OECD ECONOMIC SURVEYS

UNITED KINGDOM

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1993

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

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Publié également en français.

Contents

Boxes

Tables

Diagrams

Text

BASIC STATISTICS OF THE UNITED KINGDOM

THE LAND

Area (1 000 sq.km)	241
Agricultural area (1 000 sq.km), 1990	185

Major cities (population in millions, 1990 mid-year estimates):

Greater London	6.8
Birmingham	1.0
Glasgow	0.7
Leeds	0.7
Sheffield	0.5

THE PEOPLE

Population (30.6.1990), thousands	57 411
Number of inhabitants per sq.km	238
Net increase in population, 1981-90, annual average, thousands	118
Percentage change at annual rate, 1981-90	0.2

Total civilian employment, thousands, June 1992: 25 073

of which:	
Agriculture	558
Industry (incl. construction)	6 744
Other activities	17 772

THE GOVERNMENT

Public sector current expenditure on goods and services, 1991 (per cent of GDP)	21
Public sector current receipts, 1991 (per cent of GDP)	38
Net public debt, 31st March 1991 (ratio to GDP)	28

Composition of House of Commons, April 1992 (number of seats):

Conservative	336
Labour	270
Liberal	20
Ulster Unionists	13
Other	12
	651

FOREIGN TRADE

Exports of goods and services as a percentage of GDP, 1991	24

Main exports (percentage of total exports in 1991):

Machinery	28
Petroleum and petroleum products	7
Chemicals	13
Transport equipment	13
Textiles	2
Non-ferrous metals	2
Iron and steel	3

Imports of goods and services as a percentage of GDP, 1991	24

Main imports (percentage of total imports in 1991):

Machinery	25
Petroleum and petroleum products	6
Chemicals	9
Non-ferrous metals	2
Meat	2

THE CURRENCY

Monetary unit: Pound sterling

Currency unit per US$, average of daily figures:

Year 1991	0.5669
October 1992	0.6039

Note: An international comparison of certain basic statistics is given in an annex table.

This Survey is based on the Secretariat's study prepared for the annual review of the United Kingdom by the Economic and Development Review Committee on 23rd November 1992.

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After revisions in the light of discussions during the review, final approval of the Survey for publication was given by the Committee on 21st December 1992.

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The previous Survey of the United Kingdom was issued in August 1991.

Introduction

The U.K. government suspended its participation in the European Exchange Rate Mechanism (ERM) on 16 September 1992, following turmoil in foreign exchange markets. The decision to withdraw from the ERM and to float sterling was taken against the background of the longest U.K. recession in post-war history. Although the conditions for modest recovery have been present for some time, the up-turn was stalled by household attempts to reduce high debt levels. Fears that higher U.K. interest rates would be needed to defend sterling damped domestic confidence, protracted the recession and thereby exacerbated the government's fiscal position. In the event, market perceptions grew that sterling's ERM parity was unsustainable and that monetary policy was tighter than required by the needs of the domestic economy.

Following such a significant shift in monetary policy regimes, the economic outlook necessarily remains uncertain. However, the significant easing of monetary conditions – lower interest and exchange rates – will give a boost to economic activity. A slow recovery in output is now projected in the first half of 1993, gradually gathering momentum thereafter. Unemployment is likely to remain high, but decline in 1994. The government has reiterated its commitment to attaining and keeping inflation low. On the assumption that the overall stance of macroeconomic policies remains tight over the coming two years, the underlying process of disinflation is projected to continue, although the effects of the currency depreciation will be reflected in price levels.

Part I of this Survey examines the current economic situation and short-term prospects. Part II discusses macroeconomic policy settings, while Part III of the Survey reviews recent progress in structural reform, as well as areas warranting further attention. The state of the United Kingdom's environment and policy initiatives are reviewed in Part IV, along with the need to make greater use of economic incentives to improve the environment. Policy conclusions are presented in Part V.

I. Economic developments and prospects

Overview

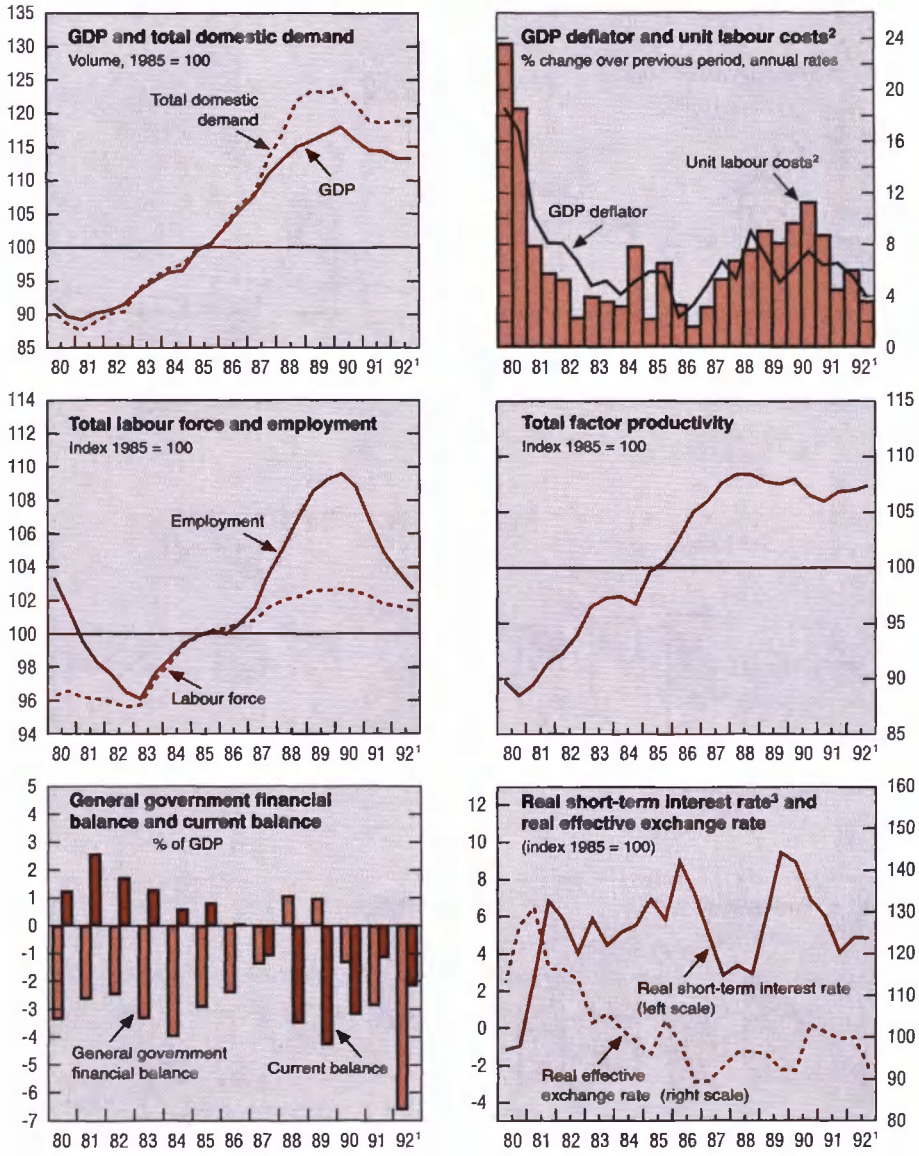
Total output has broadly stabilised since the beginning of 1992, after having fallen by some 4¼ per cent from its mid-1990 peak. Provisional data indicate that non-oil output fell 0.3 per cent (actual rate) in the third quarter, but that total GDP was flat. The failure of the economy to recover even modestly following the April election confounded the predictions of virtually all forecasters and analysts (see Pain and Britton, 1992). Many analysts have attributed the stalled recovery to the unanticipated increase in precautionary household savings and a weak foreign balance (Diagram 1). In contrast to the pick-up from the 1979-81 recession, these two factors have damped the already hesitant recovery in domestic demand since mid-1991 (Diagram 2). Unemployment has risen over the past thirty-two months, reaching 2.87 million in October. The current account deficit widened during the first nine months of 1992, despite weak domestic demand. But inflation on most measures is down to its lowest rate since the 1960s, albeit still somewhat above those of the low-inflation OECD countries.

Recent economic developments and prospects

The hesitant consumer

The current recession is the longest in post-war history (Table 1 and Diagram 3). As private consumption accounts for roughly three-quarters of GDP, the behaviour of the consumer is key to the timing and strength of recovery. The personal sector has undergone considerable balance-sheet adjustment: households have scaled back spending, as disinflation, falling asset prices and high nominal interest rates shifted decisions from spending in favour of higher discretionary saving and debt repayment. Although debt-service ratios comparable with those

Diagram 1. **KEY ASPECTS OF ECONOMIC ACTIVITY**

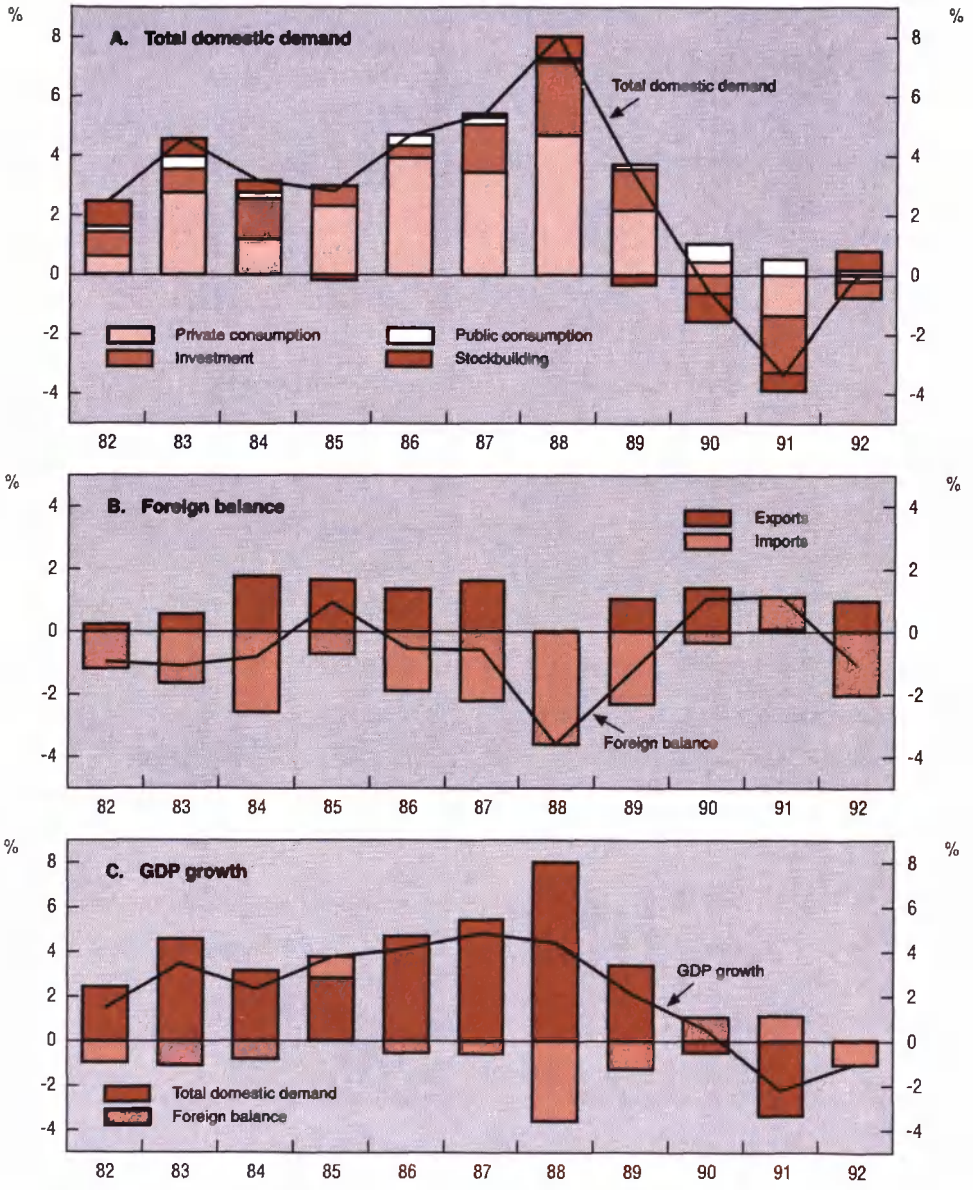


1. Estimates.
2. Total economy.
3. Three-month interbank rate.

Source: OECD, *National Accounts, Main Economic Indicators* and estimates.

Diagram 2. **CONTRIBUTIONS TO GDP GROWTH**

As a percentage change of GDP in previous year



Source: Central Statistical Office.

Table 1. **Demand and output**

Percentage volume changes, 1985 prices, s.a.a.r.

	1986	1987	1988	1989	1990	1991	1991		1992	
							Q 3	Q 4	Q 1	Q 2
Private consumption	6.4	5.5	7.4	3.3	0.7	–2.1	–2.2	–2.0	–1.6	0.0
Government consumption	1.8	1.2	0.6	0.9	3.2	2.8	3.2	1.6	1.6	–0.5
Gross fixed investment	2.4	9.6	14.2	7.2	–3.1	–9.9	–8.6	–5.7	–2.3	–3.5
of which:										
Public[1]	0.6	–7.2	–7.6	17.4	6.7	–7.6	–4.0	–8.2	13.6	–3.7
Private residential	11.2	3.6	21.1	–5.5	–14.5	–14.9	–9.2	4.0	–2.1	–10.6
Private non-residential	0.9	16.9	18.4	8.2	–2.8	–9.6	–9.6	–6.7	–6.1	–2.2
Final domestic demand	4.8	5.3	7.3	3.6	0.4	–2.6	–2.4	–2.0	–1.1	–0.7
Stockbuilding[2]	0.0	0.1	0.7	–0.3	–0.9	–0.6	2.3	1.7	1.0	0.2
Total domestic demand	4.7	5.4	8.0	3.3	–0.5	–3.2	–3.2	–1.6	–0.7	0.6
Exports	4.7	5.6	–0.1	3.8	4.9	0.3	3.0	2.2	4.5	2.5
Imports	6.9	7.8	12.2	7.4	1.0	–3.1	–1.8	0.1	5.7	6.6
Foreign balance[2]	–0.5	–0.6	–3.6	–1.3	1.0	1.1	0.0	–0.7	–3.5	–1.4
GDP at market prices[3]	4.1	4.8	4.4	2.1	0.5	–2.2	–1.9	–1.1	–1.3	–0.8
Memorandum items:										
Output measure of GDP	3.4	4.6	4.6	2.2	0.6	–2.5	–2.2	–1.7	–1.3	–0.5
Manufacturing production	1.3	5.2	7.0	4.3	–0.4	–5.3	–5.4	–3.8	–2.1	–0.7
Employment	0.3	2.3	3.3	2.7	0.3	–3.2	–3.7	–3.8	–3.0	–2.5
Unemployment rate[4]	11.8	10.4	8.4	6.3	5.8	8.1	8.5	8.8	9.6	9.6
Real personal disposable income	4.1	3.5	6.0	4.5	2.5	–0.5	–0.8	–0.9	0.7	0.8
Personal saving ratio	8.6	6.8	5.6	6.6	8.3	9.7	10.3	10.3	11.0	10.3

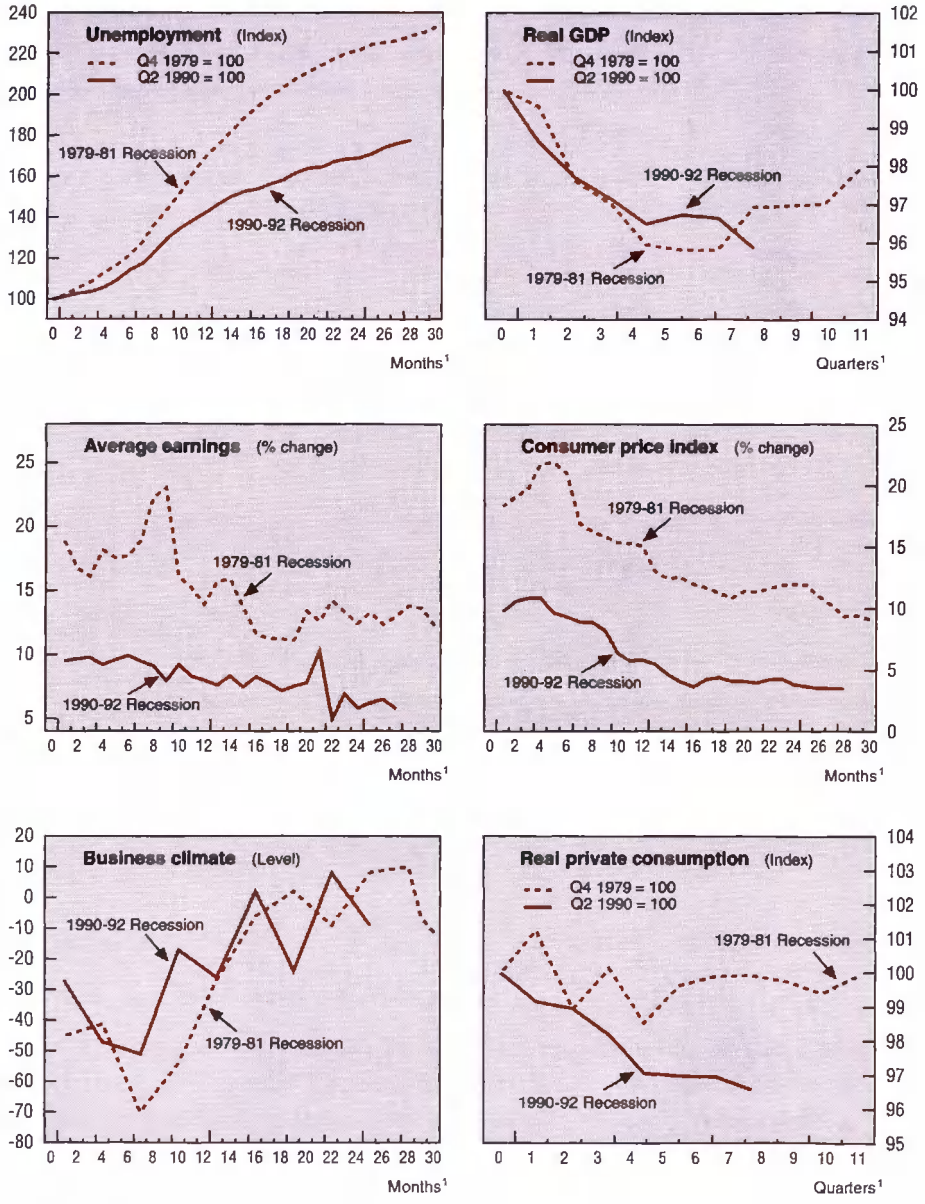
1. General government and public corporations. Figures are affected by the privatisation programme.
2. Changes as a percentage of GDP in the previous period.
3. The difference between expenditure-based GDP and "compromise" GDP. The latter is the average of the output, expenditure and income measures of GDP.
4. Unadjusted claimant count.

