6

Public sector borrowing requirement



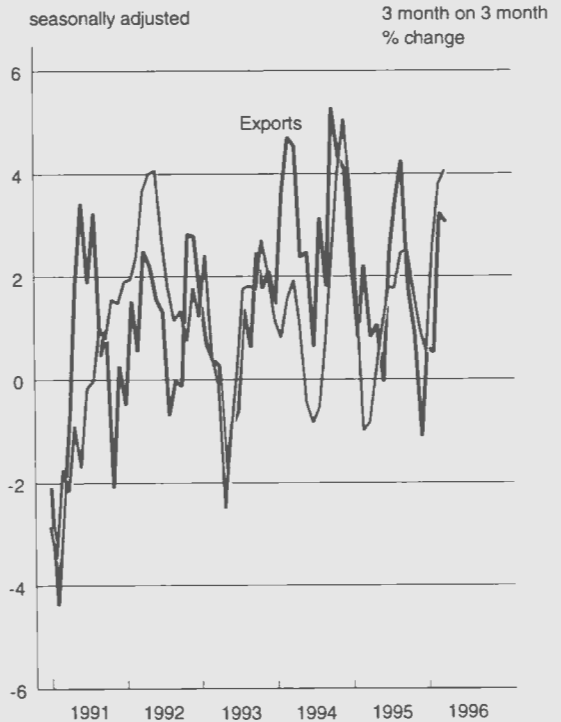
Balance of payments

18. The deficit on the **balance of UK trade in goods** rose from £3 billion in the three months to January to £3.4 billion in the three months to April. Over this period the **volume of total exports, excluding oil and erratics**, rose by 3.1%. Chart 7 shows that, on the same basis **imports** rose by 4.1%. Exports of manufactures appear to be doing well: semi-manufactures grew by 5% and finished manufactures rose by 3%, whilst imports showed strong growth for raw materials: fuels up by 7.8% and basic materials up by 7.7%. Chart 7 illustrates the strong growth rates of exports and imports in 1996.

19. More timely data on **trade with non-EC countries** shows that the deficit narrowed from £2.7 billion in the three months to April to £2.3 billion in the three months to May. In the three months to May, **export volumes, excluding oil and erratics** rose by 1.3% compared with the previous three months. On the same basis **imports** rose marginally by 0.1%.

Chart 7

Volume of exports and imports (excluding oil and erratics)



Forecast for the UK Economy

A comparison of independent forecasts, July 1996.

The tables below are extracted from HM Treasury's "FORECASTS FOR THE UK ECONOMY" and summarise the average and range of independent forecasts for 1996 and 1997, updated monthly.

	Independent Forecasts for 1996		
	Average	Lowest	Highest
GDP growth (per cent)	2.2	1.8	2.9
Inflation rate (Q4)			
- RPI	2.2	1.5	3.2
- RPI excl MIPS	2.7	2.1	3.5
Unemployment (Q4, mn)	2.10	2.00	2.20
Current Account (£bn)	-5.6	-11.6	-1.1
PSBR (1996-97, £bn)	27.6	24.6	32.0

	Independent Forecasts for 1997		
	Average	Lowest	Highest
GDP growth (per cent)	3.2	2.2	4.2
Inflation rate (Q4)			
- RPI	3.4	1.7	5.2
- RPI excl MIPS	2.9	1.6	4.1
Unemployment (Q4, mn)	1.95	1.62	2.30
Current Account (£bn)	-7.2	-15.9	2.0
PSBR (1997-98, £bn)	23.4	15.0	31.9

NOTE: "FORECASTS FOR THE UK ECONOMY" gives more detailed forecasts, covering 24 variables and is published monthly by HM Treasury, available on annual subscription, price £75,. Subscription enquiries should be addressed to Miss Jehal, Publishing Unit, Room 53a, HM Treasury, Parliament Street, London SW1P 3AG (0171 270 5607).

INTERNATIONAL ECONOMIC INDICATORS

(includes data up to 18 July 1996)

by Kevin Madden, Economic Assessment - Office for National Statistics

INTRODUCTION

The series presented here are taken from the Organisation of Economic Co-operation and Development's (OECD) Main Economic Indicators, except for the United Kingdom where several of the series are those most recently published. The series shown are for each of the G7 economies (United Kingdom, Germany, France, Italy, United States, Japan and Canada) and for the European Communities (EC) and OECD countries in aggregate. **Data on unified Germany has begun to be available and is included, where applicable, in this article for the first time. Footnotes to the tables explain the commencement or otherwise of the data.**

2. The length and periodicity of the series have been chosen to show their movement over a number of years as well as the recent past. There is no attempt here to make cross country comparisons across cycles. Further, because the length and timing of these cycles varies across countries, comparisons of indicators over the same period should be treated with caution.

COMMENTARY

3. There was no additional data for **gross domestic product (GDP) at constant market prices** at the time of writing. However, ONS has revised their estimate of quarterly growth to 0.4% between 1995 Q4 and 1996 Q1.

4. **Consumer price inflation** has continued either to further weaken or remain low. In Europe there were falls in the rate in the United Kingdom from 2.2% to 2.1%, France from 2.4% to 2.2%, and Italy 4.3% to 3.9% in the year to June. In the previous month Japan and Canada, countries with lower inflation at present, saw their annual rates rise to 0.7% and 1.5% respectively.

5. **Standardised unemployment rates** (ILO based) continued to fall back in the United States where the rate fell from 5.5% in May to 5.2% in June. Elsewhere there were increases, with a particularly strong rise in Canadian unemployment which grew from 9.4% in March to 10.0% in April. Increases were also recorded in Germany, where the rate returned to 9.0% in May, and Italy, which again reached 12.2% in April.

1 Gross domestic product at constant market prices: index numbers

1990 = 100

	United Kingdom	Germany ¹	France	Italy	EC	United States	Japan ²	Canada	Major 7	OECD
	FNAO	GABI	GABH	GABJ	GAEK	GAEH	GAEI	GAEG	GAEO	GAEJ
1980	76.8	79.9	79.2	80.3	79.0	77.1	66.8	75.1	75.9	76.2
1985	84.9	84.7	85.4	86.1	85.1	87.4	80.2	86.6	85.4	85.5
1986	88.6	86.7	87.6	88.6	87.5	89.9	82.1	89.5	87.8	87.8
1987	92.8	87.9	89.6	91.4	90.1	92.7	85.4	93.2	90.6	90.6
1988	97.5	91.1	93.8	95.3	93.8	96.4	90.9	98.2	94.7	94.5
1989	99.6	94.4	97.6	97.9	97.1	98.8	95.1	100.3	97.7	97.5
1990	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	98.0	112.4	100.8	101.2	103.0	99.4	104.0	98.3	101.5	101.0
1992	97.5	114.4	102.2	102.0	104.0	101.7	105.0	99.0	103.1	102.5
1993	99.6	113.1	100.6	100.8	103.4	104.8	105.1	101.0	104.5	103.8
1994	103.5	116.4	103.5	102.7	106.4	109.1	105.7	105.8	107.7	106.8
1995	106.0	118.9	106.0	105.7	108.9	109.8	106.5	108.2	..	108.8
1993 Q2	99.0	112.9	100.5	101.0	103.2	104.2	105.2	101.0	104.2	104.1
Q3	100.0	113.7	100.7	100.0	103.6	104.9	105.4	101.0	104.6	104.6
Q4	100.7	113.5	100.9	101.1	103.9	106.5	104.9	102.0	105.4	105.3
1994 Q1	101.8	114.8	101.6	101.2	104.7	106.0	105.3	103.0	106.3	105.5
Q2	103.1	116.2	103.1	102.2	106.0	107.2	105.8	105.0	107.3	106.6
Q3	104.1	117.0	104.2	103.6	106.9	108.2	106.5	107.0	108.4	107.5
Q4	104.9	117.7	105.2	103.6	107.6	109.0	105.3	108.0	109.0	107.9
1995 Q1	105.3	118.0	105.9	105.0	108.3	109.2	105.5	108.1	109.6	108.3
Q2	105.7	119.3	106.1	105.0	108.8	109.3	106.1	107.9	110.1	108.4
Q3	106.3	119.4	106.2	106.9	109.4	110.3	106.7	108.2	110.9	109.2
Q4	106.7	118.9	105.9	105.9	109.2	110.4	107.7	108.4	..	109.4
1996 Q1	107.1	..	..	..	..	111.2	..	..	..	..
Percentage change, latest quarter on corresponding quarter of previous year										
1995 Q4	1.8	1.0	0.7	2.2	1.5	1.3	2.3	0.4	..	1.4
1996 Q1	1.7	..	..	..	..	1.8	..	..	..	..
Percentage change, latest quarter on previous quarter										
1995 Q4	0.4	-0.4	-0.3	-0.9	-0.2	0.1	0.9	0.2	..	0.2
1996 Q1	0.4	..	..	..	..	0.7	..	..	..	..

¹ Data available for unified Germany since 1991

² GNP

2 Consumer prices¹ Percentage change on year earlier

	United Kingdom	Germany ²	France	Italy	EC	United States	Japan	Canada	Major 7	OECD ³
1980	18.0	5.5	13.4	21.1	13.4	13.7	8.0	10.2	12.7	14.8
1985	6.1	2.2	5.9	8.6	6.2	3.5	2.1	4.0	4.0	6.9
1986	3.4	-0.1	2.7	6.2	3.7	1.9	-0.1	4.1	2.1	5.9
1987	4.2	0.2	3.1	4.6	3.3	3.7	0.1	4.4	2.9	7.7
1988	4.9	1.3	2.8	5.0	3.6	4.0	0.7	4.0	3.4	8.6
1989	7.8	2.8	3.5	6.6	5.3	4.9	2.2	5.0	4.5	6.2
1990	9.5	2.7	3.4	6.0	5.7	5.4	3.1	4.8	5.0	6.8
1991	5.9	3.5	3.2	6.5	5.1	4.2	3.3	5.6	4.3	6.1
1992	3.7	4.0	2.4	5.3	4.2	3.1	1.6	1.5	3.0	4.9
1993	1.6	-1.2	2.1	4.2	3.4	3.0	1.3	1.9	2.6	4.1
1994	2.4	2.7	1.7	3.9	3.0	2.5	0.7	0.2	2.2	4.4
1995	3.5	1.9	1.8	5.4	3.7	2.9	-0.1	2.2	2.6	5.7
1995 Q3	3.7	1.7	1.8	5.8	3.7	2.7	0.1	2.4	2.5	5.9
Q4	3.2	1.8	1.9	5.7	3.6	2.8	-0.5	2.0	2.5	5.7
1996 Q1	2.8	1.8	2.1	5.0	2.8	2.8	-0.2	1.4	2.2	5.6
Q2	2.2	..	2.4	4.2	..	..	..	..	..	..
1995 Jul	3.5	1.8	1.5	5.6	3.7	2.9	0.4	2.6	2.6	5.9
Aug	3.6	1.7	1.9	5.8	3.7	2.7	-0.2	2.3	2.5	5.8
Sep	3.9	1.8	2.0	5.8	3.8	2.6	-0.1	2.3	2.6	5.9
Oct	3.2	1.8	1.8	5.9	3.6	2.8	-0.8	2.4	2.6	5.8
Nov	3.1	1.7	1.9	5.7	3.7	2.7	-0.6	2.0	2.4	5.6
Dec	3.2	1.8	2.1	5.5	3.6	2.9	-0.1	1.7	2.5	5.7
1996 Jan	2.9	1.7	2.0	5.6	2.9	2.7	-0.4	1.5	2.2	5.6
Feb	2.7	1.7	2.0	5.0	2.8	2.7	-0.3	1.3	2.2	5.5
Mar	2.7	1.9	2.3	4.4	2.8	2.9	-0.1	1.4	2.3	5.6
Apr	2.4	1.8	2.4	4.6	2.7	2.9	0.6	1.4	2.3	5.6
May	2.2	..	2.4	4.3	2.6	2.9	0.7	1.5	2.3	5.6
Jun	2.1	..	2.2	3.9	..	..	..	..	..	..