Source: Central Statistical Office.

in 1988 have been re-established largely through lower interest rates, it is difficult to assess what level of debt is now judged by households to be sustainable.

Private consumption rose 0.5 per cent (actual rate) in the second quarter of 1992, reflecting a relatively weak rebound from the first-quarter fall related to election uncertainty. The underlying level of consumption following the post-election recovery is not yet clear; retail sales continued to rise gently in the third quarter while consumer confidence fell back sharply. By mid-1992, the household savings rate was above its longer-term average, but still below levels of 1980-81, though then it was probably boosted by high inflation (Diagram 4).

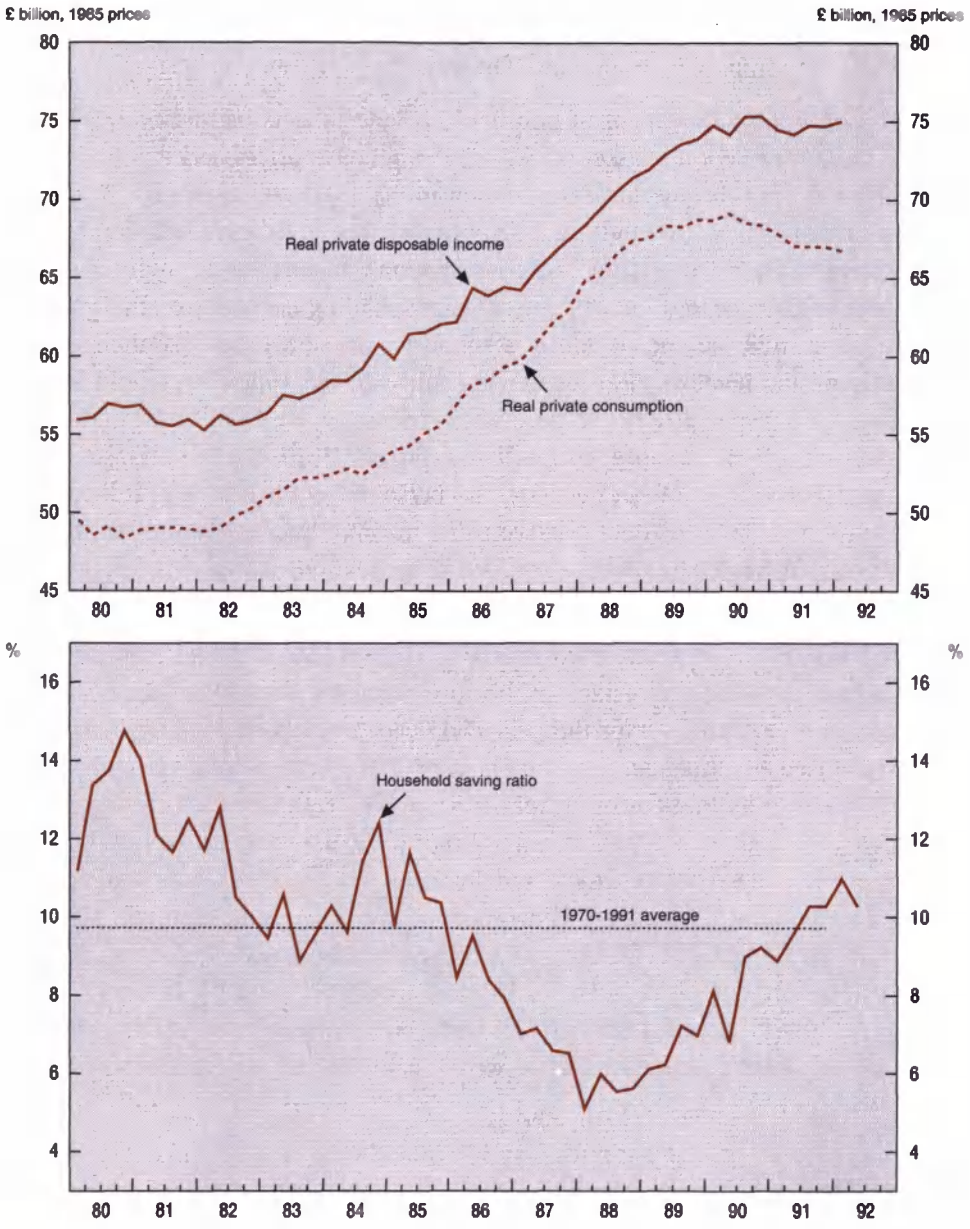
Diagram 3. **CURRENT ECONOMIC RECESSION: COMPARISON WITH 1979-81**



1. From recession.

Source: OECD, *Main Economic Indicators.*

Diagram 4. **CONSUMPTION AND SAVINGS**



Source: Central Statistical Office and OECD.

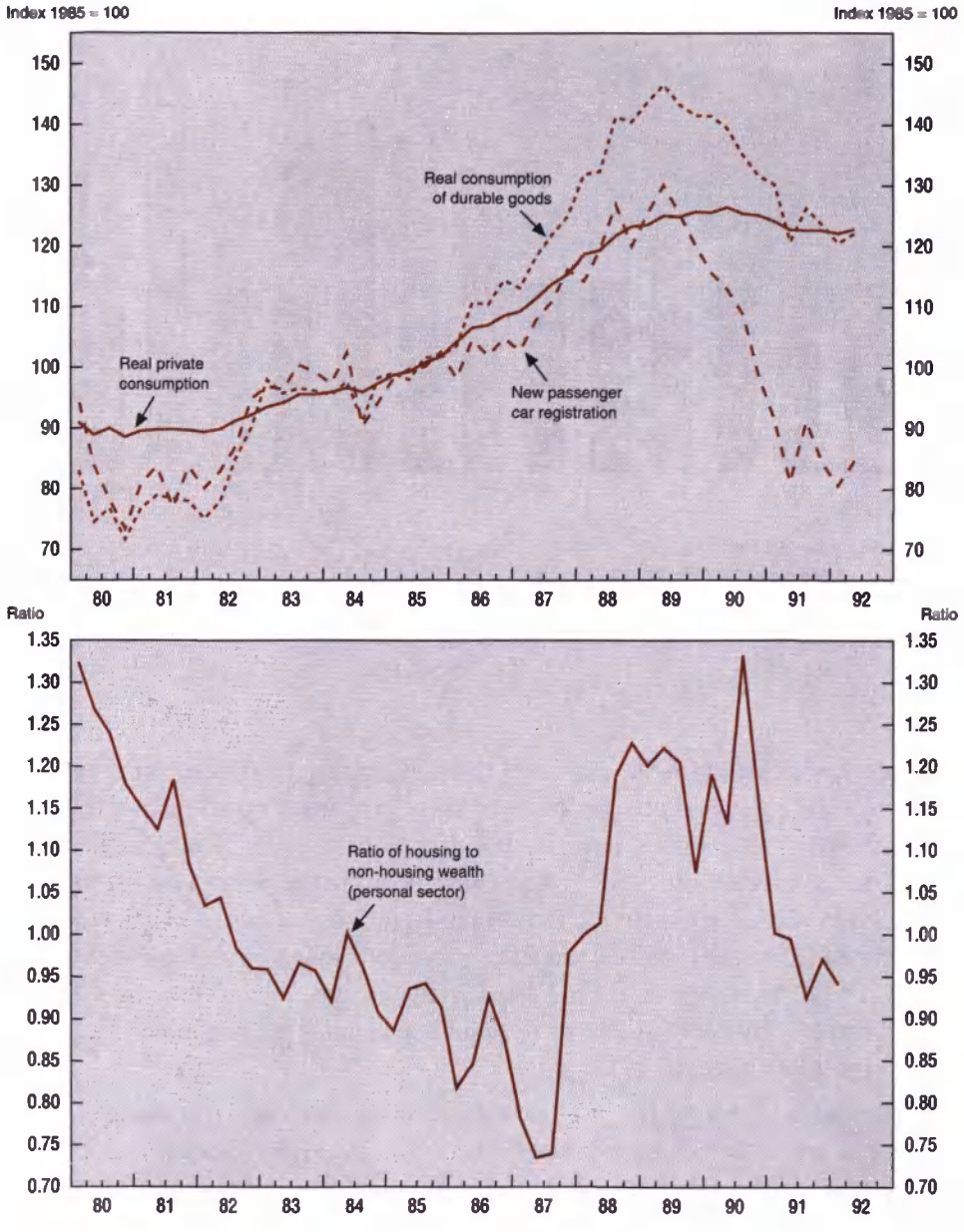
Compared with the 1979-81 recession, the up-turn in private consumption has lagged by a year, with particular weakness in consumer durables (furniture, consumer appliances and especially new car sales),[1] where discretion concerning the timing of purchase is important (Diagram 5).

The on-going adjustment of household balance sheets had its origins in the parallel surges of debt and asset prices – notably house prices and equities – that accompanied financial market deregulation in the 1980s (Diagram 6). Against a background of steady growth in real disposable income, financial market deregulation permitted a ''decoupling'' of consumption and income through the 1980s – as households appeared increasingly to base spending decisions on their wealth rather than current income. While it is sound for consumers to base their spending partly on the level of their wealth, for much of the 1980s household investment decisions (especially house purchase) appear to have been based on unrealistic assumptions of steadily *rising* house prices. With *nominal* house prices dropping for the first time in decades, the personal sector has been reluctant to hold such a high level of debt relative to its income. Successive cuts in interest rates since mid-September have alleviated this situation.

The squeeze from the combination of asset price deflation and excessive indebtedness has been acute, particularly for households that had extracted and spent capital gains on real estate, by borrowing on the security of their homes.[2] The drop in house prices over the past two years and tighter lending conditions virtually closed off this source of credit growth and left households with heavy debt servicing to be met out of current income. The resultant cash-flow problem has been reflected in a record level of mortgage payment arrears and house repossessions. These factors have fed back on house prices and weighed on consumer confidence. Mortgage rate cuts announced in response to the base rate reductions in September, October and November, will take the rates paid by home owners from 10¾ per cent in October to 8½ per cent by January. These will be the lowest rates for 15 years and will provide significant relief to households, though their debt-income ratios will remain high by all but the most recent standards.[3]

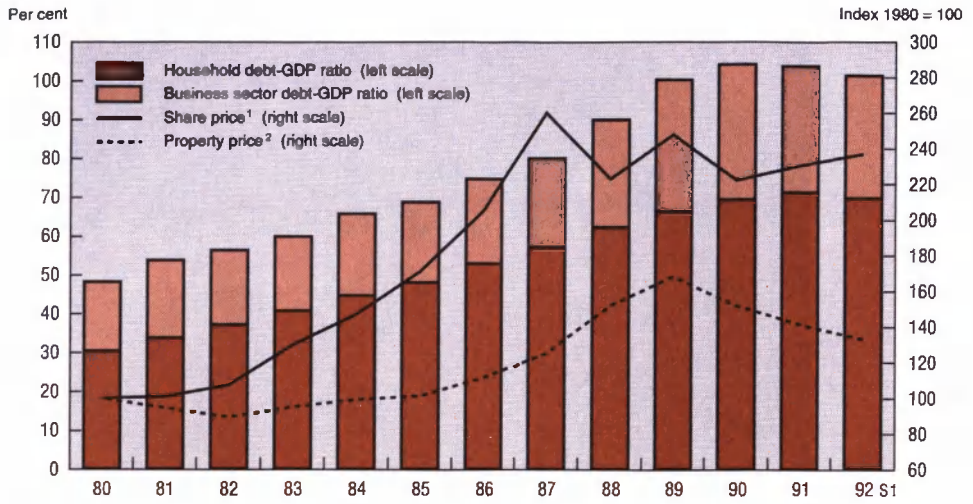
High ''gearing'' (leveraging) and falling house prices have created an unprecedented situation in which the Bank of England estimates that one million households (roughly one in ten) had ''negative home equity'' in the second quarter of 1992 – rising to 1.2 million in the third quarter. While such estimates

Diagram 5. **FACTORS AFFECTING CONSUMPTION**



Source: Central Statistical Office, *Economic Trends;* Bank of England.

Diagram 6. **ASSET PRICES AND PRIVATE DEBT**



1. 500 share index deflated by the RPI.
2. Price of houses (all dwellings) deflated by the RPI.

Source: Central Statistical Office, *Financial Statistics;* OECD, *Main Economic Indicators.*

are approximate, it has been estimated that outstanding mortgages on properties with negative equity exceed the value of these properties by £6 billion or 1 per cent of GDP. Such losses have a strong concentration on younger first-time buyers at the height of the 1988-89 property boom in the South-East.[4] This may be a relevant factor in explaining the depressed turn-over level of existing houses and new housing starts, despite the temporary moratorium on stamp duties introduced in 1992, although its macroeconomic significance may well be overstated.[5] The effects of debt on households' spendable income is a more important factor restraining consumption.

How close the adjustment of household balance sheets is to completion is difficult to judge, as the desired debt to income ratio is hard to determine. Higher discretionary savings may have succeeded in stabilising and even rolling back a little the debt to income ratio in 1992, checking its steep rise of the 1980s. The debt service ratio is now roughly back to its 1988 level – a rate which appeared to

be sustainable – and substantial financial surpluses have been built up over the past two years (equivalent to some 5 per cent of GDP).

Business has adjusted rapidly

Industrial and commercial companies (ICC) have adjusted relatively quickly to recession, passing on part of the burden of balance-sheet adjustment to other sectors. Stocks and manning levels have been reduced, and investment re-oriented towards rationalisation and cost reduction. Although still historically high, capital gearing has declined through new equity issues (which rose threefold in 1991) and unusually, by a small net repayment of bank debt in 1991-92.

After running record financial deficits in the range of £22 to 20 billion in 1989 and 1990, the ICC sector cut this to £10.7 billion in 1991 and to around £8 billion (annual rate) by mid-1992. Even though the debt-service ratio has declined, company insolvencies remain close to record levels. In these circumstances, the maintenance of high company dividend payments is puzzling.[6] Nonetheless, given the tendency for the company sector to run a near-balanced position over the cycle, an end to corporate balance-sheet adjustment may be in sight.

Profitability has held up relatively well compared to the 1979-81 recession, although the non-wage share of national income has been affected by low capacity utilisation. In manufacturing, this has reflected rapid labour shedding, strong productivity gains, moderation in labour costs and steeply falling industrial input prices. Unlike previous recessions, the service sector has also been hard hit. Banking, financial services and the insurance industry have shed labour. Price discounting in wholesale and retail trade has become extensive, especially in the clothing and durable goods sector. The construction and commercial property sectors have been doubly hit by overbuilding and general asset price deflation. Record vacancy rates for commercial offices and buildings persist and commercial rents and construction prices have dropped by up to a third – affecting the income and asset quality of banks and other financial institutions, as well as cash flow and net worth in the real-estate sector (see below).

Investment has remained resilient

A positive feature of the economy during this recession has been the resilience of business investment, aside from real estate, as well as expenditure on training and R&D. Gross domestic fixed capital formation has been well main-

tained as a share of output, albeit falling modestly in volume terms in the first two quarters of 1992 (cf. Diagram 2). All in all, the resilience of overall investment levels may be taken as encouraging evidence that business is taking a more medium-term view of the competitive challenge and opportunities facing U.K. industry in the single European market.

Major sources of strength have been the boost to public investment, notably in transport and social infrastructure (announced in the 1991 Autumn statement), and a 17 per cent increase in outlays by the newly privatised water and utilities companies (for investment to meet environmental objectives, see Chapter IV). Investment in manufacturing fell in the first quarter of the year but recovered strongly in the second quarter, despite continuing declines in manning levels and low rates of capacity utilisation. Destocking was quite small in aggregate in the second quarter of 1992 (manufacturers built up stocks slightly, while distributors destocked heavily). Data for the third quarter showed a further ''surprising'' small addition to stocks by manufacturers, and less destocking by distributors than in the previous quarter. The third quarter rise may have been involuntary and, as indicated by the October CBI survey, could be corrected later on.

Labour markets are depressed

As the recession has lengthened, companies have reacted by shedding labour, leading to a loss of over 1 million jobs. From its June 1990 low, unemployment has increased for thirty-two consecutive months, bringing total unemployment (claimants count) to 2.87 million in October 1992 (Table 2). By the quarter to October 1992, long-term unemployment (over 52 weeks) had increased by close to half a million, unwinding a part of the reduction in long-term unemployment achieved in the late 1980s, despite the continuation of the cost-effective job ''restart programme'' (Diagram 7).

Other indicators (such as overtime worked, job vacancies and short-time work) are consistent with depressed labour market conditions. The drop in employment has cut across virtually all sectors and regions of the economy, in contrast to the 1979-81 recession which was concentrated on the tradeable goods sector and on the centre and north of the country. The rise in unemployment has been such that it has been felt more uniformly across all strata of the economy and has hit full-time males quite hard with consequences for attitudes concerning job security, wage bargaining and confidence.

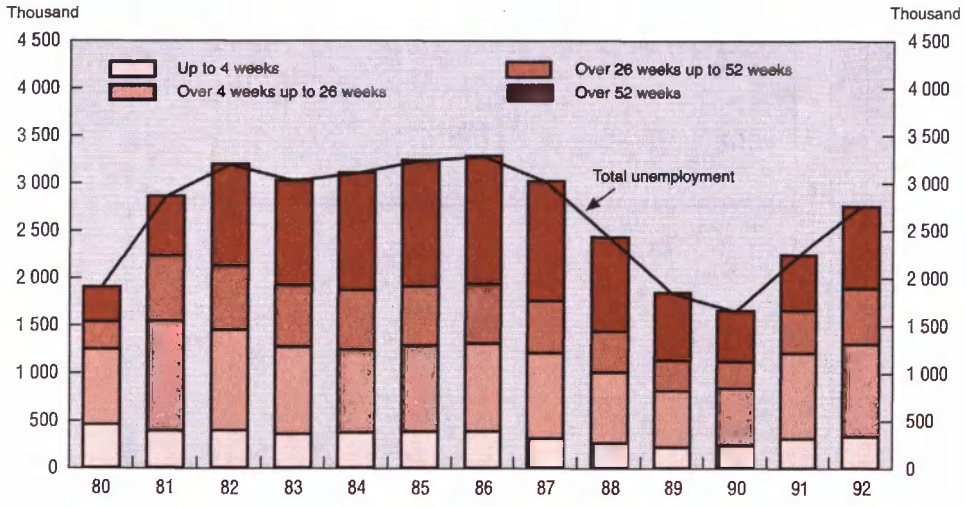
Table 2. **Labour market developments**

	1987	1988	1989	1990	1991	1991		1992		
						Sep.	Dec.	March	June	Sep.
	Percentage changes from previous period, seasonally adjusted annual rates									
Working population[1]	0.7	0.9	0.5	0.0	–0.7	–0.5	–1.9	1.0	–1.8	–3.9
Employment total	2.3	3.3	2.7	0.3	–3.2	–3.1	–3.5	–0.6	–3.2	–6.1
Employees	1.3	2.9	1.7	0.4	–2.9	–2.7	–3.7	–0.2	–2.3	–6.7
of which:										
Manufacturing	–0.9	1.2	0.3	–1.3	–5.7	–7.2	–4.8	–4.4	–2.7	–7.5
Government	0.5	0.5	–2.7	0.5	–3.0	–2.0	–1.0	..	..	..
Self-employed	7.5	5.7	7.0	0.6	–4.3	–4.7	–4.8	–4.9	–5.1	–1.6
Productivity[2]										
Total	2.3	1.2	–0.5	0.3	0.8	3.9	2.5	–0.8	2.7	..
Manufacturing	6.1	5.8	4.0	0.9	0.5	7.6	–0.5	5.7	4.6	7.8
	Levels, seasonally adjusted									
Numbers unemployed-claimant count										
Unadjusted	2 903.5	2 370.4	1 798.7	1 664.4	2 291.9	2 450.7	2 551.7	2 707.5	2 678.2	2 847.4
Adjusted[3]	2 822.3	2 274.8	1 784.4	1 662.7	2 287.4	2 458.1	2 551.2	2 652.7	2 724.3	2 843.4
Unemployment rate-claimant count										
Unadjusted	10.3	8.4	6.3	5.8	8.1	8.7	9.0	9.6	9.5	10.1
Adjusted[3]	10.0	8.1	6.3	5.8	8.1	8.7	9.0	9.4	9.6	10.1
Standardised[4]	10.3	8.6	7.1	6.9	8.7	9.1	9.3	9.5	9.7	10.1
Unfilled vacancies[5]	235.4	248.7	219.5	173.7	117.9	107.9	114.1	119.8	115.2	107.0

1. All figures relate to the United Kingdom. The work force is the sum of employees in employment, the self-employed, HM Forces, the participants in work-related government training programmes and the unemployed.
2. Output per person employed, based on output-based GDP and the index of output of manufacturing industries.
3. The adjusted series has been restricted to claimants aged 18 and over to avoid breaks in the series due to new regulations in the entitlement of young people to claim unemployment-related benefits from 12th September 1988; it also takes account of past discontinuities to be consistent with current coverage. For a full description see *Employment Gazette*, December 1988.
4. ILO/OECD definition, based on Labour Force Surveys.
5. Thousands, excluding Community Programme vacancies.

Source: Department of Employment, and OECD, *Main Economic Indicators.*

Diagram 7. **STRUCTURE OF UNEMPLOYMENT**



Source: Department of Employment, *Employment Gazette.*

Although the adjustment of manning levels has been more rapid than in the 1979-81 recession, in the sense that productivity performance has been better, the recorded rise in unemployment has so far been somewhat less pronounced. This in part reflects slower underlying demographic growth of the labour force, though the fall in GDP in the early 1980s recession was also somewhat larger than has occurred since the second quarter of 1990. Self-employment which had increased by over 50 per cent from 1979 to 1990, fell in 1991 and again in 1992, reflecting the high level of insolvencies among new, smaller firms which had been a principal source of job creation in the 1980s.

Maintaining low inflation remains a priority

On the eve of sterling's departure from the ERM, the economy was on a clear disinflationary path. Macroeconomic policy was bearing down on inflation, and it appeared that the government's inflation forecast would be over-achieved: producer prices and wage settlements were recording their lowest rates of increase since the 1960s (Table 3). While withdrawal from the ERM has meant

Table 3. **Costs and prices**

Percentage changes from the same period a year earlier

	1987	1988	1989	1990	1991	1991		1992	
						Q 3	Q 4	Q 1	Q 2
Retail prices	4.1	4.9	7.8	9.5	5.9	4.8	4.2	4.1	4.2
Producer prices[1]									
Material and fuel purchased	3.1	3.2	5.8	–0.3	–1.1	–0.9	–1.3	–0.2	–1.3
Output home sales	3.9	4.5	5.1	5.9	5.6	5.5	5.0	4.5	3.6
Import prices[2]									
Goods	2.7	–1.1	7.4	3.8	0.4	2.9	2.0	1.1	–0.5
Non-oil goods	2.7	0.2	6.5	3.4	0.7	2.8	4.3	2.5	–0.5
Earnings and wages									
Average earnings	7.7	8.8	9.1	9.7	8.0	7.9	7.2	7.8	6.2
Manufacturing	8.1	8.4	8.8	9.4	8.2	7.8	7.7	8.6	6.0
Public administration[3]	6.8	8.2	9.9	10.3	6.8	7.6	7.3	7.0	7.0
Memorandum items:									
National accounts deflators									
Private consumption	4.3	5.1	5.9	5.3	7.2	8.0	7.7	7.4	5.5
GDP at market prices	5.0	6.6	7.1	6.3	6.7	6.4	6.5	6.6	5.5
New house prices	16.2	26.9	20.4	–0.9	–2.7	2.0	–3.5	3.6	1.0
Unit wage costs[4]									
Total	4.5	7.2	9.5	10.0	7.8	6.8	5.7	6.0	4.2
Manufacturing	1.8	2.5	4.6	8.5	7.6	6.3	4.4	4.1	1.6

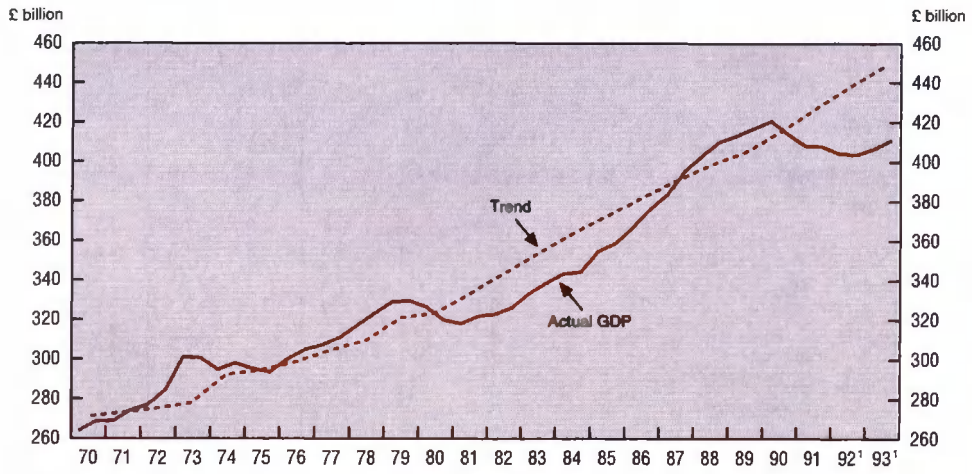
1. Manufacturing.
2. Balance-of-payments definition.
3. From 1989, new base year 1988 = 100.
4. Wages and salaries per unit of output.

Source: Department of Employment and Central Statistical Office.

easier monetary conditions, as gauged by both the exchange rate and short-term interest rates, underlying inflation performance ought not deteriorate significantly. Given the large output gap and continuing disinflation in the system, the initial effects of a lower exchange rate on inflation should be muted (Diagram 8). Indeed, disinflation should resume once the effects of depreciation pass through – assuming that macroeconomic policy checks the spill-over effects of depreciation on inflation expectations and compensatory wage claims (see below).

Following a run of months in the earlier part of the year during which the 12-month rate of increase in the "headline" retail price index (RPI) had remained stuck in the 4 to 4¼ per cent range, it fell over the summer to 3.6 per cent in August and remained unchanged in September and October.[7] The RPI

Diagram 8. **THE OUTPUT GAP**
1985 prices



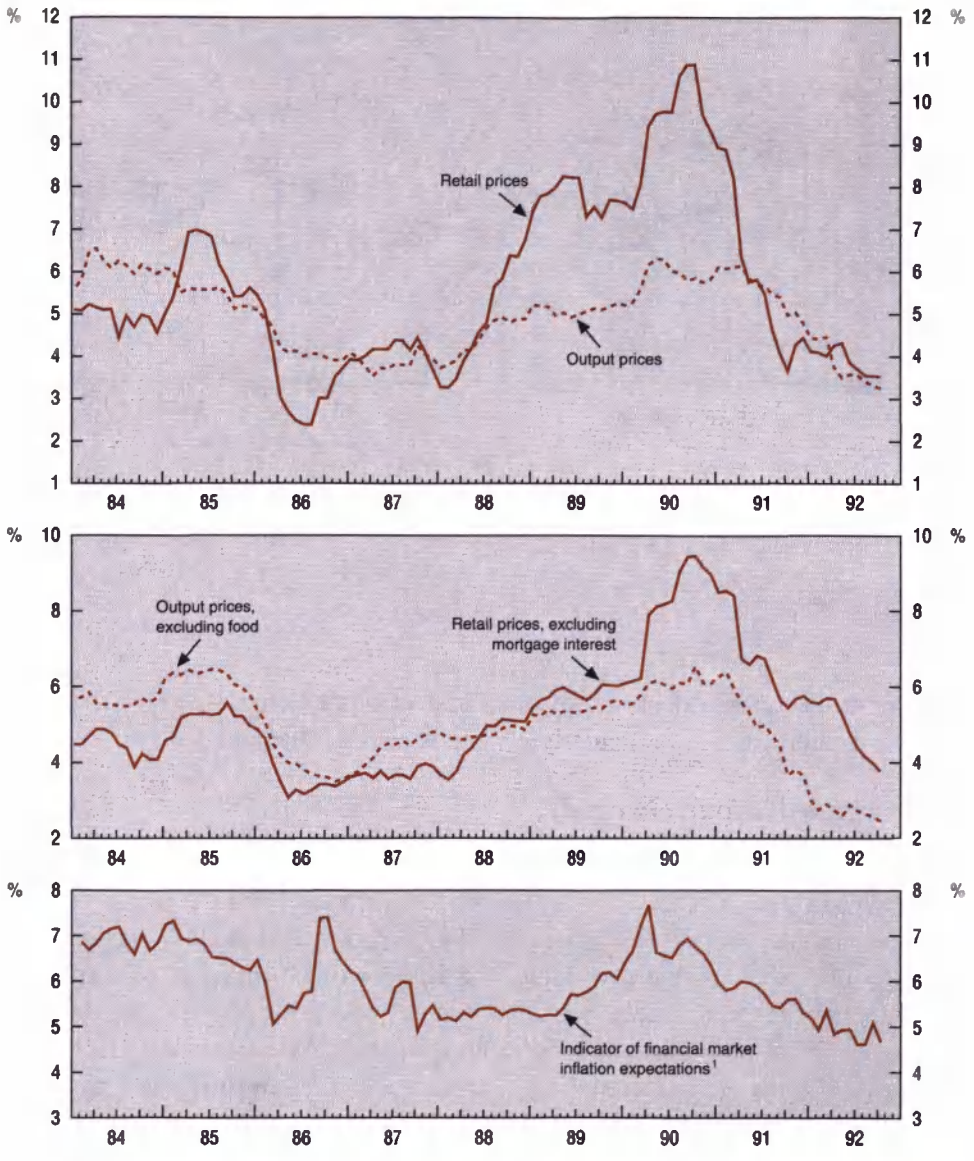
1. Estimates.
Source: OECD.

excluding mortgage interest payments, which is a good indicator of ''core inflation'', dropped from 5.7 per cent in March-April to 3.8 per cent in October. Goods' price inflation has been particularly moderate – producer price increases have typically been in the 0 to 3 per cent range. Price discounting has become prevalent in many areas, with the October CBI survey showing the lowest seasonally-adjusted net balance of firms expecting to increase prices since the beginning of the survey in February 1959,[8] and evidence of a fall in general price expectations (Diagram 9).

As in many OECD countries, prices for a wide range of services have been slow to respond to weak market conditions. In the United Kingdom this reflected in part the rise in VAT from April 1991 and inertia in price adjustments for the recently privatised companies (electricity, gas, water and telephone) due to their fixed price formulae for a pre-determined time period.[9] However, as wage moderation has spread to the sheltered service sector and price setting formulae for regulated firms tightened, the rise in service prices has begun to slow, a trend that

Diagram 9. **INFLATION AND INFLATION EXPECTATIONS**

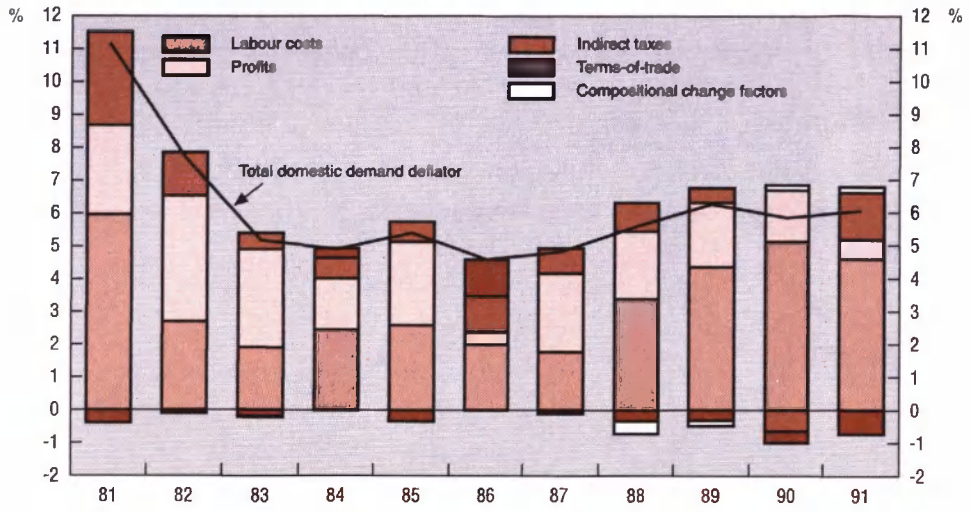
Year-on-year percentage changes



1. Measured by the difference between the real gross redemption yield on Treasury index-linked long-term bonds and the gross yield on Treasury bonds.

Source: Central Statistical Office, *Economic Trends* and *Financial Statistics.*

Diagram 10. **CONTRIBUTION TO PRICE CHANGES**[1]



1. See Technical Annex for the decomposition of the total domestic demand deflator.
Source: OECD, *National Accounts*, and estimates.

could soon become evident in the domestic demand deflator despite the short-run effects of depreciation, particularly on goods prices (Diagram 10).

Has wage behaviour changed?

Wage behaviour in the coming two years will critically determine the extent to which sterling's depreciation will have positive effects on the real economy. The more wages respond to slack in the labour market, and the less they respond to price increases from depreciation, the better will be inflation performance, international competitiveness, job opportunities and prospects for growth. The same goes for prices – a squeeze on profit margins in conditions of market slack is necessary for wage moderation to be translated into competitiveness gains and for real incomes of households not to be unduly compressed, with adverse effects on consumption. Given depressed product markets, prospects are good for higher import prices to be partly absorbed into profit margins. The key indicator of inflation for wage bargaining attitudes, the RPI, will also be damped for a while

by the effects of falling mortgage interest rates. (For a review of the U.K.'s inflation performance and wage behaviour, see Chapter III of the OECD *Survey of the United Kingdom 1990/91*).

Wage settlements have dropped quickly, even though the unemployment rate is not as high as in the mid-1980s. By mid-1992 settlements had already dropped to around 4 per cent compared with some 10 per cent just 18 months earlier. However, the drop appears to have slowed. New settlements in the manufacturing and private services appear to have temporarily stabilised in the 4 to 4¼ per cent range. Whole economy underlying average earnings came down steadily in the first half of 1991, falling below 8 per cent in the summer, and then stalled in the range of 7¾ to 7¼ per cent until March 1992. Earnings growth has continued to fall since early 1992 to 5½ per cent in September. All in all, wage and price disinflation has been quite pronounced over the past two years, but it has been achieved with rising unemployment. Indeed, the observed degree of disinflation is in line with what would have been expected on the basis of past relationships. Given the depth of the recession, it is difficult to identify any ERM credibility effects.

It is striking that throughout the recession, those in work have continued to receive *real* wage gains, in marked contrast to experience in the United States, Canada and Australia.

The external account remains in substantial deficit

In contrast to the 1981-82 business cycle, when net exports boosted recovery, external transactions have damped the recovery in real GDP since early 1991 – notwithstanding the weakness of the United Kingdom's domestic demand. In the first half of 1992, import volumes of goods and services were up some 9 per cent (annual rates) on the previous half year, while exports of goods and services were up 2 per cent (Table 4). The current account deficit was almost £11½ billion (at an annual rate), roughly 2 per cent of GDP. The deficit will tend to worsen in the near term as the "J"-curve effects[10] dominate and as the economy recovers, but could narrow thereafter as improved competitiveness lifts the trade accounts (Table 5).