1 Components and coverage not uniform across countries

2 Data available for Unified Germany from 1991

3 OECD data includes 'higher inflation' countries (Mexico and Turkey)

3 Standardised unemployment rates: percentage of total labour force¹

	United Kingdom	Germany ²	France	Italy	EC ³	United States	Japan	Canada	Major 7	OECD
	GABF	GABD	GABC	GABE	GADR	GADO	GADP	GADN	GAEQ	GADQ
1980	6.4	3.1	6.3	7.5	6.4	7.1	2.0	7.4	5.5	5.8
1985	11.2	7.1	10.3	9.6	10.9	7.1	2.6	10.4	7.2	7.8
1986	11.2	6.4	10.4	10.5	10.8	6.9	2.8	9.5	7.1	7.7
1987	10.3	6.2	10.5	10.9	10.6	6.1	2.9	8.8	6.7	7.3
1988	8.6	6.2	10.0	11.0	9.9	5.4	2.5	7.7	6.1	6.7
1989	7.2	5.6	9.4	10.9	9.0	5.2	2.3	7.5	5.7	6.2
1990	6.8	4.8	8.9	10.3	8.4	5.4	2.1	8.0	5.6	6.1
1991	8.8	4.2	9.5	9.9	8.7	6.7	2.1	10.2	6.3	6.7
1992	10.1	4.6	10.4	10.5	9.3	7.3	2.2	11.3	6.8	7.4
1993	10.4	7.8	11.7	10.2	10.9	6.7	2.5	11.2	7.2	7.8
1994	9.5	8.4	12.3	11.8	11.4	6.0	2.9	10.3	7.0	7.8
1995	8.7	8.2	11.6	12.2	11.0	5.5	3.2	9.5	6.8	7.5
1995 Q4	8.6	8.5	11.6	..	11.1	5.5	3.3	9.4	6.8	7.6
1996 Q1	8.4	8.9	11.8	..	11.1	5.6	3.3	9.5	6.8	7.6
1995 Jul	8.8	8.1	11.5	12.2	11.0	5.6	3.2	9.7	6.8	7.6
Aug	8.7	8.2	11.5	..	11.0	5.6	3.2	9.5	6.8	7.5
Sep	8.6	8.3	11.5	..	11.0	5.6	3.2	9.2	6.8	7.5
Oct	8.6	8.3	11.6	12.1	11.0	5.4	3.2	9.4	6.7	7.5
Nov	8.5	8.5	11.6	..	11.0	5.5	3.4	9.4	6.8	7.6
Dec	8.6	8.6	11.7	..	11.2	5.5	3.4	9.4	6.9	7.6
1996 Jan	8.4	8.8	11.8	12.1	11.1	5.7	3.4	9.5	6.9	7.7
Feb	8.4	9.0	11.8	..	11.1	5.5	3.3	9.5	6.8	7.6
Mar	8.3	9.0	11.9	..	11.2	5.6	3.1	9.4	6.8	7.6
Apr	..	8.9	11.9	12.2	..	5.4	3.4	10.0	..	..
May	..	9.0	..	..	..	5.5	..	..	..	..
Jun	..	..	..	..	..	5.2	..	..	..	..

1 Uses an ILO based measure of those without work, currently available for work, actively seeking work or waiting to start a job already obtained

2 Data available on Unified Germany from January 1993

3 Excludes Denmark, Greece and Luxembourg

4 Balance of payments current account as percentage of GDP

	United Kingdom	Germany ^{1,2}	France	Italy	United States ¹	Japan ¹	Canada
1980	1.2	-1.7	-0.6	-2.3	0.1	-1.0	-0.6
1985	0.6	2.7	-0.1	-0.9	-3.1	3.6	-1.3
1986	-0.2	4.5	0.3	0.4	-3.5	4.3	-2.8
1987	-1.1	4.1	-0.6	-0.2	-3.7	3.6	-2.8
1988	-3.5	4.2	-0.5	-0.7	-2.6	2.7	-3.5
1989	-4.3	4.9	-0.5	-1.2	-2.0	2.0	-4.2
1990	-3.4	3.1	-0.8	-1.3	-1.7	1.2	-3.8
1991	-1.4	-1.2	-0.5	-2.1	-0.1	2.1	-4.1
1992	-1.7	-1.2	0.3	-2.3	-1.1	3.2	-3.9
1993	-1.7	-1.1	0.7	1.1	-1.6	3.1	-4.3
1994	-0.4	-0.9	0.7	1.5	-2.2	2.8	-3.3
1995	-0.4	-0.7	1.1	2.5	-2.1	2.2	-1.7
1995 Q1	0.2	-	1.9	1.0	-2.3	2.5	-3.7
Q2	-0.5	-0.1	1.3	3.0	-2.5	2.2	-2.6
Q3	-0.6	-1.4	0.3	3.3	2.2	2.1	-0.6
Q4	-0.7	-0.9	0.9	2.6	-1.7	1.9	0.1
1996 Q1	-0.6	..	..	..	..	..	..

1 Balance as percentage of GNP

2 Data available for Unified Germany from July 1990

5 Total industrial production: index numbers

1990 = 100

	United Kingdom	Germany ¹	France	Italy	EC	United States	Japan ²	Canada ³	Major 7	OECD ⁴
	DVZI	HFGA	HFFZ	HFGB	GACY	HFGD	HFGC	HFFY	GAES	GACX
1980	81.5	97.3	88.0	87.9	83.7	79.3	67.3	81.4	78.7	78.8
1985	88.0	100.3	88.5	84.8	86.4	89.0	79.8	94.5	86.3	86.3
1986	90.1	87.3	89.5	87.9	88.2	89.9	79.6	93.8	87.3	87.2
1987	93.7	87.6	91.3	91.3	90.4	94.3	82.4	98.4	90.5	90.4
1988	98.2	90.7	95.0	96.8	94.2	98.5	90.7	103.6	95.6	95.2
1989	100.3	95.0	98.5	99.8	97.9	100.0	95.9	103.4	98.5	98.3
1990	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	96.3	103.7	100.3	99.1	100.1	98.3	101.9	95.8	99.7	99.7
1992	96.2	101.0	100.2	98.9	99.0	101.7	96.1	96.8	99.5	99.6
1993	98.3	93.4	97.6	96.5	96.0	105.2	92.0	101.2	99.0	99.3
1994	103.2	96.9	101.3	101.5	100.4	111.4	93.1	107.8	103.4	103.7
1995	105.9	97.6	103.6	106.9	103.6	115.1	96.0	112.0	106.5	106.7
1995 Q2	105.6	98.8	104.4	106.1	103.8	114.5	96.4	111.8	106.5	106.6
Q3	106.4	98.3	104.7	107.9	104.2	115.4	94.7	112.1	106.6	106.8
Q4	106.3	95.9	101.6	109.4	103.5	115.6	96.5	111.8	106.7	107.0
1996 Q1	106.6	97.1	99.2	105.5	103.0	116.3	97.5	112.3	106.9	107.4
1995 May	105.9	99.6	105.1	105.5	104.3	114.4	96.5	112.2	106.6	106.8
Jun	105.5	98.7	104.9	105.3	104.0	114.5	95.7	111.3	106.2	106.5
Jul	106.0	99.8	105.4	107.8	104.3	114.6	93.5	111.8	106.2	106.2
Aug	106.4	97.6	105.4	108.4	104.6	115.7	96.6	112.1	107.2	107.4
Sep	106.9	97.5	103.3	107.5	103.8	115.8	94.0	112.3	106.5	106.7
Oct	105.9	95.4	101.5	106.7	102.8	115.3	95.3	111.9	106.0	106.3
Nov	106.4	95.4	102.0	106.1	103.3	115.6	96.7	112.1	106.6	107.0
Dec	106.8	96.8	101.3	115.3	104.3	115.8	97.6	111.4	107.4	107.7
1996 Jan	106.0	97.8	98.7	103.4	102.9	115.5	98.2	112.7	106.6	107.2
Feb	106.5	96.1	99.1	104.7	102.4	116.9	100.1	112.3	107.5	107.8
Mar	107.2	97.4	99.9	108.4	103.8	116.4	94.2	111.9	106.6	107.1
Apr	106.5	97.4	98.2	104.2	102.6	117.4	97.2	112.1	107.1	107.5
May	107.3	98.6	..	..	..	118.2	98.9	..	..	..

Percentage change: average of latest three months on that of corresponding period of previous year