While a rapid rise in imports is not unusual in the early stages of a cyclical recovery, the increases recorded since mid-1991 are strong, relative to domestic demand, perhaps partly reflecting a shift in the composition of domestic demand

Table 4. **Trade volume and prices**

Percentage changes

	1987 Weights	1987	1988	1989	1990	1991	1992[1]
Export volumes[2]							
Total goods	100.0	5.5	2.5	4.3	6.7	1.4	2.5
Food	7.0	3.2	0.4	9.8	0.4	5.2	6.6
Manufactures	79.2	8.2	6.7	9.4	7.6	2.7	2.4
Energy	11.0	–3.4	–6.5	–19.9	7.3	–3.1	2.9
Raw materials	2.8	7.5	–12.7	4.3	–2.2	–3.4	–2.1
Export prices[2]							
Total goods	100.0	3.9	0.4	9.6	3.6	–0.3	2.5
Food	7.0	–1.1	–1.6	7.9	8.0	3.8	4.2
Manufactures	79.2	3.4	1.7	5.5	2.3	–0.4	2.4
Energy	11.0	4.9	–23.6	23.3	19.0	–6.2	–3.7
Raw materials	2.8	–0.7	8.4	6.2	–2.2	–7.2	1.7
Import volumes[2]							
Total goods	100.0	7.1	13.7	7.9	1.3	–2.8	3.7
Food	10.8	0.2	5.3	2.8	2.7	1.0	6.1
Manufactures	76.7	10.1	17.7	9.0	1.0	–4.4	7.1
Energy	6.5	–1.6	3.1	8.8	6.8	1.8	0.0
Raw materials	6.0	9.3	1.1	–1.5	–1.7	0.0	7.6
Import prices[2]							
Total goods	100.0	2.5	–0.3	6.1	2.0	–3.0	3.1
Food	10.8	0.8	–0.5	4.7	4.9	–0.8	2.7
Manufactures	76.7	2.7	0.0	5.4	1.2	–1.7	1.1
Energy	6.5	–2.7	–19.9	17.2	14.9	–5.3	–10.4
Raw materials	6.0	2.8	4.0	10.2	–4.5	–16.8	–1.8
Memorandum item:							
Terms of trade							
Total goods		1.3	0.7	3.3	1.6	2.8	–0.6

1. Estimates.
2. The total does not necessarily equal the weighted average of its components due to statistical discrepancies and shifts in weights.

Source: OECD.

towards manufactures. In addition to large erratic factors related to capital goods imports (Diagram 11), there has also been strong growth in consumer goods imports.[11] The phenomenon of a steady rise in the share of imports in domestic demand has been more pronounced in the United Kingdom than in most OECD countries. This may reflect *inter alia* the rise in U.K. producer prices relative to import prices over the past two years and/or the contraction of the United

Table 5. **The current account**[1]

£ billion

	1988	1989	1990	1991	1992	
					Q 1	Q 2
Exports	80.3	92.2	101.7	103.4	26.1	26.7
Imports	102.0	116.8	120.5	113.7	29.2	29.9
Trade balance	–21.6	–24.6	–18.6	–10.1	–3.1	–3.2
Services, net	9.6	7.5	6.7	5.3	1.4	1.8
Investment income, net	5.0	3.5	2.1	0.3	0.3	0.4
Non-factor services, net	4.6	4.0	4.6	5.0	1.0	1.4
Private transfers	–0.3	–0.3	–0.3	–0.3	–0.1	–0.1
Official transfers	–3.2	–4.3	–4.6	–1.0	–1.1	–1.4
Invisibles, net	6.1	2.9	1.6	3.8	0.2	0.3
Current balance	–15.5	–21.7	–17.0	–6.3	–2.9	–2.9

1. OECD definitions.
Source: OECD.

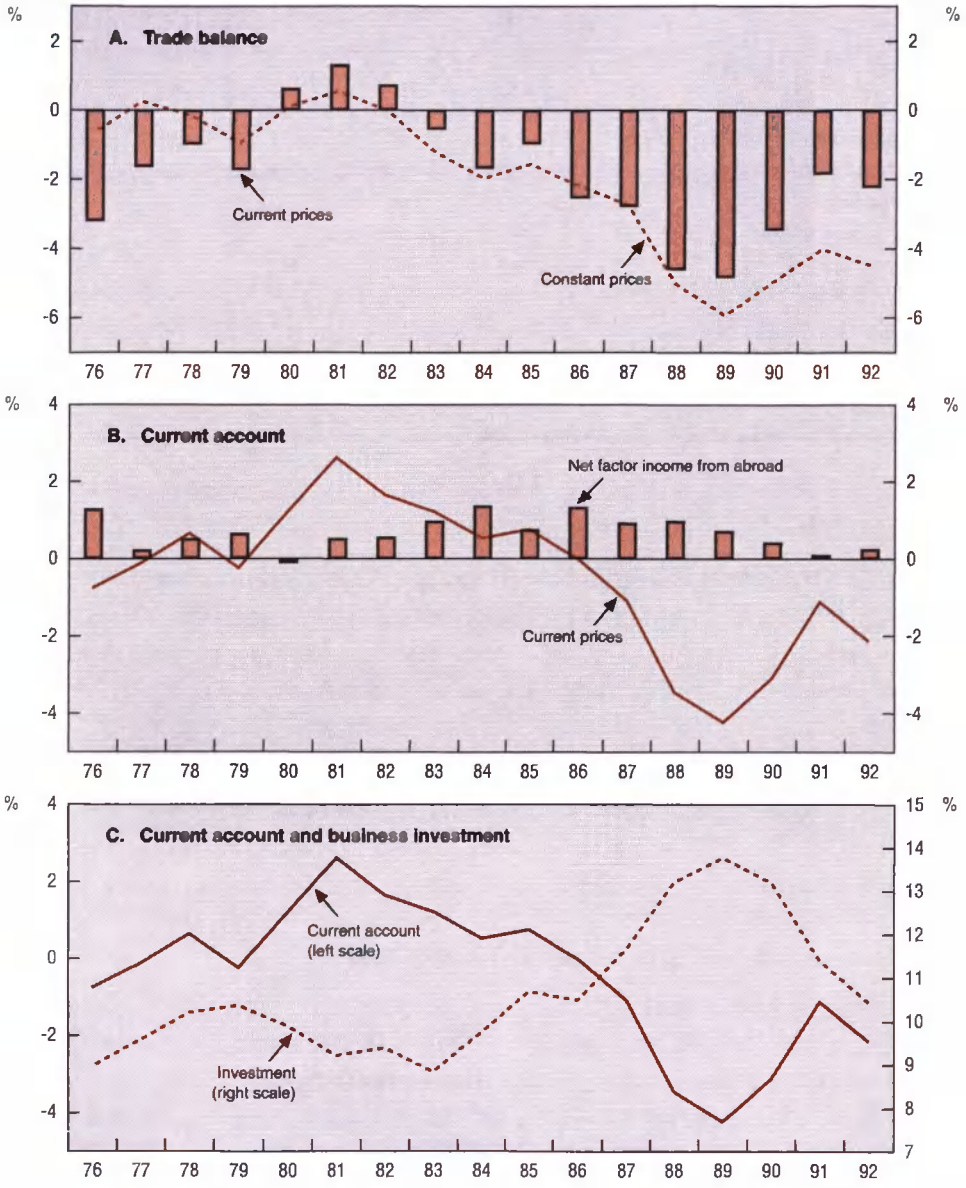
Kingdom's traditional industrial base. If the latter effect has dominated, depreciation may only have its full effects in improving the trade accounts over a longer period, reflecting lower costs of production relative to trading partners, and after higher profitability in the tradeables sectors results in expanded productive capacity.

U.K. exporters have lost market shares since early 1990. This may reflect in part the lagged competitiveness effects of the run-up of sterling prior to its entry in the ERM, as well as the time taken to bring down U.K. wage and price inflation (Diagram 12). The depressed European car market, for which foreign firms based in the United Kingdom have become important sources of supply, was also a significant factor in the first half of 1992.

Taking a longer-term perspective, starting in 1981, the sharp drop in the effective exchange rate and improved competitiveness of U.K. manufactured exports was first reflected in small, but steady export market-share gains through the 1980s – a break in the trend decline which had persisted for decades. More recently, exports were also boosted by rapid growth in Japanese transplant car exports to other EC countries. Since early 1990, some of the earlier gains in competitiveness have been reversed. ERM membership, after a run-up of sterling

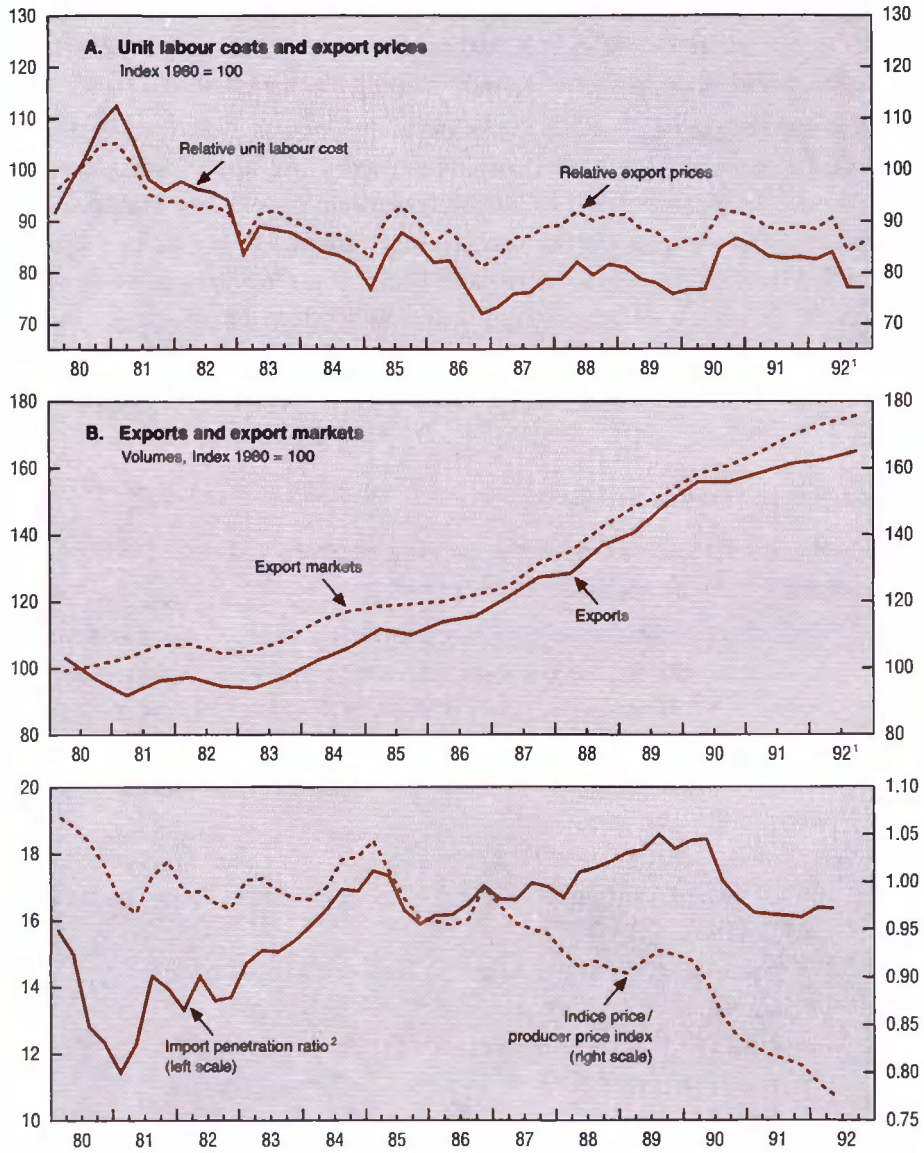
Diagram 11. **CURRENT ACCOUNT AND INVESTMENT**

As per cent of GDP



Source: OECD estimates.

Diagram 12. **INTERNATIONAL COMPETITIVENESS FOR MANUFACTURING**



1. Estimates for second half of 1992.
2. Ratio of imports of manufactured goods in total domestic demand.

Source: Central Statistical Office and OECD.

and at a time when U.K. inflation was significantly above that of its trading partners, impaired cost competitiveness. However, the recent drop in sterling's effective exchange rate has improved U.K. cost competitiveness to its best position since the mid-1980s. U.K. exporters are well placed for the projected pick-up in world trade in 1993-94, and should gain market share.

A feature of recent current-account developments has been the sharp drop in the United Kingdom's traditional surplus on invisibles, apart from a temporary rise in 1991 related largely to the Gulf war contributions of other countries. In the first half of 1992, the invisibles surplus averaged only £1 billion at an annual rate, about a fourth of the figure in 1991. Part of this drop reflected a large downward revision to the stock of net foreign assets following the triennial census of overseas assets.[12] Although a small positive stock of assets has been estimated for 1991, this will soon be offset by the accumulation of current-account deficits, though its sterling value will be boosted by depreciation.

Short-term economic prospects

The economic outlook over the coming two years sketched out below is based on the following technical assumptions:

- Monetary conditions will be eased modestly in the coming two years to assist recovery in the domestic economy, but will remain sufficiently tight to keep inflation low (Chapter II discusses macroeconomic policies);
- The government's spending limits announced for the coming two fiscal years will be adhered to;
- Nominal exchange rates remain unchanged from their levels of 3rd November, when sterling's bilateral rate against the Deutschemark was DM 2.41;
- Oil prices average $18 a barrel in the second half of 1992 and remain unchanged in real terms thereafter;
- Growth of U.K. export markets for manufactures is in a range of 4½ to 6 per cent in the coming two years.

Forces shaping the recovery

The main forces shaping the expected economic recovery are the recent and small projected drop in nominal interest rates and improved international competitiveness stemming from depreciation. Households have saved heavily over the past two years and substantial potential deferred demand exists. Easier monetary conditions should help to bring to an end falling nominal house prices, thereby alleviating the risks of debt deflation. Lower interest rates will also reduce debt service of liquidity-constrained households and business.

The gentle recovery in private consumption is projected to continue in late 1992. A more broadly-based recovery might then get underway in 1993, as nominal house prices and household wealth stabilise, confidence recovers, the savings rate falls, the drop in consumer durables bottoms out and the measures announced in the Autumn Statement take effect. Destocking is also likely to end soon. Fixed investment is expected to lag the upturn, but may recover roughly in line with previous recoveries, given improved profitability in the tradeable goods sector and reduced debt levels. Given the depressed state of the property market, housing and non-residential construction are likely to remain weak over the coming few years. Once the recovery in the world economy picks up momentum, improved U.K. cost competitiveness should boost export performance.

Against this background, real output could start to grow modestly in the first half of 1993. Public expenditures, especially public investment, are projected to support growth, as will investment by the newly privatised water firms. The *real* foreign balance, which deteriorated markedly over the past year and a half, could make a small contribution to growth. All in all, real GDP growth is projected to pick up gradually through 1993-94, perhaps reaching its potential rate of 2½ per cent in the course of 1994 (Table 6).

Against this background, unemployment is projected to continue to increase to almost 11 per cent of the labour force in 1993 – and to fall slowly thereafter. Although increases in the Retail Price Index could fall further in the coming months, higher foreign trade prices will inevitably have adverse effects on the domestic price level raising it above what it would otherwise have been. By the first half of 1993, the private consumption and GDP deflators could be recording peak rates of increase in the 5 to 5½ per cent range – but retail price inflation somewhat lower, due to declining interest rates. The OECD assumes that given

Table 6. **Short-term projections**

Percentage changes from previous period

	1992	1993	1994
Volume (1985 prices)			
Private consumption	–0.3	0.7	1.6
Government consumption	0.8	1.4	1.5
Gross fixed investment	–3.0	–0.6	2.0
Public[1]	2.9	3.4	4.0
Private	–4.3	–1.5	1.5
Final domestic demand	–0.6	0.6	1.7
Stockbuilding[2]	0.6	0.2	0.3
Total domestic demand	0.0	0.8	2.0
Exports	3.2	5.8	6.9
Imports	6.2	4.0	5.4
Foreign balance[2]	–1.1	0.4	0.3
GDP	–1.0	1.3	2.4
Memorandum items:			
GDP deflator	5.4	5.0	4.1
GDP at current prices	4.3	6.3	6.6
Real personal disposable income	0.0	0.4	0.4
Personal saving ratio[3]	10.1	9.8	8.7
Consumer prices[4]	5.4	5.2	4.2
Employment	–2.4	–1.1	0.4
Unemployment rate[3,5]	10.1	10.8	10.5
Manufacturing production	–0.9	1.0	2.3
Current balance			
£ billion	–12.7	–15.6	–19.4
As per cent of GDP	–2.1	–2.4	–2.9

1. General government.
2. Changes as per cent of GDP in the previous period.
3. Data in levels.
4. Private consumption deflator.
5. Unadjusted claimant count.

Source: OECD estimates.

contract lags, restraint on public sector pay, and substantial slack in the economy, the bulge in price increases will have only limited effects on private sector pay. As a result, inflation could stabilise during the second half of 1993, with general indicators of inflation dropping back to around 4 per cent by 1994. The Government is forecasting that underlying inflation (the RPI excluding mortgage payments) will be below 4 per cent by the fourth quarter of 1993.

Although the trade balance is projected to improve in volume terms over the coming few years, the "J"-curve effects (whereby the price effects pass through

more quickly than the volume effects) are expected to lead to a wider trade deficit in the short term. This, plus a run-down in the stock of net foreign assets, could result in current account deficits of some £16 to 19 billion, *i.e.* 2½ to 3 per cent of GDP in 1993-94.

Two years after the floating of sterling, the U.K. economy could be experiencing somewhat higher levels of output, though at the cost of a higher price level, but with underlying inflation receding. Unemployment may remain quite high, albeit declining and the current account deficit could still be relatively large as a proportion of GDP. The risks appear to be evenly balanced. Lower output and inflation cannot be excluded as it is uncertain when households' balance-sheet adjustment will come to an end. However, should a recovery get underway, confidence could recover quickly, leading to stronger consumption and investment. Should a more aggressive approach to reducing interest rates be taken and/or current efforts to restrain government expenditure be less successful than planned, higher inflation would likely result, as sterling weakened and a domestic price and wage spiral built up. Output would be stronger for at most a brief period.

II. Macroeconomic policy

From October 1990 until sterling's suspension from the ERM in September 1992, ERM membership was the key means by which the government pursued its anti-inflation objective. Monetary policy was assigned to maintaining sterling within its ERM bands and thereby controlling inflation and expectations of inflation. Fiscal policy could respond within limits to demand conditions, but the budget could not be pushed too far out of balance without distorting the balance between tradeable and non-tradeable goods production or risking an unsustainable rate of debt accumulation or both. With the renewed floating of sterling, the authorities have regained a degree of short-term monetary policy independence. It must now re-establish the credibility of counter-inflation policy and has set out a new monetary strategy to achieve this. The commitment to maintain a sound medium-term fiscal position has been reiterated. Measures were taken in the Autumn Statement to increase confidence and foster economic recovery. This chapter reviews macroeconomic policy developments over the past two years and discusses elements of the policy approach for the future.

Monetary policy

The medium-term goal of monetary policy has long been to reduce inflation to low rates. The United Kingdom originally joined the ERM to increase the credibility of this commitment.[13] Initially, the stance of monetary policy needed to keep sterling in the ERM was consistent with what would have been appropriate on purely domestic grounds. With the protracted and deep recession in the United Kingdom and tight monetary conditions still called for in Germany, tensions between internal and exchange-rate objectives emerged and (together with turmoil in international financial markets) culminated in sterling's suspension from the ERM.