1996 Apr	1.1	-1.1	-4.3	-0.2	-0.2	1.9	-0.1	0.1	0.4	0.8
May	1.2	-0.7	..	..	..	2.4	-0.4	..	..	..

Percentage change: average of latest three months on previous three months

1996 Apr	0.3	0.3	-1.6	-2.3	-0.5	1.1	-0.3	0.0	0.2	0.2
May	0.5	0.9	..	..	..	1.1	-1.9	..	..	..

1 Data available for Unified Germany from 1991

2 Not adjusted for unequal number of working days in a month

3 GDP in industry at factor cost and 1986 prices

4 Some countries excluded from area total

6 Producer prices (manufacturing) Percentage change on a year earlier

	United Kingdom	Germany ¹	France ²	Italy	EC	United States	Japan	Canada	Major 7	OECD ³
1980	12.8	7.0	9.4	..	11.3	13.5	14.8	13.4	13.2	13.2
1985	5.3	2.1	4.4	7.7	4.9	0.8	-0.8	2.7	1.9	4.8
1986	4.2	-2.4	-2.0	0.1	-1.0	-1.4	-4.7	0.9	-1.5	1.5
1987	3.7	-0.3	0.2	3.1	1.2	2.1	-2.9	2.7	1.1	5.8
1988	4.3	1.5	4.8	3.5	3.4	2.5	-0.3	4.5	2.4	7.2
1989	4.7	3.4	5.2	5.8	4.8	5.2	2.1	1.8	4.4	5.8
1990	5.8	1.5	-1.0	4.2	2.5	4.9	1.6	0.3	3.3	4.7
1991	5.4	2.2	-1.2	3.3	2.2	2.1	1.1	-1.0	1.9	3.3
1992	3.5	1.6	-1.4	1.9	1.2	1.3	-1.0	0.5	0.8	2.2
1993	3.7	0.0	-2.6	3.7	1.2	1.3	-1.6	3.3	0.8	2.1
1994	2.9	-2.9	1.1	3.7	1.4	0.6	-1.7	5.6	0.5	3.1
1995	3.4	2.2	6.4	7.9	5.7	1.8	-0.7	8.1	3.1	6.8
1995 Q4	3.8	1.7	2.7	7.2	4.6	1.9	-0.7	5.8	2.8	6.5
1996 Q1	3.8	0.8	..	4.7	..	2.7	..	1.6	..	..
1995 Jun	3.2	2.6	8.5	9.2	6.4	2.2	-0.6	8.7	3.4	7.0
Jul	3.6	2.4	7.1	9.2	6.3	1.9	-0.7	8.3	3.2	6.9
Aug	3.7	2.3	6.8	9.0	6.1	1.3	-0.7	7.2	2.9	6.7
Sep	3.9	2.5	5.7	8.7	5.9	2.2	-0.6	7.7	3.1	6.9
Oct	3.8	2.2	4.0	7.9	5.2	2.0	-0.6	6.7	3.1	6.7
Nov	3.7	1.7	2.6	7.2	4.6	1.8	-0.6	5.6	2.6	6.4
Dec	4.0	1.4	1.7	6.5	4.2	1.9	-0.8	5.1	2.5	6.3
1996 Jan	3.4	0.9	-0.4	5.9	2.5	3.0	-0.8	2.5	1.8	6.9
Feb	4.0	0.7	-1.4	4.7	..	2.4	-0.9	1.9	..	..
Mar	3.9	0.5	..	3.5	..	2.7	..	0.6	..	..
Apr	3.7	..	..	2.6	..	2.5	..	0.6	..	..
May	3.5	..	..	..	..	2.2	..	..	..	..

1 Data available for Unified Germany from 1991

2 Producer prices in intermediate goods

3 OECD includes 'higher inflation' countries (Mexico and Turkey)

7 Total employment: index numbers¹

1990 = 100

	United Kingdom	Germany ^{2,3}	France ³	Italy	EC	United States ³	Japan	Canada ³	Major 7	OECD
	DMBC	GAAR	GAAU	GAAS	GADW	GADT	GADU	GADS	GAEU	GADV
1980	93.5	95.3	96.6	97.0	100.0	84	89	84.3	..	..
1985	91.2	93.5	95.6	97.3	93.1	91	93	89.1	92.3	92.1
1986	91.4	94.4	96.1	97.9	93.8	93	94	91.9	93.6	93.4
1987	93.4	95.3	96.5	97.8	95.0	95	95	94.3	95.2	95.0
1988	96.7	96.3	97.5	99.0	96.8	98	96	97.4	97.1	97.0
1989	99.4	97.2	99.0	98.6	98.4	100	98	99.4	98.9	98.8
1990	100.0	100.0	100.0	100.0	100.0	100	100	100.0	100.0	100.0
1991	97.1	101.9	100.0	101.3	99.9	99	102	98.1	99.9	99.9
1992	94.6	102.8	99.4	100.7	98.7	100	103	97.6	100.1	99.7
1993	93.6	100.9	98.2	95.9	96.3	101	103	98.8	100.1	99.5
1994	94.2	99.3	98.4	94.0	95.8	104	104	101.0	101.4	100.7
1995	94.9	99.1	99.5	93.9	96.5	106	103	102.6	102.4	101.6
1995 Q4	95.1	99.4	99.8	94.3	96.8	106.5	103.1	102.7	102.5	101.9
1996 Q1	95.0	..	..	93.1	..	..	..	100.8	..	..
1996 Feb	..	..	..	..	..	105.3	100.8	101.0	..	..
Mar	..	..	..	..	..	..	..	101.2	..	..
Percentage change, latest quarter on that of corresponding period of previous year										
1995 Q4	0.4	0.4	1.0	0.4	0.8	0.7	-0.1	0.9	0.4	0.6
1996 Q1	0.2	..	..	0.8	..	..	..	1.3	..	..
Percentage change latest quarter on previous quarter										
1995 Q4	0.2	0.2	0.1	-0.7	-0.1	-0.3	-1.2	-2.4	-0.4	-0.4
1996 Q1	-0.1	..	..	-1.3	..	..	..	-1.9	..	..

1 Not seasonally adjusted except for the United Kingdom

2 Western Germany (Federal Republic of Germany before unification)

3 Excludes members of armed forces

8 Average wage earnings in manufacturing¹ Percentage change on a year earlier

	United Kingdom ²	Germany ³	France	Italy	EC	United States	Japan	Canada	Major 7	OECD
1980	17.6	6.5	15.0	18.7	11.0	8.7	7.4	10.0	8.9	9.5
1985	9.0	4.2	5.7	11.2	7.1	3.9	3.1	3.8	3.8	5.1
1986	7.7	4.0	4.0	4.7	5.2	2.0	1.4	2.8	3.7	3.3
1987	8.1	3.8	3.1	6.6	5.4	1.8	1.7	3.3	2.4	3.5
1988	8.5	4.6	3.0	6.0	5.4	2.8	4.5	3.9	4.6	4.4
1989	8.8	3.5	3.8	6.0	5.9	2.9	5.8	5.4	4.4	4.9
1990	9.3	5.1	4.6	7.3	6.8	3.3	5.3	4.7	5.3	5.4
1991	8.2	5.7	4.3	9.8	7.1	3.3	3.5	4.8	5.0	5.0
1992	6.6	6.2	3.6	5.4	5.5	2.4	1.1	3.4	2.9	3.6
1993	4.5	-3.6	2.6	3.7	4.5	2.5	-7.0	2.0	2.8	2.8
1994	4.7	2.9	2.3	3.3	5.0	2.8	10.2	2.2	2.7	2.8
1995	4.5	..	4.5	3.1	..	2.4	3.1	1.5	0.6	1.8
1995 Q3	4.4	..	1.8	3.5	3.8	2.7	3.6	2.3	1.0	1.5
Q4	4.0	..	2.6	3.9	3.0	2.6	2.4	2.0	0.0	0.7
1996 Q1	..	..	..	3.3	..	2.7	1.4	1.8	..	..
1995 Apr	5.2	3.8	2.4	2.3	7.6	2.3	3.5	0.7	1.2	3.5
May	4.5	..	..	2.3	7.5	2.3	3.2	1.2	1.1	3.4
Jun	4.4	..	..	2.2	7.6	2.3	1.5	0.9	-0.6	1.8
Jul	4.9	3.3	1.5	3.5	3.8	2.8	7.6	1.1	1.1	1.6
Aug	4.2	..	..	3.4	3.7	2.8	1.2	3.3	0.6	1.3
Sep	3.9	..	..	3.9	3.8	2.6	1.9	2.6	1.1	1.6
Oct	4.0	..	1.7	3.9	3.0	2.6	1.9	2.4	0.6	1.3
Nov	3.7	..	..	3.9	3.0	2.5	0.9	1.7	0.2	0.9
Dec	4.1	..	..	3.9	3.1	2.7	4.5	2.2	-0.6	0.1
1996 Jan	3.9	..	1.5	3.2	..	3.4	-0.7	1.4	..	..
Feb	..	..	..	3.3	..	2.7	2.5	1.8	..	..
Mar	..	..	..	3.2	..	2.2	2.3	2.1	..	..

1 Definitions of coverage and treatment vary among countries
2 Figures for Great Britain refer to weekly earnings; others are hourly
3 Western Germany (Federal Republic of Germany before unification)

9 Retail Sales (volume): index numbers

1990 = 100

	United Kingdom	Germany ¹	France	Italy	EC	United States	Japan	Canada	Major 7	OECD
	EAPS	GADD	GADC	GADE	GADH	GADA	GADB	GACZ	GAEW	GADG
1980	..	83.5	91.5	72.6	80.2	72.2	103.2	74.8	76.7	77.5
1985	..	80.8	90.5	87.4	84.3	85.9	100.0	89.3	85.2	85.2
1986	87.0	83.6	92.6	93.3	88.0	90.8	101.5	93.4	89.1	89.0
1987	91.5	86.9	94.8	97.8	91.5	93.3	107.1	98.6	92.3	92.1
1988	97.3	89.8	98.2	95.7	94.0	97.0	91.5	102.4	95.4	95.2
1989	99.3	92.2	99.4	102.3	97.6	99.3	95.0	102.3	98.3	98.2
1990	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	98.7	105.7	100.1	97.3	100.6	97.6	101.9	89.6	99.0	99.2
1992	99.4	103.6	100.3	102.2	100.8	100.9	99.1	90.8	100.4	100.3
1993	102.4	99.3	100.3	99.0	99.1	106.3	94.3	93.5	102.1	101.3
1994	106.2	97.5	100.8	94.4	98.3	112.9	92.8	101.1	105.1	104.0
1995	107.5	..	100.2	89.1	98.8	117.5	98.6	101.5	107.9	107.3
1995 Q4	108.3	..	97.6	82.5	97.0	119.0	98.5	101.2	107.8	107.3
1996 Q1	108.7	..	..	..	..	..	..	..	..	..
1995 Aug	107.1	..	101.8	93.8	100.0	118.7	99.7	102.6	109.2	108.6
Sep	107.3	..	101.1	90.1	100.0	118.7	99.0	101.9	108.8	108.3
Oct	107.3	..	95.9	79.5	96.0	118.1	97.7	101.3	106.9	106.3
Nov	108.6	..	99.6	86.2	98.0	119.3	99.4	100.9	108.5	108.0
Dec	108.8	..	97.3	81.7	97.0	119.7	98.3	101.3	108.1	107.7
1996 Jan	108.0	..	102.7	..	100.0	118.7	100.1	101.4	109.0	108.4
Feb	108.9	..	103.3	..	..	..	..	102.0	..	..
Mar	109.1	..	..	..	..	..	..	..	..	..

Percentage change average of latest three months on that of corresponding period of previous year

1996 Feb	1.9	..	-0.2	..	..	..	..	-1.2	..	..
Mar	2.1	..	..	..	..	..	..	..	..	..

Percentage change average of latest three months on previous three months

1996 Feb	0.7	..	2.3	..	..	..	..	0.2	..	..
Mar	0.4	..	..	..	..	..	..	..	..	..

1 Western Germany (Federal Republic of Germany before unification) - series suspended

	Export of manufactures			Import of manufactures			Export of goods			Import of goods			World trade	
	World	OECD	Other	World	OECD	Other	World	OECD	Other	World	OECD	Other	manufactures	goods
	GAFE	GAFF	GAFG	GAFH	GAFI	GAFJ	GAFK	G AFL	G AFM	G AFN	G AFO	G AFP	G AFR	G AFQ
1990	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	103.1	102.3	106.2	104.2	103.4	106.3	103.6	103.2	104.3	103.8	103.1	105.7	103.6	103.7
1992	107.8	107.1	110.7	110.6	109.8	113.0	109.7	108.5	106.8	108.2	109.3	111.3	109.2	108.9
1993	113.9	109.7	130.0	115.2	111.1	126.3	115.3	112.1	123.3	115.0	110.8	126.8	114.5	115.1
1994	127.6	121.5	151.0	128.9	124.3	141.2	127.4	123.0	139.4	126.8	121.9	140.8	128.2	127.1
1992 Q1	107.4	107.1	108.5	109.2	109.0	109.9	108.4	108.4	105.3	107.7	108.4	108.6	108.3	108.0
Q2	106.9	106.0	110.4	109.9	109.0	112.5	109.2	107.5	106.6	107.4	108.7	110.9	108.4	108.3
Q3	108.4	107.5	111.7	111.8	110.8	114.3	110.8	109.2	107.5	108.9	110.4	112.5	110.1	109.8
Q4	108.6	107.7	112.4	111.7	110.4	115.2	110.4	109.0	107.9	108.9	109.6	113.2	110.1	109.6
1993 Q1	109.3	107.1	117.9	111.9	109.2	119.3	110.5	109.1	112.2	111.2	108.7	118.2	110.6	110.6
Q2	113.5	109.2	129.9	114.0	109.8	125.6	115.0	111.7	123.8	114.3	109.9	126.8	113.7	114.6
Q3	114.9	110.0	134.2	116.0	111.3	128.9	116.5	112.4	127.4	116.2	111.3	130.0	115.5	116.3
Q4	117.8	112.6	137.8	118.9	114.3	131.6	119.1	115.2	129.9	118.3	113.4	132.2	118.4	118.7
1994 Q1	121.7	115.3	146.1	123.0	117.7	137.4	122.3	117.3	136.1	122.1	116.6	137.5	122.3	122.2
Q2	126.3	120.5	148.8	126.9	122.4	139.2	126.1	121.9	137.7	125.2	120.4	138.8	126.6	125.7
Q3	129.2	122.8	154.2	130.6	125.7	143.9	128.8	124.1	141.6	128.3	123.0	143.3	129.9	128.5
Q4	133.1	127.4	155.1	135.0	131.5	144.4	132.5	128.9	142.1	131.7	127.5	143.7	134.0	132.1
1995 Q1	147.0	142.4	165.1	151.1	150.0	154.2	145.5	143.7	155.1	148.5	146.7	153.4	149.1	147.0
Q2	148.5	144.2	165.1	152.3	151.6	154.2	146.5	145.2	155.1	149.6	148.2	153.4	150.4	148.1
Q3	152.0	145.6	176.5	157.2	154.5	164.6	150.3	146.8	164.7	154.4	151.1	163.6	154.6	152.3
Percentage change, latest quarter on corresponding quarter of previous year														
1995 Q2	17.6	19.7	11.0	20.0	23.9	10.8	16.2	19.1	12.6	19.5	23.1	10.5	18.8	17.8
Q3	17.6	18.6	14.5	20.4	22.9	14.4	16.7	18.3	16.3	20.3	22.8	14.2	19.0	18.5
Percentage change, latest quarter on previous quarter														
1995 Q2	1.0	1.3	0.0	0.8	1.1	0.0	0.7	1.0	0.0	0.7	1.0	0.0	0.9	0.7
Q3	2.4	1.0	6.9	3.2	1.9	6.7	2.6	1.1	6.2	3.2	2.0	6.6	2.8	2.8