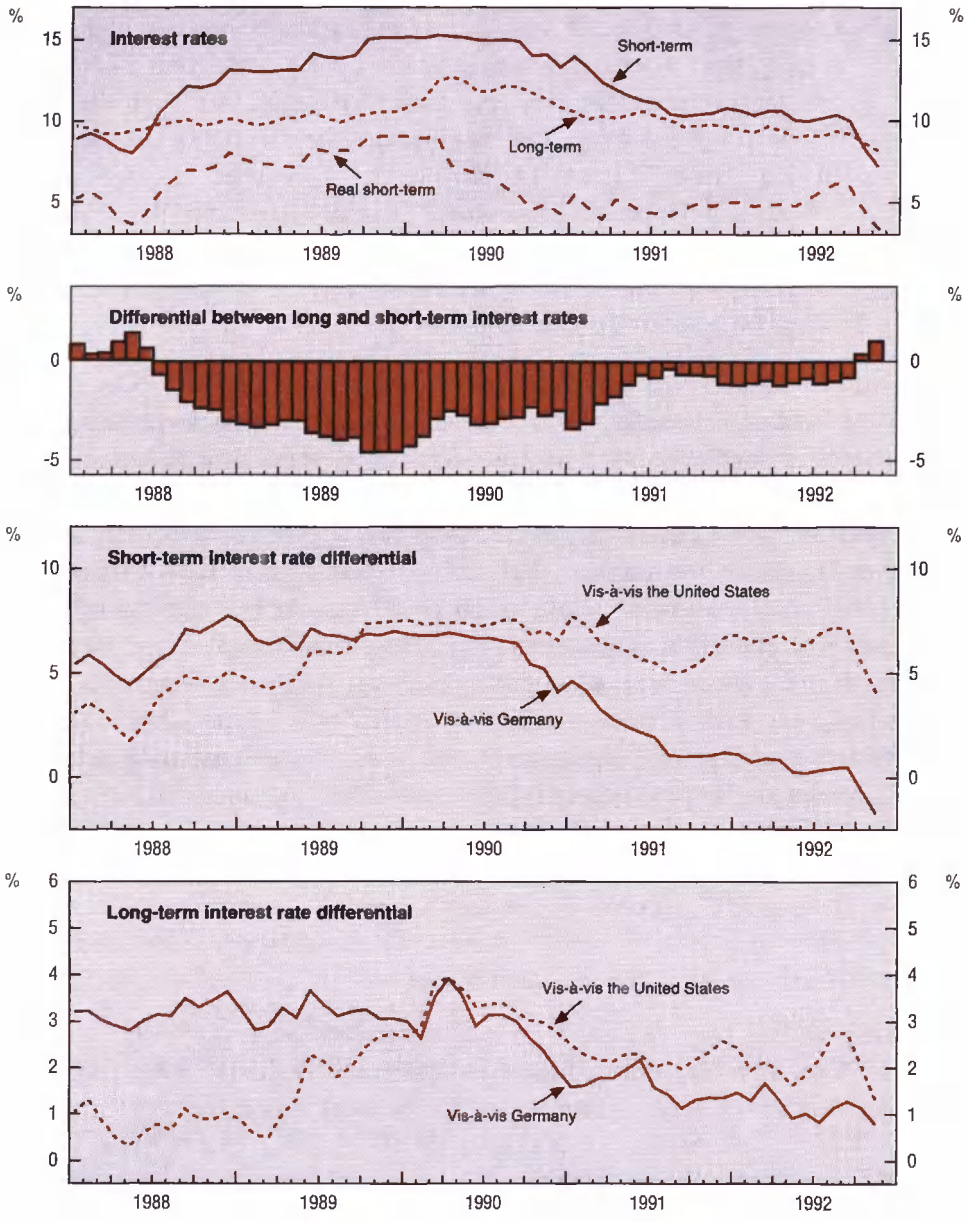
Monetary conditions

When sterling entered the ERM, monetary policy had been strongly disinflationary for more than a year. Short-term interest rates were very high (Diagram 13) and the exchange rate had appreciated markedly. Although the entry rate was still below the average real rate against the Deutschemark over the previous ten-year period (Diagram 14), sterling had appreciated by 7 per cent on an effective basis and 5½ per cent against the Deutschemark since the beginning of 1990. In choosing a central entry rate of DM 2.95, with ±6 per cent bands, the authorities were taking a hard currency option to bringing inflation down, while putting pressure on tradeable goods industries in the short-run.

Following a one-point cut to 14 per cent at the time of ERM entry,[14] base rates were held until February 1991. As evidence mounted of deepening recession, monetary conditions were progressively eased, starting in February 1991. Base rates were cut in seven half-percentage-point steps to 10.5 per cent in September 1991. All except the last of these cuts appear to have been largely anticipated in market interest rates. The successive cuts considerably flattened the yield curve, with short rates falling to around 70 basis points above long rates. The spread between U.K. and German three-month interest rates also narrowed sharply, from 6½ per cent prior to ERM entry to 1½ per cent in September 1991; meanwhile, long-term differentials dropped from 2.6 to 1.1 per cent. Although the effective exchange rate depreciated at this time, this was mainly a reflection of dollar strength. Sterling generally remained within its implicit narrow ERM bands, albeit below its central rate. Growth in the monetary aggregates also slowed during this period, with annual growth in M0 and M4, respectively, down to 2.5 per cent and 6.7 per cent. This reflected, *inter alia,* significant restructuring of households' and business balance sheets, rather than supply-side constraints on the banking system's ability to lend (Diagram 15).

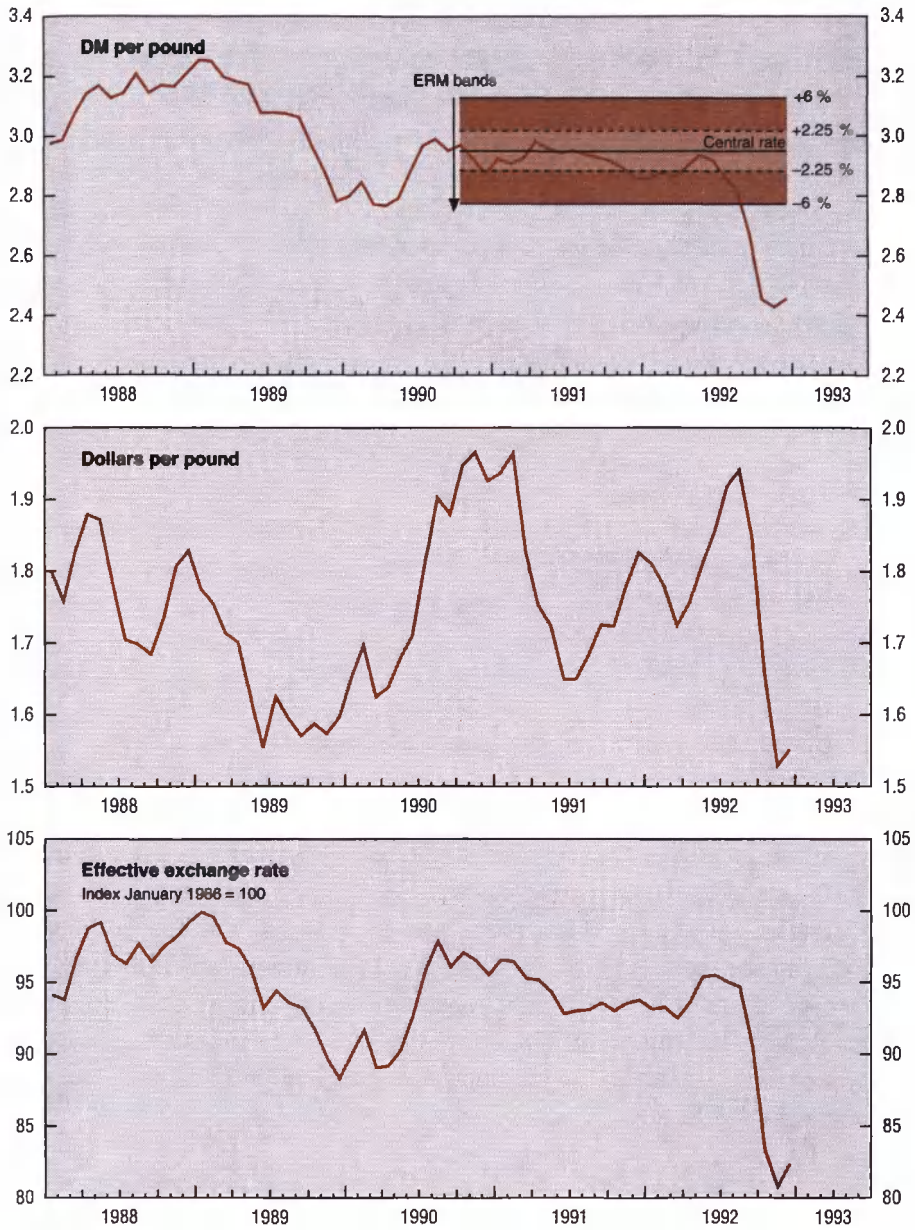
Base lending rates remained unchanged between September 1991 and the April 1992 election. But, during this period monetary conditions in Germany and other ERM countries were tightened. The Bundesbank raised short-term rates by 0.5 per cent in December, an action followed to some extent by all ERM countries except the United Kingdom. The resulting narrowing of interest rate differentials combined with election uncertainty pushed sterling to below its implicit narrow bands, where it remained until after the election.

Diagram 13. **INTEREST RATES**



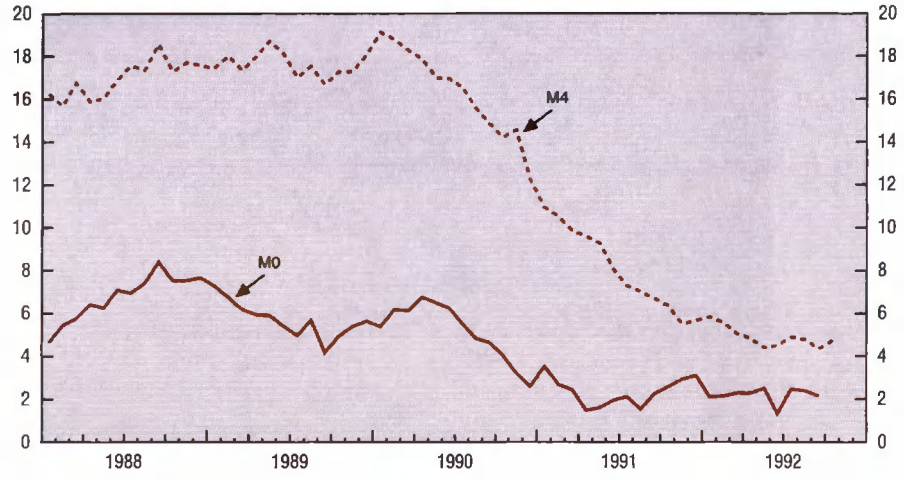
Source: Central Statistical Office, *Economic Trends,* and OECD, *Financial Statistics.*

Diagram 14. **EXCHANGE RATES**



Source: OECD.

Diagram 15. **MONETARY AGGREGATES**
Annual growth rates



Source: Central Statistical Office, *Financial Statistics.*

Sterling subsequently recovered towards its central rate following the re-election of the government and the authorities cut base rates in May to 10 per cent, lowering short-term differentials *vis-à-vis* German Lombard rates to only 25 basis points. Market speculation grew that with renewed sterling strength and U.K. headline inflation soon expected to be below Germany's, U.K. short rates could drop to below those of Germany. In the event, sterling fell in June, in particular after the Danish referendum, and by early July it dropped again to below its implicit narrow band. In mid-July, the Bundesbank further tightened monetary conditions. With the U.K. economy facing the longest recession in post-war history, the authorities did not raise interest rates and sterling dropped to the lower part of its band and to the bottom of the EMS grid – where it remained until it was forced to float in September.

The French referendum in September on the Maastricht Treaty ultimately proved to be the flashpoint for the ERM crisis. The referendum focused market concerns on the sustainability of existing ERM parities, particularly on those outside the "low-inflation group". The depth of the U.K. recession, the resulting

perception that higher interest rates would be inappropriate for domestic reasons, and the continuing current account deficit weighed on market sentiment. Pressure on sterling became intense following the devaluation of the lira and press speculation that some monetary authorities believed that a further ERM realignment would be desirable. Until sterling's last day in the ERM, this pressure was countered by exchange market intervention, backed up by large foreign borrowing.

When it became clear that intervention alone would not change market sentiment, base rates were raised by 200 basis points on the morning of 16 September to 12 per cent. This proved insufficient to staunch the flow out of sterling. A further increase to 15 per cent was announced in the afternoon, but sterling remained at its ERM floor. These interest rate increases, although unprecedented in the United Kingdom, were insufficient to compensate for the immediate risks of holding sterling. The suspension of sterling from the ERM was announced that evening, and base rates were restored to 10 per cent the next day.

Sterling immediately depreciated by 4.0 per cent to DM 2.67. Base rates were cut to 9 per cent the following week, with forward rates indicating that a further cut in interest rates was expected by the end of the year. Sterling continued to fall during the rest of September, finishing at DM 2.51 and US $1.78, representing a depreciation of 9.7 per cent *vis-à-vis* the Deutschemark and 3.4 per cent against the dollar from the time of its floating; sterling's bilateral rate against the Deutschemark was some 15 per cent below its ERM central rate of DM 2.95. Base rates were lowered to 8 per cent on 16 October and to 7 per cent on 12 November. Sterling fell to a range of DM 2.40 to 2.44 in November.

Several observations can be made about sterling's experience in the ERM. First, relative cyclical positions matter to the extent that they limit the scope for action to defend the exchange rate parity without unduly compromising domestic objectives. At the time of ERM entry, the U.K. economy was entering recession following a sustained period of high nominal income growth. Conversely, Germany was entering a period of strong capacity utilisation boosted by the demand effects of unification. As a result, sterling was subject to strong downward pressure and the Deutschemark to upward pressure – a situation which was aggravated by very large German budget deficits. Second, the experience of sterling and a number of other currencies which have been formally or informally linked to the ERM suggests that raising interest rates may not help to support a

currency if a point is reached where markets believe that higher interest rates are not sustainable given the position of the domestic economy.

Finally, as learned earlier by other participants, ERM membership is not an easy road to anti-inflation credibility. U.K. wage and price behaviour in this recession does not appear to have been significantly different from that in the 1979-81 recession (cf. Chapter I). This is consistent with empirical studies of other ERM countries, which have generally failed to detect a significant ERM effect on wage and price behaviour (see Egebo, T., and A. S. Englander, 1992; also Anderton *et al.,* 1991). ERM membership does, however, serve as a discipline on policy setting and, in this way, contributed to a sharp reduction in U.K. inflation.

Policy requirements

Since sterling's float, the authorities have reiterated their commitment to achieving a sustained reduction in inflation, to the levels in the low-inflation European countries. In his letter to the Chairman of the Treasury and Civil Service Select Committee (8 October, 1992), the Chancellor of the Exchequer proposed an explicit goal for underlying inflation (RPI excluding mortgage rates) to be in the range of between 1 and 4 per cent for the remainder of the current Parliament, and in the lower part of the range by the end of Parliament. The long-term aim is an inflation rate of 2 per cent or less. Monetary conditions will be assessed with reference to a wide range of indicators including narrow money, broad money, asset prices (particularly house prices), indicators of inflation expectations, and the exchange rate.[15] The authorities have retained a target range for narrow money (M0) of 0 to 4 per cent for 1992/93, and the Chancellor announced in his Autumn Statement a new monitoring range for broad money (M4), indicating values beyond which there would be cause for concern, of 4 to 8 per cent for the second half of 1992/93. The Chancellor has stated that the government intends to rejoin the ERM when conditions are appropriate, but the resumption of the U.K. membership of the ERM is thought unlikely to be immediate.[16]

The proposed inflation targets represent an important step towards building the authorities' anti-inflation credibility in the absence of the ERM discipline. These have been supplemented by measures to make monetary policy more transparent. The authorities will publish a monthly report following the regular

meeting between the Chancellor and the Governor of the Bank of England to provide the background against which monetary policy decisions are taken. The Bank of England will publish a quarterly assessment of progress towards the government's inflation objectives and the prospects of meeting them. The government also announced that a panel of independent forecasters will be established, and will publish regular forecasts. The inflation targets and greater monetary policy transparency should serve to anchor inflation expectations if a record of targets being attained is established.

The authorities' proposals do not yet address the monetary policy conflict between short- and long-term incentives under present institutional arrangements. The stance of monetary policy in the United Kingdom is determined by the government and implemented by the Bank of England. While governments intend to achieve low inflation in the medium term, there is political pressure to support economic growth in the short term. If governments respond only to the latter, low inflation will not be achieved. This problem,[17] known as time inconsistency in monetary theory, could be addressed by giving the Central Bank authority to pursue a medium-term inflation mandate and making it accountable for outcomes (as has been the case for decades in Germany and, more recently, in New Zealand and Canada).

Fiscal policy

The policy framework

Against the background of the medium-term financial strategy (MTFS), the stronger underlying fiscal position in the early 1990s compared with the 1980s reduced the need on structural grounds to override the operation of the automatic stabilisers. The authorities have allowed the automatic stabilisers to operate fully since the beginning of the downturn, in contrast to the policy during the 1979-81 recession.[18]

Since the late 1980s the main target has been to balance the budget (inclusive of privatisation proceeds) over the cycle, implying a reduction in the ratio of government debt to GDP in the medium term. One interpretation of "balance over the cycle" is that budget balances sum to zero over the cycle. Another is that budget balance is achieved when output is at trend. On the latter interpreta-

tion, there would be a net addition to debt over this cycle, unless there is an unusually long period of above trend growth to compensate for the current recession.

The 1991/92 Budget outturn

The 1991 Budget forecast a FY 1991/92 Public Sector Borrowing Requirement (PSBR) of £7.9 billion[19] (1¼ cent of GDP) (Table 7). This estimate was revised upwards in the 1991 Autumn Statement with general government expenditure projected to be £1.3 billion higher than in the budget. The main factor underlying this revision was increased payments to the unemployed due to the greater-than-expected severity of the recession. In addition, local authority self-financed expenditure was substantially increased. In the event, the outcome for FY 1991/92 was a PSBR of £13.7 billion, substantially above the deficit originally projected in the budget, despite privatisation proceeds being £2.4 billion higher than forecast. Most of the deterioration unforeseen at the time of the budget was in final consumption expenditure, unemployment insurance payments and income taxes. The rise in transfers to the unemployed and the loss of income tax revenue were related to the recession being deeper and more prolonged than expected, while the increase in consumption expenditure was in part due to local authority self-financed expenditure being even higher than in the revised projection.