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

Chart I: Gross domestic product

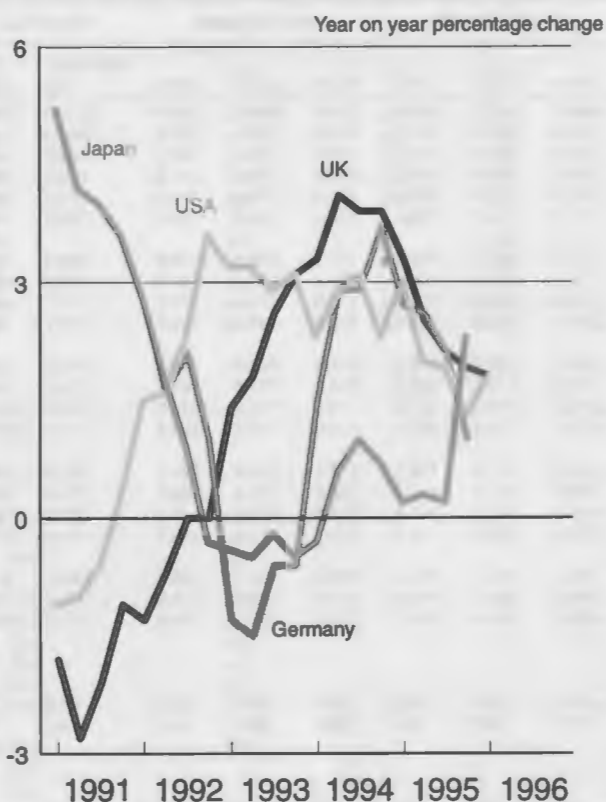


Chart II: Consumer price index



Chart III: Standardised unemployment

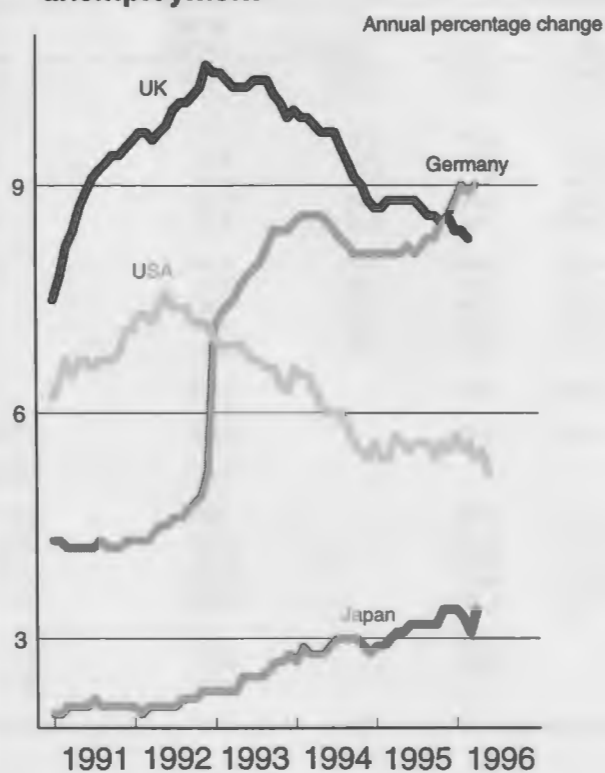


Chart IV: Current account balance

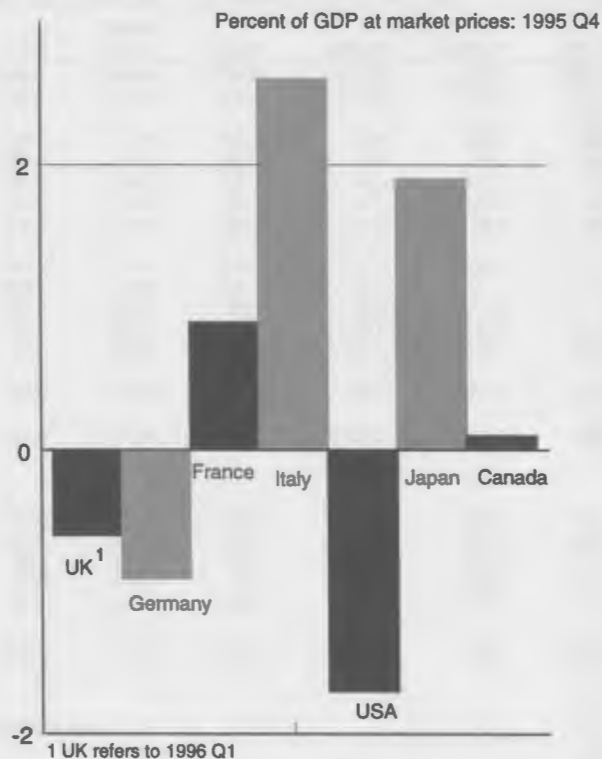


Chart V: Industrial Production

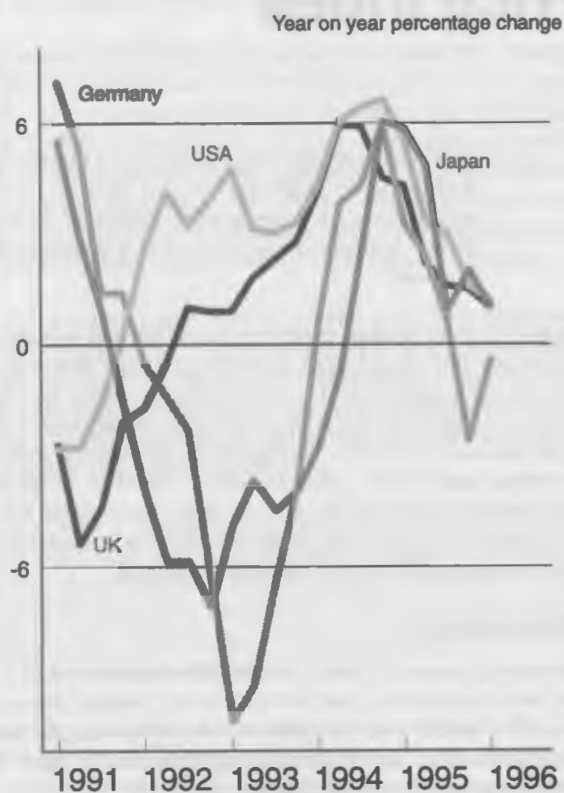


Chart VI: Producer price inflation

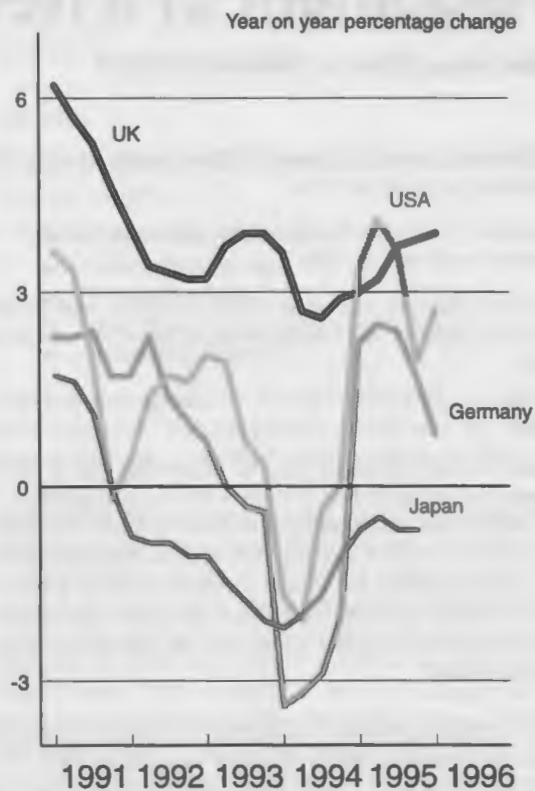


Chart VII: Employment

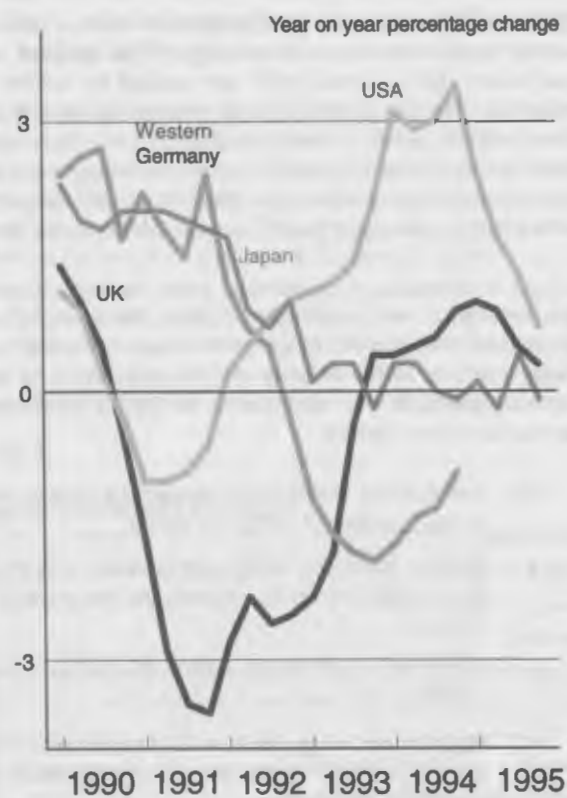
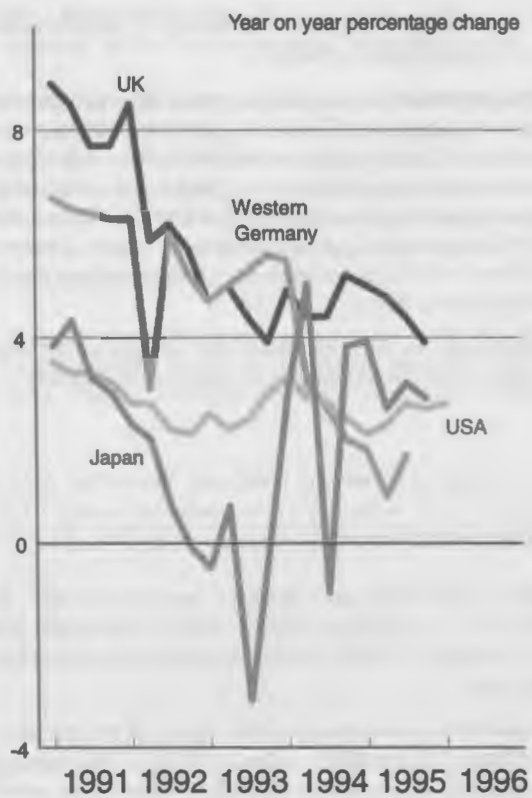


Chart VIII: Wage earnings (manufacturing)



Producer Prices for Services: Development of a New Price Index

by Jonathan Price, Office for National Statistics

- *The Office for National Statistics (ONS) is developing a new index of producer prices for services.*
- *Publication of component indexes for individual industries will commence at the end of 1996.*
- *This article describes the scope of the new index, and discusses issues that arise in the measurement of price movements for services.*

Introduction

Service industries have come to play an increasing role in the UK economy, and services (including those provided by government), now account for around two-thirds of gross domestic product. In common with the position in other countries, less statistical information has traditionally been available for service industries than for production industries. The ONS is therefore responding to the needs of its customers, both in government and the wider community, by improving statistical coverage of the sector.

This article describes the planned development of an index of producer prices for service industries, which will cover the prices of services sold by businesses to business and other non-private customers (including customers in government). Prices of services sold directly to private customers are covered by the Retail Prices Index (RPI). Developments in the two areas will be coordinated to ensure that the burden on contributors is minimised.

Work on producer prices for services aims to meet three needs:

- The index will contribute to the battery of statistics used to monitor and predict inflation.
- The component indexes will be used to deflate current price turnover data for specific service industries, and thus produce indicators of turnover at constant prices. Such indicators are employed as proxies for value added in the calculation of gross domestic product by the output method. (For industries with both private and non-private customers, combined deflators will be produced using information from the new index and the RPI.)
- Information on price movements for services will be useful to businesses, for instance in the indexing of contracts.

Issues

Developing price indexes for services is difficult. Most of the obstacles are also present in some industries in the production sector; what is different is the extent and severity:

- Many service industries produce "one-off" outputs. For instance, a particular building is only ever designed once. This makes it difficult to obtain comparable prices in different periods.
- Some service industries produce outputs which are hard to measure. For example, the services of management consultants may often be difficult to quantify, or even to identify precisely.
- Where one-off services are produced, it is particularly difficult to monitor, and adjust for, changes in quality.

- Many professionals charge on the basis of an hourly fee rate. Whilst this is relatively easy to monitor, the accurate measurement of prices requires additional information on the hourly output (productivity), which is much more difficult to obtain.

Despite these difficulties, experience in the UK and in other countries, particularly the USA and Japan, shows that it is possible to make progress. In doing this a balance must be struck between what is desirable from a theoretical perspective and what is achievable and affordable in practice. In the absence of a measure of output price movements, something else - perhaps input prices - may be used. The ONS believes that the developments proposed for service sector prices offer a significant advance over such practices. There will, however, undoubtedly be scope for continuing refinement of the methods adopted.

Measuring prices

The first step in developing a price index for the products of an industry is to review published research on the industry's outputs, costs and prices. This is followed by wide consultation with professional and trade bodies. The objective is to identify the structure of the industry and to determine the best methods for monitoring prices.

Identifying the structure correctly is important both to ensure that sub-indexes are meaningful to contributors and customers in the industry, and to maximise the accuracy of the overall results. There will tend to be less variance of price movements within market segments than between market segments.

Official classifications offer little guidance on the best analysis to be adopted below broad industry headings. The standard industrial classification (SIC) is considerably less detailed for services than for production. The EU Classification of Products by Activity can often serve as a starting point, but international differences in business practice, and the ambiguities of definition for many services, mean that it is often necessary to go beyond this source. These factors also cast some doubt on the utility of developing prescriptive classifications for the sector.

A range of approaches to monitoring prices has been adopted. The objective is always to monitor realised prices, that is, after allowing for any discount. The selection of approach in each case depends upon the pricing practices in the industry and the availability of data. An underlying objective is to minimise the burden on contributors. The data monitored may include:

- Actual prices, that is prices recorded for transactions actually carried out during the period.
- Contract prices, including a representative mix of prices levied under continuing contracts and renegotiated contracts.
- List prices, which are appropriate where discounting is not prevalent.
- Model prices, where contributors provide prices for specified services whether or not they are actually provided during the period.
- Indicators of hourly fee rates, supplemented where available by measures of productivity change.

The use of contract prices means that the index cannot be regarded as exclusively an indicator of current inflationary pressure. On the other hand, it does mean that the index is well-suited to its use as a deflator.

Price quotations are collected from suppliers, not customers. This reflects the fact that a sampling frame is not available for customers. In principle, however, there may be advantages in monitoring the prices paid by customers. This is particularly the case where contract prices are collected, as price movements for a particular task could be followed through a change in contract. The ONS proposes to investigate further the feasibility of developing sampling frames based on customers, and to give further consideration to the merits of such an approach.

The basic sampling frame used at present is the Inter-Departmental Business Register (IDBR). This has the drawback that firms are classified on the register by their main activity. Some suppliers will therefore be omitted from the sampling frame. The ONS attempts to remedy this deficiency by supplementing the IDBR with information supplied by Trades Associations, where available.

Stratified random sampling is used. Accuracy will be reviewed once the index is established, and the sample size adjusted accordingly. In view of the high incidence of small businesses in the service sector, a priority will be to examine whether there is evidence to show that the trend movement in prices for large and small businesses is similar, and thus justify reducing the sample of the latter.

In line with practice of the existing Producer Price Index (PPI), contributors are asked to supply price quotations which are representative of their price movements for the sub-index areas in which they do business. Where necessary, more than one price quotation may be provided.

Data for weighting price quotations and subindexes are sought initially when contributors are recruited. These data covers sales by sub-index area. There is at present no regular source of such data. The ONS will investigate the relative merits of updating the initial information on a regular basis, and of adapting an existing inquiry to fulfil a similar role. A move to chain linking would probably require the latter option.

In each industry, the top level index is parent to a family of component indexes. The lowest level indexes are constructed as weighted arithmetic means of price relatives (that is, prices expressed relative a base year value of 100). Higher level indexes are calculated as weighted arithmetic means of lower level indexes. The structure for freight transport by road (one of the simpler industries) is illustrated in figure 1.

Indexes are currently produced quarterly. Where contributors need to draw on their internal accounting information, for instance to determine average hourly fee rates, collection is one quarter in arrears. The ONS has been advised by professional bodies that more frequent collection is

impractical in such cases. In other industries, more frequent collection - even where practicable - would add considerably to the compliance burden. In view of the infrequency of price revisions in some service industries, there are considerable grounds for doubting whether monthly collection would be worthwhile.

Coverage

Data on five industries have been collected since 1991-92 (see Table 1). These industries are:

- freight transport by road
- industrial cleaning
- waste disposal
- hire of buses and coaches (with driver)
- educational services.

Data are collected quarterly. Data were originally obtained on a voluntary basis, but in 1995, collection became statutory in line with the PPI. The indexes were also re-sampled and re-weighted in 1995.

For both **freight transport by road** and the **hire of buses and coaches**, price quotations are received for a mixture of actual prices, contract prices and model prices. Contributors notify us of any change in the quantity or quality of the service provided. Adjustments are made for such changes on the basis of information they supply. This information may take the form of details of a change in prices based on current market rates. For example, a move to a larger coach might be accompanied by the information that such coaches are hired out at a rate 10% higher than the previously quoted model. Where information on prices is not available, the adjustment may be based on the change in the supplier's costs.

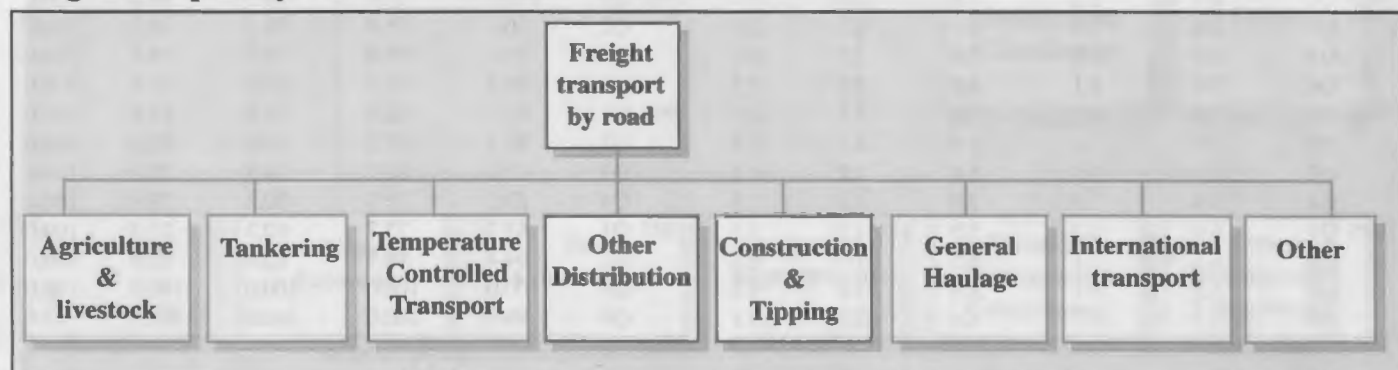
The **educational services** index covers services provided to business customers. It includes the provision of training courses of various kinds. Prices are generally quoted per student, and are provided after the deduction of any discounts. Some aspects of quality change are taken into account in the same way as with road haulage and bus and coach hire. However, the less tangible aspects of quality (for instance the quality of the teacher) are more difficult to incorporate.

For **industrial cleaning**, contract prices are collected. Again adjustments are made for any change in the quantity or quality of service provided under the contract. When a contract is lost, the contributor is asked to provide a replacement, and estimate the movement in prices that has taken place for representative new contracts over the intervening period. There is clearly a subjective element in this estimate, but its omission would produce bias.

Accuracy requires that new products are introduced into an index as soon as possible. There may therefore be a concern with a base-weighted index where it is only practicable to update the weights infrequently.

Figure 1

Freight transport by road



Consultation with industry representatives suggests, however, that this has not been a major problem in practice in these industries.

Data are now also being collected on a provisional basis for five additional industries:

- courier services
- security services
- sewerage services
- accountancy services
- consulting engineering services.

For **courier services**, quotations are collected on the basis of list prices (discounted where appropriate) and contract prices. For **security services**, the basis is contract prices, with hourly rates for some activities, such as the provision of body guarding. The principles and procedures are the same as for the established indexes described above.

The index for sewerage services is based on the costs of collection and disposal of sewerage and trade effluent from business customers. Costs for trade effluent are based on effluent of a representative strength, and the calculation employs data on charges supplied by the economic regulator of the water industry, Ofwat.

Table 1

**Service sector producer prices:
Price indexes**

1990 = 100

Price indexes	Bus and coach hire	Industrial cleaning	Freight transport by road	Adult education	Waste disposal
1992 Q1	116.2	106.5	107.2	110.1	102.3
Q2	120.4	106.9	108.5	110.5	102.1
Q3	122.0	107.3	108.4	110.0	101.2
Q4	120.6	107.3	108.4	110.6	101.4
1993 Q1	123.3	108.8	111.3	113.0	100.5
Q2	124.5	108.4	112.9	113.5	100.5
Q3	126.3	108.4	113.8	114.1	100.6
Q4	125.0	108.5	113.6	114.3	98.1
1994 Q1	125.7	108.5	119.1	115.6	96.8
Q2	129.1	109.6	119.6	115.8	99.2
Q3	131.3	110.8	120.6	116.0	99.5
Q4	129.3	110.5	121.5	116.3	100.6
1995 Q1	133.3	110.9	125.6	117.1	102.3
Q2	137.0	110.8	126.2	118.0	105.9
Q3	138.5	110.9	126.5	117.9	109.0
Q4	138.8	110.6	129.3	119.0	110.8

1990 = 100

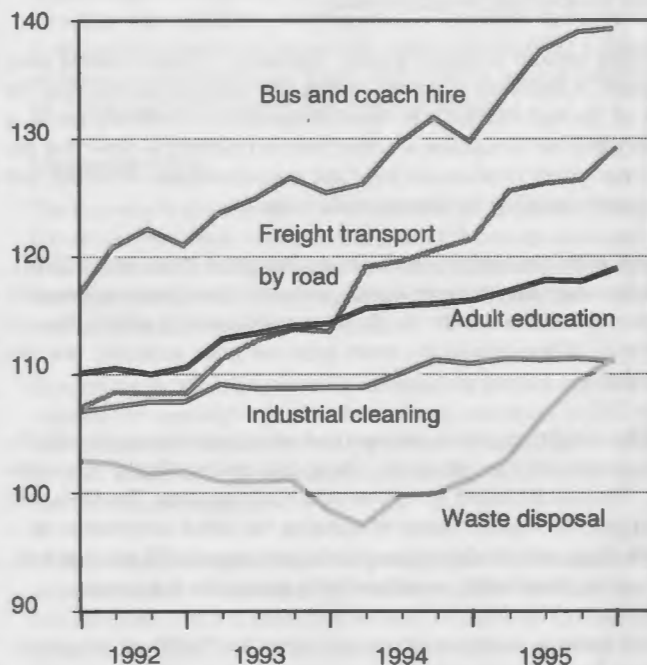


Table 1a

**Service sector producer prices:
Percentage movement over year**

1990 = 100

Price indexes	Bus and coach hire	Industrial cleaning	Freight transport by road	Adult education	Waste disposal
1993 Q1	6.1	2.2	3.8	2.6	-1.8
Q2	3.4	1.4	4.1	2.7	-1.6
Q3	3.5	1.0	5.0	3.7	-0.6
Q4	3.6	1.1	4.8	3.3	-3.3
1994 Q1	1.9	-0.3	7.0	2.3	-3.7
Q2	3.7	1.1	5.9	2.0	-1.3
Q3	4.0	2.2	6.0	1.7	-1.1
Q4	3.4	1.8	7.0	1.7	2.5
1995 Q1	6.0	2.2	5.5	1.3	5.7
Q2	6.1	1.1	5.5	1.9	6.8
Q3	5.5	0.1	4.9	1.6	9.5
Q4	7.3	0.1	6.4	2.3	10.1

Table 1b

**Service sector producer prices:
Weighted response rates (%)¹**

1990 = 100

Price indexes	Bus and coach hire	Industrial cleaning	Freight transport by road	Adult education	Waste disposal
1993 Q1	100.0	95.9	98.3	99.2	100.0
Q2	100.0	95.9	98.3	99.2	100.0
Q3	99.1	95.9	98.3	99.2	100.0
Q4	99.1	91.1	98.3	97.6	100.0
1994 Q1	98.7	92.5	93.4	87.3	100.0
Q2	99.7	85.2	94.0	81.2	100.0
Q3	55.0	81.7	94.9	77.3	100.0
Q4	63.2	75.7	92.3	79.8	100.0
1995 Q1	63.2	75.7	92.3	83.5	100.0
Q2	94.4	89.7	82.9	80.4	100.0
Q3	100.0	100.0	100.0	100.0	100.0
Q4	99.9	100.0	100.0	100.0	97.6

¹ Response rate weighted by contribution of item to index.

The problems raised by **accountancy services** and **consulting engineering services** are typical of a range of industries which produce one-off services.

An option which is attractive in theory is to seek well-specified model prices. Unfortunately the ONS received strong advice from professionals in the industries concerned that the widespread adoption of this approach was impractical. The costs of realistically re-estimating a model assignment would be very great. Either the survey would attract considerable opposition, or the estimates provided would be cursory. In particular, there was doubt about whether model prices would reasonably reflect current market conditions, rather than the notional figures used in creating initial estimates.

As a result, the ONS has decided to seek to monitor separately hourly fee rates and productivity.

The approach adopted to monitor hourly fee rates will need to vary to reflect the particular circumstances of the industry covered. These circumstances include both pricing methods and the practices adopted for recording data on fee income. In all cases, it is important to obtain figures that reflect current market realities rather than notional charge-out rates. The approach adopted for accountancy services and consulting engineering involves monitoring realised average hourly fee rates for a range of activities. The structure adopted for accountancy services is shown in figure 2. (Note that the opportunity is taken to monitor related activities performed by businesses classified to accountancy.) The mix of staff by grade is monitored separately as a partial proxy for the quality of output.

This approach clearly involves a measure of averaging. This is undesirable from the viewpoint of the theory of pure price indexes. However, the way in which records are kept in the industry severely limits the data that can be collected, particularly if the emphasis is to be on realised rather than notional rates. It is also the case that for many

professional services the unit for pricing is the customer rather than the basket of individual services provided. Thus an accountant may not care too much about the balance of charges between accountancy, auditing, and tax consultancy, so long as adequate fee income is received in total from the customer in question. In these circumstances, monitoring average charges may be the best available option.

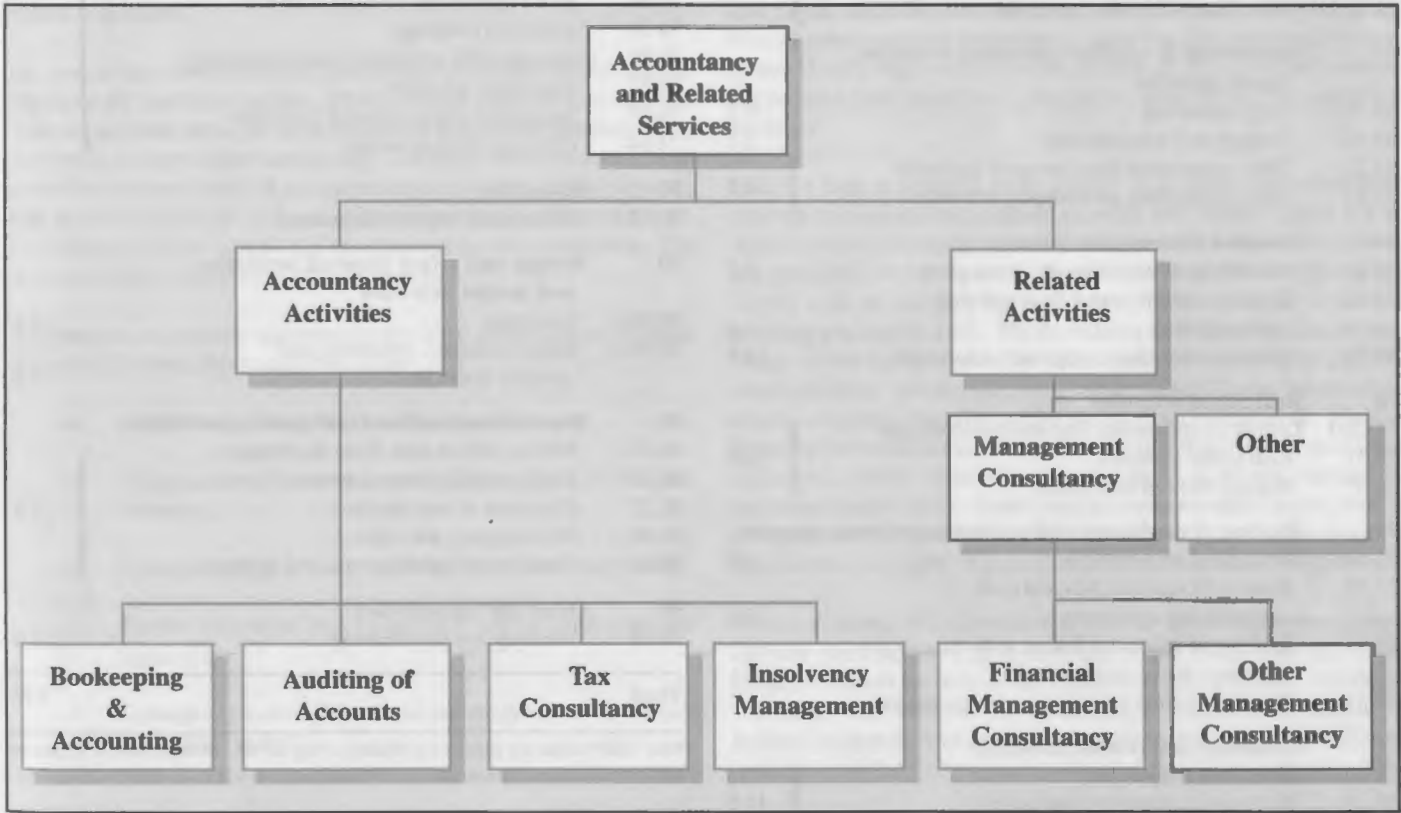
It is clear, however, that a complete measure of price movement requires that the index of movement in hourly fee rates be supplemented by an index of productivity change. In view of the difficulty of collecting model prices on a widespread basis, the ONS is exploring the feasibility of a restricted annual survey of productivity change. This work, which is at an early stage, would involve the annual re-estimation of the hours required to complete representative projects. The output would be a long run measure of productivity change specific to the industry covered, which could be used to modify the index of hourly fee rates.