The 1992/93 Budget

The 1992 Budget forecast a FY 1992/93 PSBR of £28.1 billion (4½ per cent of GDP), well above the £13.7 billion outcome in 1991/92. Excluding privatisation proceeds the deficit was projected to be £36.1 billion (compared with £21.7 billion in 1991/92). The 1992 Budget reduced the income tax rate on the first £2 000 of taxable income to 20 per cent, halved the car tax and gave transitional relief for business rates. These and other measures were estimated to reduce revenue relative to an indexed base by £1.5 billion in 1992/93 and £2.6 billion in 1993/94. The expenditure side of the budget, which was announced in the 1991 Autumn Statement, increased general government expenditure (excluding privatisation proceeds) from previous plans by £6.4 billion in 1992/93 and £10.2 billion in 1993/94. The main increases in expenditure plans for 1992/93 were for social security (£4.2 billion), health (£1.7 billion), support

Table 7. **Budgetary developments**

£ billion

	1990/91		1991/92		1992/93
	Budget forecast	Outturn	Budget forecast	Outturn	Budget forecast
Receipts	224.3	221.5	230.6	226.7	237.4
of which:					
Taxes on income and oil royalties	75.4	77.6	79.1	76.3	76.7
Taxes on expenditure	77.3	75.0	87.0	85.5	93.0
Social security contributions	35.9	35.5	37.2	37.2	39.1
Gross trading surplus	4.7	4.0	1.9	2.9	3.7
Community charge	11.2	11.2	7.2	7.1	8.3
Expenditure	219.4	225.7	238.4	246.3	264.3
of which:					
Final consumption	109.0	112.6	119.9	124.6	130.9
Subsidies	5.5	6.2	6.3	6.3	6.1
Current grants to personal sector	64.2	63.8	70.9	74.7	81.0
Debt interest	18.6	18.8	17.5	17.3	18.4
Gross domestic fixed capital formation	14.7	16.6	16.1	16.6	18.2
Unallocated reserve	3.0	–	3.5	–	4.0
Financial deficit	–2.6	4.2	11.3	19.6	30.9
Financial transactions	–4.2	–4.7	–3.4	–5.9	–2.8
of which:					
Transactions in company securities[1]	–5.0	–5.7	–5.5	–8.4	–8.0
Public sector borrowing requirement	–6.9	–0.5	7.9	13.7	28.1
of which:					
Central government		–2.5		12.9	
Local authorities		2.0		1.1	
Public corporations		0.0		–0.2	

1. Including privatisation proceeds.

Source: Central Statistical Office, *Financial Statistics* and *Financial Statement and Budget Report 1992/93.*

for the state-owned transport industries (£1.4 billion) and additional funding (£1.4 billion) for current spending by local authorities; the effect of these increases on the "planning total" was attenuated by a £3 billion run-down in the (contingency planning) reserve.

The Chancellor also announced in the Budget Speech on 10 March 1992 that from December 1993, the government would make one Budget Statement to Parliament a year, covering tax plans for the coming tax year and spending for the next three years. This will replace the March Budget and Autumn Statement.

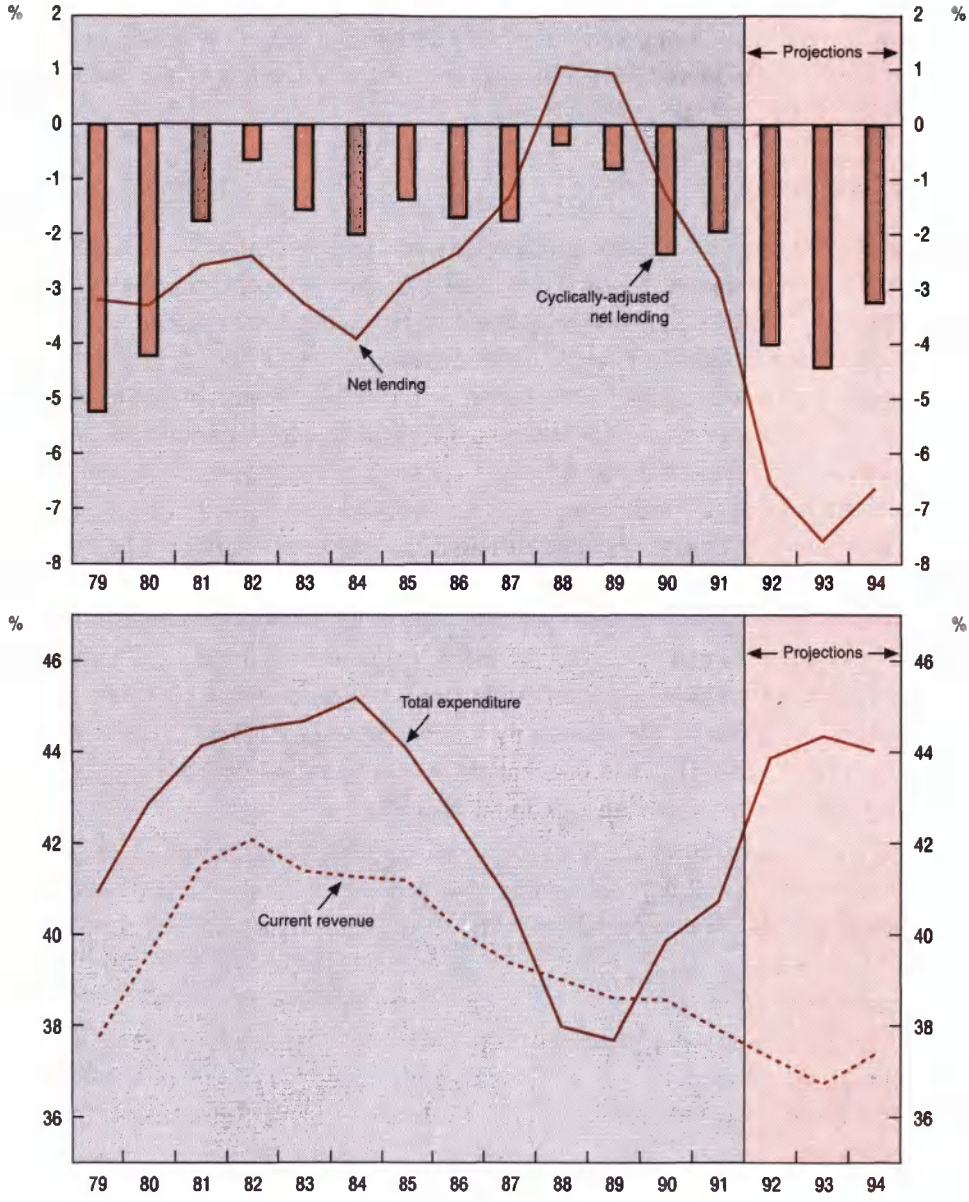
The stance of fiscal policy

Although such calculations are open to great uncertainty, the OECD estimates that roughly 70 per cent of the deterioration in the budget balance since 1990 has been due to cyclical factors (Diagram 16).[20] It is estimated that the cyclically adjusted budget deficit increased by around 1½ per cent of GDP between 1990 and 1992, with all of the increase occurring in 1992. The deterioration in the structural budget deficit appears to be attributable to both increased expenditures and reduced revenues. The expenditure increases mainly reflect the measures announced in the 1991 Autumn Statement. With respect to revenues, the main factor would appear to be the larger than usual fall in corporate tax revenues relative to economic activity. While there is considerable uncertainty about the causes of the decline in corporate tax receipts, a number of measures in the 1991 Budget undoubtedly contributed. The corporate tax rate was cut from 35 per cent to 33 per cent and the rate for 1990/91 lowered retrospectively to 34 per cent. In addition, the loss relief regime for companies was extended in 1991/92 to allow them to carry back trading losses against tax liability on any income from the previous three years.

Public expenditure control framework

To improve its control over public expenditure, the government announced a new medium-term control framework in July 1992. The essence of the framework is that the global public expenditure limit set by the Cabinet is to be considered binding. Bilateral discussions between the Treasury and spending departments are only to concern the allocation of these resources rather than the total. Any growth in resources for one activity greater than the increase in the global limit must be financed by a less than proportionate rise elsewhere. In the event that departments cannot agree on the allocation of resources, the Cabinet will decide. The public expenditure limit for FY 1993/94 was maintained at £244.5 billion, the same planning total announced for that year in the 1991 Autumn Statement. Thereafter, the limit will concern non-cyclical and non-interest expenditure; the

Diagram 16. **GENERAL GOVERNMENT FINANCES**
As per cent of GDP



Source: OECD, *National Accounts*, and estimates.

categories of expenditure considered to be cyclical are assistance for the unemployed (*i.e.* unemployment benefit and income support to persons of working age) and debt interest payments. The cash limits set for growth in the non-cyclical expenditure totals (NCT) in 1994/95 and 1995/96 were designed to ensure average real annual growth in the NCT of 1½ per cent over the three years 1993/94 through 1995/96.

Fiscal prospects

The 1992 Autumn Statement confirmed the 1993/94 cash limit at £244.5 billion and set cash increases of 4 per cent and 3¾ per cent, respectively, for 1994/95 and 1995/96. Emphasis was given to protecting capital spending, particularly on infrastructure projects. Current expenditure is to be tightly controlled, principally by restricting pay settlements in the public sector over the coming year to 1½ per cent. A supplementary package was introduced in the Autumn Statement, containing targeted, time-limited measures designed to boost confidence and aid recovery. Additional grants were made available to allow housing associations to buy up empty properties and thus promote activity in the housing market, first-year capital allowances for investment in plant and machinery were increased for a year from 25 to 40 per cent and the constraint on local authorities' spending of their capital receipts was lifted temporarily. Car tax was abolished and an extra £700 million of export credit cover was made available to exporters. The direct cost of the supplementary measures is about £1 billion in 1992/93 and the same in 1993/94. The Autumn Statement also included measures to increase the scope for private financing of capital projects.

On the basis of these spending plans and assuming that there are no further tax changes, the OECD projects that the general government budget deficit (excluding privatisation proceeds) could rise to around 7½ per cent of GDP in calendar 1993 before falling back to 6½ per cent in 1994, the same level as in 1992. The increase in the budget deficit projected in 1993 reflects both a further cyclical deterioration – output growth is projected to remain below trend – and an increase in the structural budget deficit. The reduction in the budget deficit projected for 1994 is structural, with cyclical factors having no effect.

The run of budget deficits since 1990 has resulted in a reversal of the trend fall during the late 1980s in government debt as a percentage of GDP. Net government debt is estimated to have increased from 29 per cent of GDP in 1990

Diagram 17. **NET GENERAL GOVERNMENT DEBT**
As per cent of GDP

Source: OECD, *National Accounts*, and estimates.

to 36 per cent of GDP in 1992 (Diagram 17). On present policies, net government debt is projected to rise to 45 per cent of GDP in 1994. OECD estimates suggest that a further discretionary tightening in fiscal policy is likely to be required to stabilise the debt to GDP ratio beyond the projection period. Assuming trend output growth of 2.4 per cent and real interest rates of 4 per cent, a structural primary balance of around 1½ per cent of GDP greater than projected would be required to stabilise the debt-to-GDP ratio at its 1994 level.[21] The Chancellor has indicated that if, as the economy recovers, it is clear that there is an underlying deficit, he will take measures to deal with the problem.

III. Progress in structural reform

The wide-ranging structural reforms carried out over the 1980s focused on exposing the sheltered parts of the economy to greater market forces and on improving the functioning of markets. Areas of reform targeted included education and training, labour markets, the tax and benefit systems, privatisation of nationalised industries, the core government sector, and utilities regulation. These reforms[22] undoubtedly contributed to the improved productivity growth performance during the 1980s. However, the capacity of the economy to maintain low inflation, create jobs and compete more effectively internationally needs further strengthening. Further efforts to improve the supply-side flexibility of the economy are needed to ensure a good medium-term output and employment record. Structural reform has continued over the past few years, especially in the areas of education and training, labour markets, taxation, public sector management, privatisation and utilities regulation.[23] This chapter discusses recent developments in the context of past reforms.

Education and training

By the late 1970s it was becoming increasingly apparent that Britain's education and training system was ill adapted to an economic environment characterised by a secular decline in demand for low-skilled labour. While the system continued to produce a small, well-educated *élite,* a large proportion of the population was not being educated to the standards typical in other industrial countries. Britain was the sole major industrial country in which a majority of students left full-time education at 16, the minimum school-leaving age. Few such school leavers continued with any form of training; this problem became even more serious following the contraction of the apprenticeship system in the 1979-81 recession. Moreover, educational attainment levels during compulsory

education were low (see Finegold and Soskice, 1988). These problems were compounded by the small amount of employee training undertaken by employers.

The government sought to address these problems by a series of reforms which increased its control over the system and expanded vocational education. The Education Reform Act 1988 introduced a National Curriculum, extensive compulsory testing, open enrolment (giving parents more choice of schools) and allowed schools to opt out of local-authority control and into a system of funding from the Funding Agency for Schools that allows greater administrative independence. A technical and vocational emphasis was reinforced at the secondary school level by the introduction of the Technical and Vocational Education Initiative (TVEI). Schools were encouraged to offer more vocational qualifications to both the 14 to 16 and the 16 to 19 age groups.

At the post-secondary level, the major initiative was the Youth Training Scheme (YTS), which began in 1983. This scheme was aimed at giving some vocational training to 16 and 17 year olds leaving school but unable to find work with a local employer. With the extension of YTS work experience to two years for 16 year olds in 1986, greater emphasis was placed on the scheme's role as a vehicle for skills rather than foundation training. The transfer of the administration of most major training initiatives (and some employment initiatives) to a new network of organisations, called Training and Enterprise Councils (TECs), was announced in 1988. Local employer involvement in TECs was intended to make training schemes more responsive to the needs of the local labour market.

Reform during the past two years has centred on refining the education and training system already in place rather than fundamentally changing it. The YTS was replaced in 1990/91 by Youth Training (YT).[24] Vocational qualifications have been rationalised and classified into the comprehensive system of National Vocational Qualifications (NVQs) and General NVQs.[25] In order to encourage individuals to invest in their own training and to promote the reformed vocational qualifications, full income tax deductibility on expenditure incurred for training leading to NVQs was introduced in April 1992. The aim is to promote three parallel qualification pathways: academic, NVQs and General NVQs. An extension of the funding reforms for higher education contained in the Education Reform Act 1988 has also been announced.[26] Polytechnics have become universities in the current academic year and, from April 1993, will be funded along with

traditional universities by the Higher Education Funding Councils.[27] Funding for research is increasingly to be allocated on the basis of research rankings, rewarding excellence, and for teaching on the basis of student numbers.[28]

Although it is too early to assess the results of the reforms, the appropriateness of reform designed to address key weaknesses can be discussed. In this regard, the introduction of a National Curriculum could help to raise educational attainment by ensuring that students receive at least minimum amounts of instruction in core subjects and that teachers have guidelines on proficiency levels for different age groups. The introduction of a wide range of NVQs and of TVEI, and the replacement of "O levels" by the less narrowly academic General School Certificate of Education (GSCE) should help to break down the long-standing bias in the education system against those not going on to higher education.

YTS and its successor, YT, have increased the amount of vocational instruction being received by those not going on to further education, and econometric evidence (Main and Shelly, 1988) suggests that YTS had a positive effect on subsequent employability. Data from December 1991 show that around 40 per cent of YT trainees completing the programme failed to gain any recognised vocational qualification.[29] One reason for this performance is trainees' lack of educational preparation.[30] This problem, and the United Kingdom's comparatively high (though declining) drop-out rate at 16, is likely to continue until reforms in education and in the labour market successfully manage to motivate all children.[31] Such motivation will require clear links to be established between achievement at school and the diverse jobs which children aspire to.[32]

Labour market reform

The position of trade unions in the labour market was increasingly questioned in the late 1970s. Unions had shown growing militancy during the previous two decades and were widely considered to have contributed to the United Kingdom's deteriorating economic performance *vis-à-vis* other industrial countries. As part of its programme to arrest this trend, the government embarked on a series of reforms to increase trade union democracy and regulate the exercise of union power. Closed shops were banned, unions' legal immunities when undertaking strike action were curtailed and secondary picketing (whereby unions

extend industrial action to employers or sites not directly involved in the dispute) was prohibited. Stricter rules were introduced for balloting members before industrial action could legally be called. At the same time, reforms were made to improve work incentives. Marginal income tax rates were cut, labour taxes were reduced and welfare benefits were overhauled to reduce the incidence of unemployment traps (Table 8).[33] Individuals' ability to find a job was also boosted by the introduction of a wide range of measures aimed at keeping the unemployed in touch with the labour market.[34] At the same time, there were reforms reducing the coverage of minimum wages and increasing the transferability of employer pension schemes. More recently, the abolition of Wages Councils has been announced. OECD and other research suggests that the labour market reforms of the 1980s may have partially reversed earlier rises in the non-accelerating inflation rate of unemployment (NAIRU) and contributed to a better trade-off between unemployment and inflation when the labour market tightened in the late 1980s.[35]

Trade union reform has continued during the past two years, with measures in the 1990 Employment Act which restrict the scope for unofficial industrial action and make it unlawful to induce industrial action by workers of an employer not party to the dispute (except in the case of lawful picketing). The Act also gives job applicants a right of legal redress if their services are refused

Table 8. **Replacement ratios for the working population**[1]

Numbers with replacement ratios at or above each level[2,3]

	1985	1989/90	1990/91	1991/92
	Thousand			
100 per cent and above	60	15	15	5
90 per cent and above	210	35	30	30
80 per cent and above	730	130	130	135
70 per cent and above	1 870	435	430	425

1. Calculated for benefit units where the head of family works 30 hours or more a week. Excludes the self-employed and pensioners. Estimates are cumulative, and rounded to nearest 5 000.
2. Estimates assume full receipt of benefit entitlement both in and out of work and are based on net income from all sources after housing costs. Figures for 1990/91 and 1991/92 incorporate the effects of community charge benefit and the independent taxation of husbands and wives.
3. Estimates for 1985 make an arbitrary allowance for travel-to-work cost. However, the use of a single figure to represent such costs is inadequate, and survey evidence suggests that up to one in three employees may have no travel-to-work costs. For this reason, estimates for 1989/90 onwards make no allowance for travel-to-work costs.