It is worth bearing in mind that even if the indicator in these industries were confined to a measure of realised hourly fee rates, this would represent a considerable advance over the input cost measures currently available. First, the new indicator is dis-aggregated, and relevant to individual industries. Data on wages and other inputs are often not available on this basis. Second, the measure includes profit, which is relatively variable across the economic cycle.

Next Steps

Coverage will be expanded to the bulk of the sector by the end of 1998. The industries which it is planned to cover are shown in Figure 3. Sales to business customers by these industries accounted for around 13% of GDP in 1990. (Some smaller, more difficult and heterogenous industries will not be covered.) It is also intended to extend coverage to banking and insurance (which will add a further 4-5% of GDP), but the measurement of charges for these industries raises difficult conceptual issues which require further consideration.

Figure 2
Accountancy Services



Regular publication of the five established indexes will commence in December 1996. New indexes will be monitored for at least one year, and published as soon as practicable.

The options will be reviewed for obtaining weighting information to compile high level indexes of output and input prices for the service sector. In the longer term, the ONS will explore the scope for combining service sector input indexes with input PPIs and data on wages and salaries to create combined cost indexes for both whole sectors and individual industries.

Further work is also proposed to develop the approach to monitoring productivity change in those industries where it is natural to monitor hourly fee rates, and to refine the procedures for monitoring, and adjusting for, quality change.

Comments on these plans and proposals will be welcomed. They should be addressed to Jonathan Price at the Office for National Statistics, room 1.162, Government Buildings, Cardiff Road, Newport, S Wales NP9 1XG. Tel. (01633) 813118

Figure 3

Service sector producer prices: Industries to be covered

SIC(92) Code		Estimated GDP weight 1990	SIC(92) Code		Estimated GDP weight 1990
55	Hotels and Restaurants		72.30	Data processing	} continued
55.11/1	Licensed hotels and motels, with restaurant (business rates)	4.2	72.40	Data base activities	
			72.50	Maintenance / repair of office, accounting & computing machinery	
			72.60	Other computer related activities	
60	Land transport; transport via pipelines		74	Other business activities	
60.10/1	Inter-city services (business travel)	} 2.5	74.11	Legal activities	9.1
60.10/2	Other transport via railways (freight transport)		74.12	Accounting, book-keeping & auditing activities; tax consultancy	8.3
60.22	Taxi operation (business custom)	0.3	74.13	Market research and public opinion polling	} 23.9
60.23	Other passenger land transport (hire of buses and coaches)	0.8	74.14	Business and management consultancy activities	
60.24	Freight transport by road	13	74.20	Architectural and engineering activities and related consultancy	
61	Water transport		74.30	Technical testing and analysis	
61.10/1	Passenger sea and coastal water transport (commercial vehicle ferries)	} 0.9	74.40	Advertising	
61.10/2	Freight sea and coastal water transport		74.50	Labour recruitment and provision of personnel	
62	Air transport		74.60	Investigation and security activities	
62.10/1	Scheduled passenger air transport	} 2.75	74.70	Industrial cleaning	
62.10/2	Other scheduled air transport (air freight)		74.81	Photographic activities (film processing)	
62.20/2	Other non-scheduled air transport (air freight)		74.82	Packaging activities	
63	Supporting & auxiliary transport activities; travel agencies		74.83	Secretarial and translation activities	
63.11	Cargo handling	5.7	74.84	Other business activities	
63.12	Storage and warehousing	2.8	80	Education	
63.21	Other supporting land transport activities	} 4.9	80.42	Other adult and other education	0.9
63.23	Other supporting air transport activities		90	Sewage and refuse disposal, sanitation and similar activities	
64	Post and telecommunications		90.00/1	Sewerage	2.1
64.11	National post activities (business post)	3.2	90.00/2	Refuse disposal, sanitation and similar activities	1.5
64.12	Courier activities other than national post activities	1.0	92	Recreational, cultural and sporting activities	
64.20	Telecommunications (business telecoms)	13.6	92.12	Motion picture and video distribution	} 3.5
70	Real estate activities		92.20	Radio and television activities	
70.20/1	Letting of conference and exhibition centres	} 2.65	92.32	Operation of arts facilities	
70.31	Real estate agencies		92.40	News agency activities	
70.32	Management of real estate		92.61	Operation of sports arenas and stadiums	
71	Renting of machinery and equipment without operator		93	Other service activities	
71.10	Renting of automobiles	0.9	93.01	Washing and dry cleaning ...	1.6
71.32	Renting of construction and civil engineering machinery	3.6	Total		127
71.33	Renting of office machinery and equipment Inc. computers	0.1			
71.34	Renting of other machinery and equipment	1.7			
72	Computer and related activities				
72.10	Hardware consultancy	} 11.5			
72.20	Software consultancy and supply				

Note: GDP weights are parts in one thousand. They are the estimated implicit weights on services provided to business customers. The estimates should be regarded as illustrative.

Time use from a National Accounts perspective

by Henry Neuburger, Office for National Statistics

Time use data may be used to address some holes in national accounts of which work in households is the most important. Others have argued for a broader approach using time as a measure of welfare. The paper begins by describing the National Accounts. It then goes on to describe an important development of these, satellite accounts, their design and data sources. Then follows a section on satellite accounts for households. This is followed by a broader discussion of time use as the basis for welfare measurement. A final section looks at the potential of time budget for analysis of the hidden economy.

The National Accounts - what are they?

National accounting is the standard internationally accepted system for measuring economy activity. Such measures are the foundation for design of economic policy. The central insight is the same as the underlying principal of accounting, that any transaction involves two parties. Activity can therefore be measured either by the amount spent, the amount received in income or the balance of purchases and sales of goods and services. Accounting enables data from different sources to be brought into a single framework to produce a more coherent picture.

In order to measure consistently, it is necessary to define a production boundary. This distinguishes between activity which counts as part of the economy and other activity. The general principle is not just a distinction between marketed and non-market transactions but activity which might be transacted. Where non-market transactions are included in the accounts, values are imputed to them as if they had markets. Often inputs are used to measure output. The present production boundary excludes a large amount of activity including much unpaid work in the home and the community and there are increasing concerns that this may lead to distortion in measuring the economy.

Satellite account

Because of this concern the current international standard SNA93 makes provision for satellite accounts. These have the same form as the core national accounts, but cover areas beyond the production boundary. They may often use units other than money. The most prominent example of a satellite account in the UK is environmental accounts of which we are just about to publish the first part. Other countries have more and more developed satellites both for the environment and for other areas. The main satellite I shall discuss is for households.

The purpose of satellite accounts is described in the United Nations System of National Accounts SNA 93 as:-

- a Cross-cutting information on an area of interest.
- b Using alternative concepts to add dimensions to national accounts.
- c Extend coverage of costs and benefits of human activities.
- d Further analysis of data by means of relevant indicators and aggregates.
- e Linkage of physical data sources and analysis to the monetary accounting system.

This list sees these accounts from a national accountant's perspective. The analyst or policy maker in the relevant field can use the experiences of national accounting to provide a coherent picture. Satellites have two main uses, political and analytic. The political use is to give visibility to a particular range of activity. The analytical use to provide equipment whereby policy objectives and instruments can be linked. GNP and activity within the production boundary is often seen as having a special prestige, winning more attention from policy makers. There is a belief that policy makers aim to maximise GDP. Whether this is true or not, the desire to get spheres like housework and the environment into the production boundary as a means of mainstreaming is strongly felt. The SNA made no provision for this, and national accountants resist complete integration. Satellite accounts provide an effective solution, complementing the current definition so long as they are seen as providing a more general system rather than grudging and inferior annexes.

The political purpose will not be achieved unless the analytical purpose is taken seriously. In the case of household accounts, it is difficult to see how economic policy makers have got by without them. One example is the issue of labour supply. Analysis over at least fifty years has failed fully to explain the development of the labour force. While a well measured and specified model of the household may not solve the problems, its absence must be a serious obstacle. If one thinks of the household as a productive sector, then the shift of resources to and from it would respond both to internal developments and to the relationship between this sector and other sectors.

A similar argument can be made for care policy for children, the elderly and the disabled. Accounts for unpaid work both within the household and by the voluntary sector - some of which may be within the production boundary - will give a clearer picture of needs and resources. It applies also to housing policy and household formation and transport policy. When it comes to policy instruments, social security and tax policy have profound and complex effects on the household sector, which by almost any measure must exceed in size that of any sector within the production boundary.

Once we look at satellites more broadly as accounts, the relationship between income and expenditure accounts and balance sheets can be seen to be very different from conventional accounts. Nonetheless there is a great deal of commonality. In an area like health the notions of a current state of health, a stock of future health is similar to current spending and capital stock. But the balance sheets play a different role. These can be the basis of a link from economic accounts to social or other indicators. In many satellites, "other changes" in the balance sheet may be of greater magnitude than the parts accounted in the satellite. Pursuing the health example further, it is likely that much of the change in people's health states will be attributable to factors outside the traditional health sector. Some, such as environmental factors, will be drawn from other satellites, some, such as poverty, will come from the core national accounts. A great deal will be scientifically unknown.

The use of a range of units in satellite accounts means that either separate accounts must be drawn up in each unit or one metric - in some cases, money - should be used to construct a single account. Often the "exchange rate" between natural and money units will be a matter of political judgement and should not be decided by a statistical office. It

is for statistical offices to provide the material and allow others to supply the judgement in a transparent way.