Source: "Social security, The Government's expenditure plans, 1992-93 to 1994-95", Department of Social Security, 1992.

on grounds of non-membership of a union, thereby banning ''pre-entry'' closed shops. This right is balanced by an equivalent right for workers refused a job on grounds of union membership. Both rights conform to the European Community Charter, which declares an unqualified freedom both to join and not to join a union. Tax relief for profit-related pay has been extended (to the lower of 20 per cent of total pay or £4 000) and occupational pension schemes are now required to index the whole of accrued pension rights for early leavers (by the lower of price inflation or 5 per cent per annum until pension age). Labour market flexibility has also been promoted by the extension of Restart interviews to assist unemployed people with job search.[36] Benefit-related unemployment traps have been further reduced since April 1992 by extending Family Credit to include heads of household working up to 16 hours per week and by introducing a new, lower 20 per cent income tax band applying to the first £2 000 of taxable income.

Recent labour market reforms should further contribute to lowering the NAIRU. The contribution of the profit-related pay and pension transferability reforms to economic efficiency is, however, less clear. While more profit-related pay may increase wage flexibility, it is not clear that tax expenditures to achieve this result necessarily enhance economic efficiency.[37] Indeed, in theory, welfare could be reduced by discouraging the efficient diversification of business income risk by shifting it onto labour income. With respect to pension transferability, the bonding of an employee to his employer inherent in non-transferable pensions could be an efficient arrangement between an employer and employees. Such an employment relationship should increase the return to a firm on training expenditures and also may reduce monitoring costs by ensuring that reliable workers ''self-select'' into the firm.[38] On the other hand, ''jobs for life'' may reduce labour-market flexibility and reduce the capacity for change in an organisation. A balance needs to be struck which reflects labour-market conditions and institutions in the United Kingdom at this time. Moreover, employees who leave the firm before retirement may have inadequate financial resources and become a greater charge on the state during their retirement.

Tax reform

Substantial tax reform was undertaken in the 1980s to reduce tax-induced distortions in economic decision-making. The corporate tax rate was lowered

from 52 per cent in 1979 to 35 per cent by 1986 and depreciation rates were reduced to bring them more in line with economic depreciation. These reforms increased the marginal effective[39] corporate tax rates on most investments, but reduced the large unwarranted variations in rates between different types of real assets and financing sources. To reduce disincentives to work and to save, the basic and top rates of personal income tax were lowered from 33 and 83 per cent to 25 and 40 per cent respectively over the period 1979 to 1988. National Insurance Contributions (NICs) were revised in 1989 so as to eliminate the sharp steps in the rate structure which contributed to very high effective marginal tax rates for the low paid.

Reform over the past two years has continued to focus on reducing distortions. Employers' NICs were extended in April 1991 to cover employee benefits in the form of company cars and free fuel. The incentive to remunerate employees in kind was further reduced by the termination of VAT rebates on company cars bought for private use and the subjection to income tax of pay in the form of financial instruments (other than the company's own). The corporate tax rate was further reduced (in two steps) from 35 per cent in 1989/90 to 33 per cent in 1991/92. A new, lower 20 per cent income tax band on the first £2 000 of taxable income was introduced (see above). Although owner-occupied housing investment continues to receive tax-favoured treatment,[40] the extent of this preference was further eroded by restricting deductions to the basic income tax rate from 1991/92 and freezing the level of nominal deductions. The incentive to save was boosted in 1991 by the introduction of a tax-free savings account (TESSA). It is not clear, however, that this measure promotes economic efficiency because it may simply alter the form in which people choose to save rather than raise overall saving rates; this is especially so given that the amounts which can be invested in TESSAs are capped. Independent taxation for married women was introduced in 1990/91, but the system of personal allowances introduced at the same time ensures that households of two married people pay less tax than those of two single people.

Local government taxation has changed significantly during the past few years. Domestic rates were abolished in April 1990 and replaced with the Community Charge (''poll tax''), which was payable by every adult at a level determined by the local authority.[41] One of the main objectives of this reform was to make those who elect local political leaders face the cost implications of

spending decisions made by those political leaders. Under the rates system, many individuals, especially those residing in council housing, did not share the cost of local spending. In the event, the tax proved enormously unpopular and is being abolished. Headline community charge rates were reduced by £140 in 1991/92 through increased central government transfers to local government. At the same time, the standard rate of VAT was increased from 15 per cent to 17.5 per cent. The community charge will be replaced by a new council tax based on the capital value of residential property and the number of adult occupants, to take effect in 1993/94.[42] The increase in central government funding has been accompanied by greater government control over local government budgetary decisions. Central government has also increased its control over business taxes, by setting uniform rates in England and, separately, in Wales since 1990; Scottish rates are to be harmonised with English rates.

Public sector reform

Reforms during the 1980s also sought to raise public sector efficiency by defining objectives more clearly and assessing performance against these objectives. The recent introduction of the "Citizens Charter" is an example of the government's commitment to increasing public accountability of core public-sector activities. Compulsory competitive tendering of public-sector services (other than those provided by central government) has also been important, yielding net savings in the National Health Service (NHS) and local government of almost £250 million per year.

The NHS has recently been subject to the most wide-sweeping reforms since its creation. These aim at improving the efficiency, quality and cost-effectiveness of public health provision through the introduction of an internal market. Principal reforms have been:

- A split of the responsibilities for health care into purchaser and provider functions;[43]
- the creation of NHS trust status that gives some hospitals greater control over their own affairs through the ownership and control of assets and the freedom to negotiate terms and conditions of employment for their staff;

- the introduction of charging for the use of capital to encourage the efficient use of capital assets;
- giving a budget for certain services and greater autonomy on how to allocate funding to some general practices above a certain size;
- giving an indicative budget for the cost of prescriptions to other general practices.

Although it is too early to assess the NHS reforms, preliminary evidence suggests that there has been a considerable improvement in productivity in 1991/92 and reduced waiting times.[44] An independent survey earlier this year found that 48 per cent of patients thought that services had improved since their hospital had become a trust; only 7 per cent thought they had worsened.[45] Anecdotal evidence also suggests that capital charging is beginning to exert an influence on the efficiency with which managers use NHS assets.

The government continues to expand the scope of competitive tendering in the public sector. A range of local authority activities was added in 1988-89 to those which must be put out to compulsory tender.[46] The government proposes extending compulsory tendering to the professional and technical activities of local authorities. Research into the effects of the existing systems indicates that competition has produced average savings of 6 per cent in the annual cost of work subject to compulsory competitive tendering.[47] Government departments are also required to review their activities and contract out where this is commensurate with best value for money and sound business practice. The Treasury estimates that subjecting certain central government activities to competition has reduced the cost of these activities by 25 per cent on average and resulted in an estimated £62 million of cumulative annual savings.[48] Measures are also being taken to set public sector pay to reflect local conditions and individual performance better.

Privatisation

The government embarked on a far-reaching privatisation programme in 1979. The objectives of the programme were to increase economic efficiency in the commercial activities that were at the time in the public sector and to widen share ownership. There was widespread evidence of over-manning and ineffi-

ciency in nationalised industries, and these industries accounted for 11 per cent of GDP. The increase in the profitability of recently privatised industries compared with the average zero aggregate return achieved by nationalised industries that remained in the public sector over 1981-87 provides evidence of the significant efficiency gains achieved through privatisation.

Privatisation has continued over the past few years. The largest industry involved has been electricity supply (excluding Nuclear Electric and Scottish Nuclear, which remain in the state sector). The government also sold a second tranche of shares in British Telecom in 1991, amounting to a quarter of its equity. These sales bring total privatisation proceeds to date to around £50 billion. Privatisation of Northern Ireland electricity distribution, British Coal, British Rail and some smaller firms is planned. Plans to close a substantial proportion of coal mines were announced in October 1992, but the timing and magnitude of these closures is under review.

Over recent years, the government has been able to use its experience of regulating privatised industries in order to improve on the regulatory frameworks for both older and more recently privatised industries. Public regulation of utilities has also been strengthened by the Competition and Service (Utilities) Act 1992, which brings the powers of all utility regulators with regard to standards of service up to the level of the strongest. The Act includes provisions giving utility regulators powers to set and monitor standards for the utility companies, to facilitate greater competition in the provision of water and sewage services and to resolve disputes between customers and the utilities.

Areas warranting further attention

- Education and training reform remains a priority. Even though staying on rates have risen to an estimated 67 per cent, too many students still drop out of school at 16 and often gain no more than basic recognised vocational qualifications. The failure of many in this group to gain adequate post-school qualifications for work is partly a result of a poor record of educational attainment at school. The limitation of YT to two years, which is shorter than the time it took to gain many trade qualifications under the apprentice system, may be another factor;[49]

- With respect to labour market flexibility, unions continue to avoid some of the legislative restrictions introduced in the 1980s. The narrowing of the circumstances in which unions can retain legal immunity from prosecution for damages has been avoided by unofficial strikes (technically not authorised by the union). The government has announced legislation covering this issue;
- Although significant progress has been made in reducing benefit-related unemployment traps, they remain a powerful dissuasion to work for money. A reduction in benefit withdrawal rates from the current 100 per cent, especially for Income Support (the main benefit received by the unemployed) would help to alleviate these problems, especially in cases where individuals do not qualify for Family Credit. Labour market flexibility could be further improved by reducing barriers to mobility arising from the housing market;[50]
- As regards tax reform, an extension of VAT to categories presently zero-rated (food, household energy, etc.) would enhance efficiency by reducing distortions in consumer choice. The adverse income distribution effects of such measures could be offset by targeted income assistance to low income groups (the effects of extending VAT to household energy consumption are noted in Chapter IV);[51]
- Efficiency could be further improved by continuing to privatise public enterprises, extending competitive tendering and making greater recourse to market mechanisms such as wider uses of charges in the public sector (the scope for introducing energy and market-based environmental taxes is noted in Chapter IV). Recent modifications to the regulatory framework for privatised firms could also be strengthened to ensure that profits be achieved through efficiency gains and not from the exploitation of market power. Prudential supervision of the financial system in some areas, notably the management of private pension schemes, might usefully be reviewed.

IV. The environment and the economy

Introduction

Emissions of major pollutants into the air and water have fallen significantly in the United Kingdom over the past two decades. The policy that has produced these results has been, until recently, largely one of implementing EEC standards and guidelines.[52] Since 1988-89, however, environmental policy has shifted towards taking initiatives at the national level. The 1990 White Paper outlined the government's environmental strategy and made 350 commitments for further action.[53] The principle of Integrated Pollution Control was introduced on 1 April 1991, under Part I of the Environment Protection Act 1990, and the government has announced the creation of a new centralised Environment Agency. This shift towards active policies was a response to widespread concern over the longer-term risks of environmental damage,[54] as well as greater international sensitivity towards environmental protection (Nicolaisen *et al.,* 1991). The increased importance of environmental policies in the programme of the present government is also reflected in actions in the international sphere. The U.K. government is examining the European Commission's ideas for a limited carbon-energy tax to reduce the risk of global climate warming and is party to the Community's conditional commitment to reduce emissions to 1990 levels by the year 2000. It has recently signed the Rio (1992) conventions on global climate change and biodiversity. With policies to protect the environment growing in importance and becoming more costly, it is relevant to examine the consistency of environmental policies with other areas of policy, as well as the question whether environmental objectives are being met at least cost. Policies that relied more on economic incentives would offer better environmental outcomes for the resources expended.[55]

Environmental policy

The essence of the environmental problem is well captured by Joan Robinson's famous question: "Why is there litter in the public park, but no litter in my back garden?" The "source of the problem" is often the lack of well-defined property rights in collective assets and market failure in the face of external costs (Kay *et al.*, 1992). Open access to environmental resources implies that they may be regarded by economic agents as common property, and that the full costs of environmental damage are not taken into account in individual decisions. These costs increase over time as resources are degraded and become scarcer. In the face of such market failure, government action can improve environmental outcomes through public education, regulations, sanctions, and introducing economic incentives to protect the environment.

As elsewhere, environmental policy in the United Kingdom relies heavily on detailed quantitative regulations and standards, an approach often called "command and control". The Department of the Environment (DOE) has general responsibility, in consultation with other departments, for environmental protection. It spends about £350 million a year on monitoring, research and setting national standards, in conformity with international agreements, under the 1990 Environmental Protection Act.

Environmental standards and targets in the United Kingdom are not set solely at the national level. Minimum standards are set by the EC, and the role of the DOE is to apply these in a cost-efficient manner. This does not preclude the United Kingdom bettering standards, which the government has done for the elimination of chlorofluorocarbons (thought to cause depletion of the ozone layer in the atmosphere and also a greenhouse gas) and improvement of inland water quality. It has also adopted policies for specific local problems (such as soil acidity and urban pollution).

National and EC environmental standards are applied in the field on a case by case basis, within a framework known as Integrated Pollution Control (IPC). This approach aims to ensure that pollution is not transferred from one environmental medium to another by considering total releases to air, water and land. It requires, for some 5 000 major industrial processes, the use of "BATNEEC" (best available technique not entailing excessive costs) (Annex I) to prevent releases or minimise and render them harmless. The decentralised application of

regulatory control has led the government to announce the establishment of a single, centralised Environment Agency to avoid overlaps and conflicts.

The use of cost-benefit assessment is widespread in public expenditure decisions in the United Kingdom (perhaps most extensively used in the transport sector), and since July 1988 certain projects have become subject to Environmental Impact Assessment under the relevant EEC Directive (Barde *et al.*, 1991). The Directive does not, however, require monetary evaluations of damage or benefits, and it is only in very recent years that such monetary assessments have begun to be part of the cost-benefit analysis. Greater use of such techniques will facilitate regulatory decision-making which explicitly balances social costs and benefits, even if they are often difficult to quantify. The importance of well-informed decisions is likely to increase in the future as more resources are devoted to reducing environmental externalities and consequently, the potential for waste grows.[56]

At the macroeconomic level, total environmental and compliance costs are currently estimated by the DOE to have been about £14 billion in 1990/91, of which about 60 per cent (representing roughly 1.5 per cent of GDP) were related to compliance costs.[57] So far as the data available support international comparisons, this is comparable to the proportion observed in other leading OECD countries. (Reliable time trends cannot be based on the information available for the United Kingdom.) The benefits are better environmental quality compared with what might have prevailed in the absence of such changes in policy, and in many respects even compared with what actually was achieved in the past.

The state of the environment in the United Kingdom

Judging by widely monitored emissions, noteworthy progress has been made in the United Kingdom over the past two decades in improving air and water quality by applying more stringent standards. The United Kingdom fell in the middle ranks of OECD countries in the late 1980s, on standardised measures of pollutants per capita or GDP. It tended to be somewhat above the OECD average for emissions per capita of oxides of sulphur (SO_x) and oxides of nitrogen (NO_x), but better than the average in eliminating CFCs and improving the quality of inland water (Table 9). Carbon dioxide (CO_2) emissions are also slightly above the OECD average. However, given wide differences in national

Table 9. **Environment indicators**

	Air					Waste			Noise	Pollution control expenditure[1]		
	Sulfur oxides	Nitrogen oxides	Particulates	Carbon monoxide	Carbon dioxide[2] Tons C per capita	Industrial waste per unit of GDP Tons per $ million	Waste-generated municipal waste kg per capita	Nuclear waste[3] per unit of energy Tons per Mtoe	Population exposed to Leq>65dB[4] Million inhabitants	Total expenditures[5] Per cent of GDP	Total investments Per cent of national investment	Government R&D budget Per cent of total government R&D budget
	kg per capita											
United Kingdom	64.6	47.0	8.9	113.9	2.9	66	357[6]	4.3	6	1.3	n.a.	1.3
Canada	148.1	73.3	67.4	425.1	5.2	188	625	5.9	n.a.	1.3[7]	n.a.	2.2
United States	84.0	80.4	28.0	244.8	5.9	186	864	1.0	17	1.5	2.8	0.5
France	21.5	31.0	4.9	111.4	2.0	61	303	4.3	9	0.9	1.3	0.7
West Germany	16.1	43.7	4.3	143.1	3.1	70	318	1.3	6	1.5	3.1	3.4
Italy	34.9	29.7	7.9	103.1	2.0	52	301	0.0	n.a.	n.a.	n.a.	1.9
Japan	6.9	9.6	n.a.	n.a.	2.3	211	394	1.9	37	1.3[7]	3.2	0.4[8]
North America	88.9	78.7	32.6	261.2	5.9	186	840	1.5	19	n.a.	n.a.	n.a.
OECD Europe	31.9	30.7	9.3	97.6	2.2	56	336	2.3	61	n.a.	n.a.	n.a.
EEC	37.1	34.0	6.8	105.0	2.4	59	327	2.3	48	n.a.	n.a.	n.a.
OECD	47.9	43.9	15.6	150.0	3.5	121	518	1.8	119	n.a.	n.a.	n.a.
World	19.4	13.3	11.7	34.6	1.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

1. Mid-1980s.
2. CO_2 from energy use only; international marine bunkers included.
3. Wastes from spent fuel in nuclear power plants, in tons of heavy metal per million tons of oil equivalent (primary energy supply).
4. Road traffic noise.
5. Household expenditures excluded.
6. England and Wales only.
7. Partial total.
8. OECD estimate.

Source: OECD, *OECD Environmental Data, The State of the Environment* and *Environmental Indicators,* Paris, 1991.

Table 9. **Environment indicators** *(cont'd)*

	Land				Forest			Threatened species		Water		
	Total area Per cent of world area	Major protected areas Per cent of total area	Nitrogenous fertilisers use	Pesticides area	Area Per cent of land area	Use of forest resources Annual growth	Tropical wood imports[1] $ per capita	Mammals	Birds	Water withdrawal Per cent of gross annual availability	Fish catches[2] Per cent of world catches	Waste water Per cent of national population served
			Tons per sq. km of arable land					Per cent of species known				
United Kingdom	0.2	18.9	21	0.6[3]	10	0.4	5.9	31.2	15.0	12.1[4]	0.9	84
Canada	7.5	7.0	3	0.1	49	0.4	1.0	6.6	3.5	1.5	1.8	66
United States	7.0	10.5	5	0.2	32	0.6	0.7	10.5	7.2	18.8	6.4	74
France	0.4	8.7	14	0.5	28	0.5	6.2	52.2	39.8	23.6	1.0	52
West Germany	0.2	11.9	20	0.4	30	0.7	4.8	39.4	25.6	27.5	0.2	90
Italy	0.2	4.3	8	n.a.	23	0.8	6.2	13.4	14.3	30.1	0.6	60
Japan	0.3	6.4	14	1.8	67	0.4	21.6	7.4	8.1	16.3	12.8	39
North America	14.5	8.7	5	0.2	41	0.6	0.7	n.a.	n.a.	9.5	8.1	73
OECD Europe	3.4	6.6	10	0.4	33	0.6	6.7	n.a.	n.a.	12.9	12.7	57
EEC	1.8	8.2	12	0.6	25	0.5	7.3	n.a.	n.a.	23.6	7.8	61
OECD	24.0	7.7	6	0.3	33	0.6	6.5	n.a.	n.a.	10.1	34.4	60
World	100.0	4.9	5	n.a.	31	n.a.	n.a.	n.a.	n.a.	n.a.	100.0	n.a.