Much attention has also been given in the literature to issues of distribution, both within the household and between households. I do not propose to discuss that here beyond saying that the same frameworks would serve for this purpose as well. Individuals have common endowments of time and different endowments of skills, health, financial assets, durable goods or political power. Such analysis could shed light on issues about whether consideration of working time alters the picture of distribution painted by money income alone.

Design of Household Accounts

A key decision is whether the household sector account should measure its role as a producer of services or also as consumer. The former seems preferable in order to clarify the relations between formal and informal production. It will need the identification of many unrecorded and indeed notional transactions. Actual consumption by households comes close to meaning welfare which we look at later.

The structures of accounts for the new SNA 93 system of accounts is as follows

	Resource	Uses	Balance
Production	Bought in goods and services	Gross output	Net value added
Allocation of income	Net value added	Consumption	Saving
Accumulation accounts	Saving	Investment	Net borrowing
Financial accounts	Borrowing	Lending	Change in Financial Assets
Balance sheet	Assets	Liabilities	Net worth

The aim is to construct equivalents of these SNA 93 accounts for the household sector. This requires measurements in both money and natural units. We consider first the household production sector, which will be measured predominantly in time use, and looks something like the following:-

	Resources	Uses	Balance
Production	Consumer non-durable spending plus capital consumption of durables	Welfare of household plus voluntary service	work done outside production boundary
Allocation of income	Time available Plus voluntary Service transfer	Time used	Non work time
Accumulation	Non-work time plus consumer durable spending	Time used for investment eg education	Balance of free time
Balance sheet	Accumulation of skills plus consumer durables etc		?

There will be a need for a separate account for the household (or possibly individuals in households) as beneficiaries of services broadly defined. This issue is addressed further in the section on 'time use as welfare' below. It can be thought of as equivalent to the SNA concept of output for own final use.

The sources and uses would show how the pay and other earnings from the market sector, and to some extent how time and other resources for investment for human capital development, were used. The capital accounts and balance sheets would include the stock of consumer durables, but would not include housing assets. They could include stocks of housework skills.

Sources of Data

There seems to be little alternative to using time use data. Nothing else will capture the way in which the key resource is used and the key outputs enjoyed. A crude output measure might be built from the scale of the tasks eg number of children and other dependents and other sources of support, measures from the Labour Force Survey (LFS) of reasons for not working and the size of houses etc. None of this would cope with quality change; but then some might say that is consistent with National Accounts practice. Such techniques might possibly be useful for updating, once a benchmark time use survey had been established.

Household Production

The production boundary which divides welfare generated in the market economy and that generated outside it is artificial. Observing only the market products underestimates total production and vitiates comparisons both over time and between different locations. As Gershuny and Halpin have shown, the simplistic notion derived from neo classical models of the family, that families with lower paid income, have compensating non-paid benefits does not fit what facts there are. Methods of imputing values to unpaid work which assume a free trade off between work and leisure automatically attribute a higher value to the unpaid work of richer households. But that does not mean that imputing the same value to all unpaid work irrespective of household income will necessarily show a balancing between market and non-market income. The labour saving resources of the wealthy for example are likely to make their unpaid activities more productive.

The underlying idea is that a value should be imputed to non-market household activity in the same way as it is imputed to non-market activities like public services, or many market services whose output is hard to measure. That method is essentially to measure inputs. In the case of public services there are labour inputs adjusted for some kind of measure of quality change. For households, time described as used in household activities is seen as the equivalent input. In the case of public services while the output is not marketed, the input is. It is therefore possible to find a current price value for the activity indicators. In the case of unpaid work both in the home and the community, neither the inputs nor the outputs are marketed. It is for that reason, that it is proposed to create a satellite account. This will be defined in natural rather than money units. The unit of input will primarily be time, although there is some thought of combining this with some indicators of management effort as well as capital resources like consumer durables.

A strength of satellite accounts is the possibility of operating in money and natural units. Time is clearly a fundamental natural unit. Even if imputing a value to time in certain activities or to certain kinds of unpaid labour is undertaken, the measurement of time will be the basic unit of measurement. The exchange rate between time and money requires a political judgement. The Department of Transport who use such a number for travel time, consult Ministers on its magnitude. Gershuny and Halpin suggest various ploys to bring time and money into the same account, but none seem to get round the fundamental incommensurability.

Nonetheless indices of time will themselves present difficult political judgements and could prove difficult.

Satellite accounts also provide for the measurement of output and outcome indicators. As Gershuny and Halpin argue, inputs are a poor proxy for output. There is, in the end, no substitute for the direct measurement of outputs. This would be a useful factor of other satellites such as those for public services, which would measure the provision of hospital beds on the level of health rather than the number of nurses and doctors, as it is at present.

Time Use as Welfare

The desire to produce household accounts comes partly from national accountants who worry about omitting large parts of production from the measurement of economic activity. By allowing the inclusion of household output, however, national accountants risk losing a clear definition of what they are measuring.

There is increasing pressure to construct measures which measure welfare. The traditional defence of national accounts, ie that they measure market activity which sustains welfare looks increasingly irrelevant as environmental, social and other factors are brought into account. Attempts such as the Genuine Progress Indicator (see Cobb, Halstead, Rowe²) founder because they try to graft measures of welfare for non-market activity onto national accounts measures which do not aspire to measure welfare. The National Accounts differ from welfare for at least two important reasons, they measure output rather than outcome and they use market valuations, in most cases. Trying to twist GNP to measure something else has probably gone as far as it can - and it is not far enough.

Time budgets provide an alternative framework for analysing welfare - or at least part of one. How people spend their time is as good a measure of civilisation and social progress as any. Gershuny and Halpin show how between 1961 and 1983/4, there was considerable change in the amount of time people spent in what they called more sophisticated activity, what might be called doing what they want rather than what they had to do.

The purpose of a lot of economic activity is to enable people to spend their time well. This has many dimensions. For example, time spent not being severely ill is very important, but is unlikely to be measured by time use surveys. Time spent climbing difficult rock faces is not valued in terms of the actual time spent but in terms of the intensity of the experience and possibly the value of retrospect. A welfare metric defined over time use would be highly complex and would require augmenting with other dimensions. It will need to consider not only the basic description of activity, but the time patterns in terms of variety and continuity and the interaction of time uses by different people. Measures which look at the pressure on time use in a particular activity, in terms of what follows and how soon, provide one important modifier to simple time aggregates. The strength of time use is that, by contrast with extended GDP, it would provide a consistent framework.

One important adjustment would be a capital account. This would show, as well as the market production of capital goods, the non-market investment of time in training and other aspects of human capital. These would enhance not only the measurement of productivity of paid labour, but of resources in enhancing the value of time using activities, what Amartya Sen has described as capabilities.

Time as a resource

National accounts are based on a dichotomy between resources: land, labour and capital and welfare creating outputs, and consumptions or asset building outputs. This dichotomy raises problems even within traditional accounts. All expenses incurred within production are seen

as intermediate consumption. Thus if I have a meal in pursuit of work, then that is intermediate consumption and is not measured as a component of final demand, while the same meal eaten in pursuit of pleasure is measured as consumer spending.

The idea that time use is unpaid work can be seen as equivalent to time spent in paid employment is dangerous. There are major differences in control, for example, between voluntary work, housework and paid employment. Nonetheless national accounts measures completely ignore changes in the quality of working life. Gershuny and Halpin show that the biggest change in time use over the sixties and seventies was in the kind of work people do. This cannot be picked up in a national accounts but can be in a time account, although not necessarily requiring time use. The LFS can pick up some aspects of this, but not a full analysis of the changes making people available for work.

By seeing time rather than labour as fundamental resource, we can make a clearer, more articulated distinction between resource inputs and benefit outputs. Capacity can be defined in terms of available time and its potential patterns of use. Much of the potential of the economy in the post war period was ignored because women's time was not assessed.

When it comes to extending beyond the production boundary, the paradoxes become more difficult. The classification of travel time present acute problems. Analysts like Nordhaus and Tobin³, for example, regard travel to work as a resource input like labour. Yet it is this input which enables people to occupy larger houses and have gardens, benefits which are unlikely to be effectively measured in national accounts because the volume of housing already reflects the time input as well as the cost. In addition many people actually enjoy travel. A similar paradox affects much housework, or indeed paid work, which can be more or less burdensome and more or less productive.

Much of the data for such time based accounts will not come from time use surveys. Much of it will come in the same form and from the same sources as the present national accounts. The structure of the system which turns the subscription of time to productive activities, into the spending of time in rewarding ones will still include a large chunk of "production". Notions of capacity, productivity, inflation will still exist both in their present and extended forms, but the framework will be more robust and capable of responding to social change.

It is only a mild exaggeration to suggest that the increasing intangibility of the economy point to time as the basic metric of future economies.

Hidden Economy

One of the major problems of national accounting is ensuring exhaustiveness. Surveys and administrative data sources used to measure economic activity can for a variety of reasons, miss certain areas. These range from those businesses which are too small to register for VAT and therefore do not enter by that route into the basic registers though a range of activities which have active reasons for concealment - either tax or regulation evasion or directly criminal activity. There are basically three techniques for assessing the scale of this, accounting, ratio assessment or common sense sizing. Of these the most powerful is accounting. People in receipt of hidden income may nonetheless reveal their expenditure so that their income may be deduced. Ratio methods range from the reasonably scientific assessment of expenditure on basic commodities like food to the popular but unreliable ratios of money in circulation to economic activity. The former methods rely on the argument that people spend a reasonably steady fraction of their income on food and where such ratios are revealed in household surveys suggest misalignment, hidden income may be suspected. The commonsense method is represented by the approach of, for example, Statistics Canada who suggest plausible ratios of the likely amount of hidden activity associated with elements of the accounts which they call 'skimming' ratios.

Time use is by no means as central to hidden economy work as it is to work on household satellites. Here we are concerned with activity which could, in principle be included within the production boundary. The difficulty is finding out if it has been. Most of what is thought of as the hidden economy involves market transactions, albeit in unconventional markets. The role of time use here is to provide an alternative accounting system to try to approach exhaustiveness. The fact that there are only 24 hours in the day provides a useful constraint for tracing hidden activity. It is often argued that people responding to time use surveys are likely to report activity that is not picked up from sources which rely more on employers. Labour Force surveys may also pick up some of these where they are very small, but not where there is any incentive to conceal. The time accounting constraint can help here. People can easily "forget" to report second jobs. They cannot so easily "forget" to account for the

time spent in that job. It can also be described in terms like 'helping a friend with 'some building' which do not appear to invite investigations. While people, in the UK at least, are unlikely to describe activity so criminal as to invite prosecution, much hidden economy, while possibly illegal, is not necessarily regarded as shameful or likely to be prosecuted.

1 Gershuny & Halpin. *Imputations of Household income from unpaid work*. April 1992 - unpublished.

2 Cobb, Halstead, Rowe. *Redefining Progress*. San Francisco. 1995

3 Nordaus & Tobin "Is growth obsolete" in Moss(ED) *The Measurement of economic and social performance*. Columbia University Press. New York 1973