1. Total imports of cork and wood from tropical countries.
2. Marine and inland waters.
3. Great Britain only.
4. England and Wales only.

Source: OECD, *OECD Environmental Data, The State of Environment* and *Environmental Indicators*, Paris, 1991.

definitions and measurement techniques, cross-country comparisons should be made with caution.[58] In general, trends within individual countries are likely to be more reliable indicators.[59]

Air quality

The United Kingdom has fulfilled its obligations under the Montreal Protocol, reducing the production and consumption of CFCs and halons well ahead of schedule; in aerosols, a reduction of over 95 per cent has already been achieved (Diagram 18). The United Kingdom has also responded to the growing concern that increased atmospheric concentrations of man-made gases will enhance the greenhouse effect, with consequences for the climate, sea levels and world agriculture.[60] The government is aiming to return the level of U.K. CO_2 emissions to their 1990 levels by the year 2000. In contrast to a general increase in carbon dioxide emissions per capita (the most important greenhouse gas) in the OECD area since 1971 (Table 10), they fell sharply in the United Kingdom from 1971 to a (coal miners' strike-affected) 1984 low, and subsequently stabilised through the latter half of the 1980s – notwithstanding a period of above average economic growth[61] (Diagram 19). CO_2 emission levels in the United Kingdom are now slightly above the OECD average.

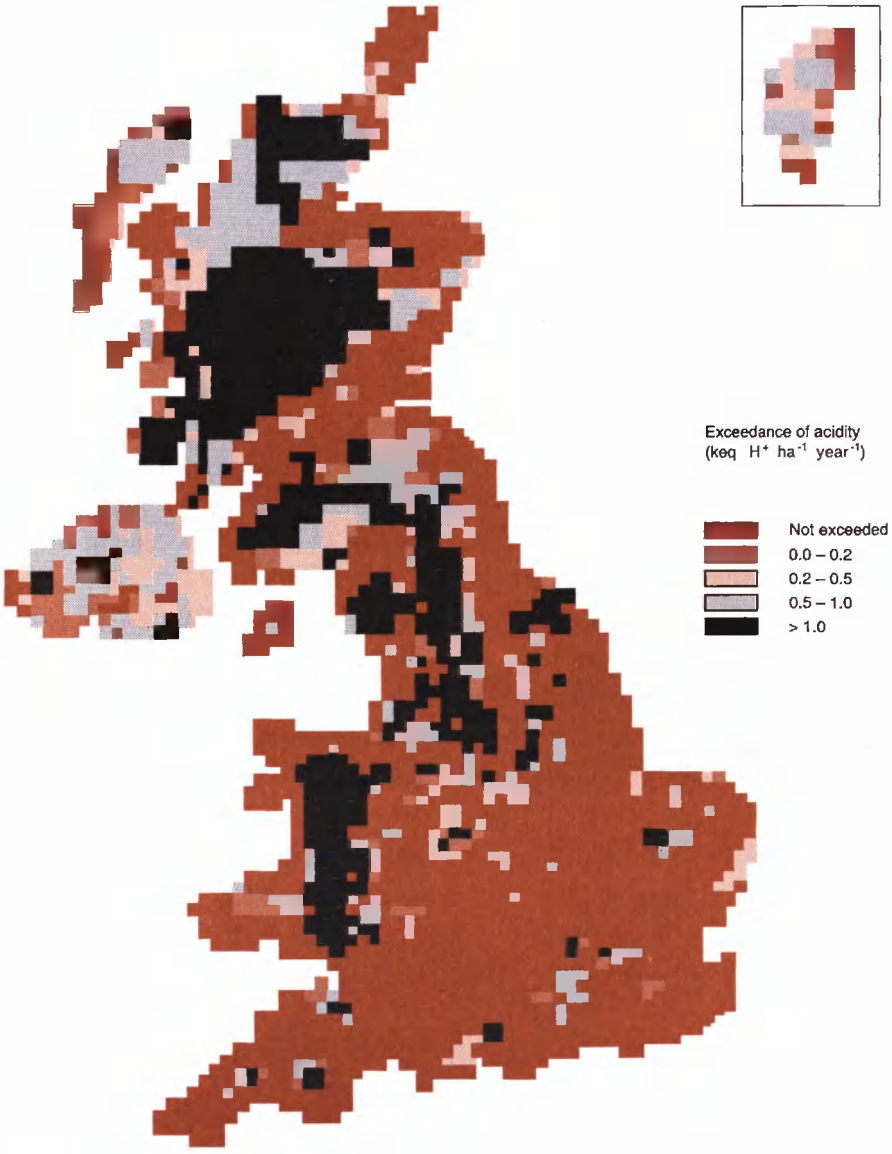
However, U.K. SO_2 emissions are among the three highest of OECD countries on a per capita or per unit of GDP basis, reflecting the heavy, albeit declining reliance on high sulphur content coal in power generation.[62] Over 90 per cent of emissions of man-made sulphur dioxide are released by the combustion of sulphur-containing fuels (coal and oil), of which 72 per cent comes from power generation burning fossil fuels.[63]

The rising trend in nitrogen oxides is also an area of concern (see Box on road pricing, as a means of reducing urban traffic congestion and congestion-induced NO_x emissions). Total NO_x emissions were stable in the United Kingdom in the first half of the 1980s, but have risen steadily since 1985.[64] Similarly, toxic air emissions including volatile organic compounds (VOCs), carbon monoxide (CO) and lead remain a problem area. These are closely related to the transport sector.[65] VOC emissions broadly stabilised from 1987 to 1990, but the share coming from road transport rose from 38 per cent in 1980 to about 41 per cent in 1990. Carbon monoxide emissions, on the other hand, actually rose by an estimated 1.6 million tons from 1980 to 1990 (an increase of 32 per cent), with an

Diagram 18. **AIR QUALITY**

Areas where critical loads for acidity of soils are exceeded

United Kingdom



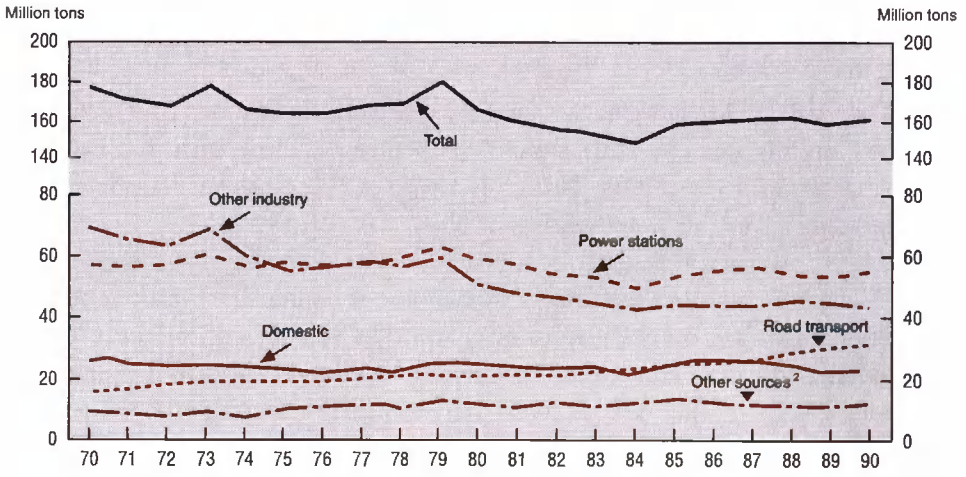
Source: Department of the Environment.

Table 10. **Emission of major air pollutants in the United Kingdom**

	1970	1975	1980	1985	1990
Sulphur dioxide (SO_2) (thousand tons)	6 424	5 217	4 898	3 724	3 774
of which:					
Power stations	..	..	3 007	2 627	2 722
Nitrogen oxides (thousand tons)	2 510	2 427	2 312	2 327	2 729
of which:					
Road transport	..	..	804	970	1 381
Volatile organic compounds (thousand tons)	..	..	2 297	2 267	2 395
Carbon monoxide (CO) (thousand tons)	4 840	4 665	5 032	5 531	6 659
of which:					
Road transport	..	..	4 104	4 648	5 986
Carbon dioxide (CO_2) (million tons)	189	172	165	155	160
of which:					
Power stations	..	..	58	52	54

Source: Department of the Environment, *Digest of environmental protection and water statistics 1991,* and OECD, *Environmental data, Compendium 1991* for 1970 and 1975.

Diagram 19. **CARBON DIOXIDE EMISSIONS[1] BY SOURCE, 1970-1990**
United Kingdom



1. Expressed in terms of carbon emitted.
2. Commercial and public services, railways, civil aircraft.

Source: Department of the Environment.

increase of 1.9 million tons in road transport offsetting declines in other sectors, notably domestic fuel use.[66] By contrast, lead emissions, which are a major health hazard, have been reduced sharply over the past decade.[67]

Water quality

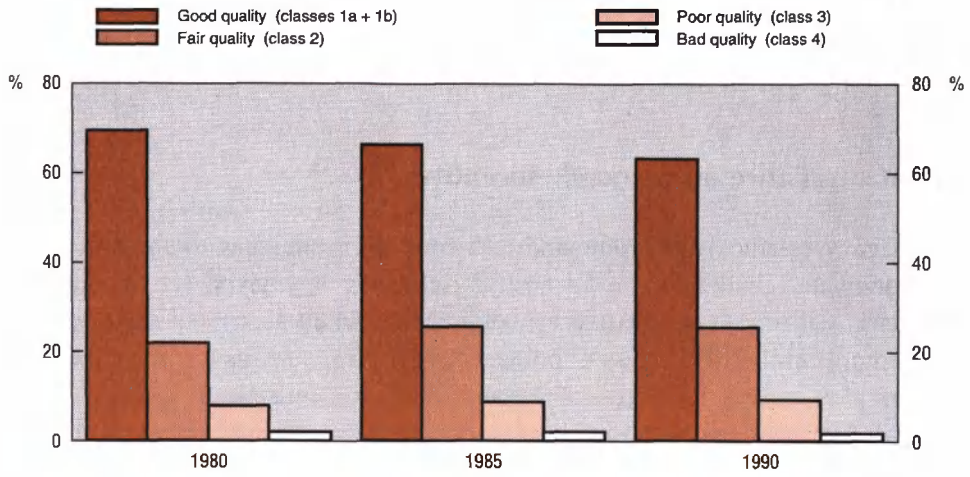
Increasingly large volumes of inland water are being used for drinking, industrial use and agriculture. Drinking water quality is good, but there is evidence of substantial losses in the water distribution system.[68] By contrast, a number of coastal sewage disposal facilities are outdated and roughly 25 per cent of U.K. bathing waters failed EC bathing water standards in 1991. Recent data indicate that U.K. bathing water quality is the lowest among EC countries, with the exception of Germany, after the inclusion of East Germany. However, due to diverse monitoring regimes, the degree of compliance with EC Bathing Waters Directive may not be a good measure of the quality of coastal waters. To improve on basic water and sewage infrastructure and on marine conditions, a £30 billion programme is underway, as part of the water companies privatisation agreement in England and Wales in 1989.

The Water Industry Act 1991 requires water companies in England and Wales to supply water which is wholesome at the time of supply for domestic or food production processes. Non-compliance with standards is quite low: only 1.2 per cent of determinations exceeded prescribed concentrations in 1990, indicating that drinking water in England and Wales is of generally high quality.

The latest 1990 National *Survey* indicated that *inland* water continues to be of good or fair quality, with around 90 per cent falling into this category, compared with 75 per cent in the EC as a whole. There has been an overall net downgrading of inland water quality of about 3.6 per cent of river length since 1985. It is estimated that most of the net downgrading may have been due to measurement factors and the effects of two hot dry summers, with one-third of the net downgrading resulting from discharges. In Scotland, 95 per cent of non-tidal rivers and canals and around 65 per cent of tidal rivers were unpolluted. In Northern Ireland, 95 per cent of rivers were similarly classified to be of good or fair quality in 1989 (Diagram 20).

Sewage discharges, effluents, agricultural effluents and runoffs are the main adverse influences on water quality.[69] Over 90 per cent of the population is served by sewers and the rest by septic tanks.[70] Over 80 per cent of sewage produced in

Diagram 20. **RIVER AND CANAL QUALITY**
England and Wales



Source: Department of the Environment, *River Quality Surveys.*

England and Wales receives secondary biological treatment. About 95 per cent of the polluting load of sewage is removed by treatment before discharge into inland rivers (the figure is only 50 per cent for discharges into tidal waters). An improvement is expected when the EC 1991 directive on Urban Waste Water is implemented.

The quality of bathing water and beaches is mainly affected by sewage discharges, with screening only for the removal of gross solids. The older short sea outfalls and stormwater overflows make the most significant contributions to coastal pollution.[71]

The EC Bathing Water Directive came into force in 1976 with a target compliance date of December 1985. For the United Kingdom as a whole, 53 per cent of bathing waters complied with the Directive between the four years 1988 to 1991 (with a further 18 per cent complying in three of these years). Over 12 per cent of bathing waters failed to meet these standards from 1988-91, with the North-West region having the worst record.

The quality of *coastal and marine waters* around the United Kingdom is affected by the tides, currents and weather, as well as dumping of sewage, industrial waste and other pollutants offshore and on the coast. Dumping of industrial and hazardous waste at sea is being steadily cut back. Disposal of liquid industrial waste at sea is to cease by 1993.

Greater reliance on economic incentives

Heavy reliance on "command and control" techniques to meet the new environmental challenge can be costly. Achieving any given set of emission standards will involve excessive economic costs, when abatement standards are applied uniformly over a class of polluters (the typical case, as it is too expensive or complex to estimate true abatement costs for individual sources). Cost minimisation requires equalisation of marginal abatement costs across all sources of pollution. Market-based instruments, which encourage this, can lead to more cost-effective abatement.

One approach to reducing the costs of meeting environmental objectives is to allow trading in permits for specific pollutants (as in the United States since the 1970s). This is a *complement* to regulatory control because strict quotas on permissible levels of emissions are still set.[72] It allows those who can reduce emissions below prescribed levels to profit from doing so, and increases the pressure on those for whom reducing emissions is particularly costly. Trading introduces economic incentives to improve on minimum standards through R&D and investment – a feature largely absent under regulatory control.

As environmental standards become more stringent, compliance costs (currently estimated at about 1 to 1½ per cent of GDP) could rise under a command and control approach, reducing real income gains. Market-based environmental instruments are thus likely to become increasingly attractive in the 1990s. Apart from cost and efficiency gains from improved incentives, they have the added advantage that their information requirements are substantially less than those of a regulation-based system. The U.K. government is committed to the evaluation of new approaches to delivering environmental policy goals, as the 1990 White Paper and subsequent reviews indicate. However, the practical obstacles, and in particular the weight of Community legislation based firmly on regulation, should not be under-estimated.

Market-based instruments in practice

The introduction of market-based environmental instruments, such as tradeable permits and marginal-cost-related user charges is at an early stage in the United Kingdom:[73]

- The DOE has controlled SO_2 emissions by setting a maximum level of emissions for each of the two major privatised electricity-generating companies (PowerGen and National Power). This allows each generator, subject to certain controls, the freedom to distribute output to low-polluting power units to minimise compliance costs. The government is examining the possibility of extending this approach to allow the *trading of emission rights* between the generators and with other operators of existing plants covered by the EC Large Combustion Plants Directive. The size of the bubble for existing sources is decreased by 3 per cent every year;
- More extensive *users' charges* are being introduced for industrial water discharges, and waste charges are now based on volume rather than on a flat rate basis;[74]
- As regards household waste, a system of *recycling credits* has been introduced. These are payments by local authorities to recyclers, and reflect the savings in disposal and collection costs made by the authorities. (There are no direct charges for domestic waste collection reflecting volume or type of waste except for minor exceptions, see below);[75]
- Petrol (gasoline) *taxes* have been raised steadily (while freezing the annual vehicle excise duty at £100 since 1985) to relate road usage more closely to marginal cost. The tax wedge has been widened between unleaded and leaded petrol (to 23p per gallon) to reduce lead emissions (see above). Incentives to own a company car have been largely eliminated through heavier taxation of benefits in kind;
- Registration *fees* for heavy lorries have been related to weight per axle to reduce road damage since the 1960s;
- The previous RPI-X formula to regulate pricing of the gas industry has been modified to provide energy efficiency schemes to be passed on to consumers. Consultations in progress may lead to the introduction of similar arrangements for the electricity companies. The government,

together with the gas and electricity companies, has set up an *Energy Saving Trust* to promote energy efficiency schemes (cf. Chapter III);[76]
- The government has proposed a tradeable credits scheme for car efficiency for EC car manufacturers. Road pricing schemes to reduce congestion are under study in London and Cambridge;
- The government supports the European Commission's proposal for the introduction of a voluntary Community-wide environmental management scheme. This scheme, provisionally titled "Eco-audit", would encourage companies to positively manage their environmental impacts and report on their performance to the public;[77]
- The United Kingdom has played a leading role in preparations for the introduction of a voluntary European Community eco-labelling scheme. The scheme is due to be launched in the early part of 1993 and will provide an official label for consumer goods which are less harmful to the environment than equivalent brands.[78]

Exceptions in tax and pricing policies

The government generally supports a neutral tax-subsidy system. Nonetheless, a number of exceptions exist which give inappropriate price signals with respect to environmental protection. These include *inter alia:*

- Taxation of fossil fuels bears little relation to potential environmental damage. Although coal production does not receive operating subsidies, as in some other EC countries, it does benefit from transfers associated with past unprofitable production and pit closures and is favoured by existing contracts;
- Household energy use is zero-rated for VAT,[79] and investment in energy saving is subject to standard-rate VAT;
- Sale of electricity generated by fossil fuels is subject to a levy equivalent to 11 per cent of final electricity prices which is used to subsidise higher-cost U.K. nuclear power and renewable energy. This has the effect of raising the open-market price for electricity. Under current arrangements, as France supplies low cost nuclear power through the EC power grid, the benefit of the higher price passes back to EDF *(Electricité de France);*[80]

- Household water usage is usually not metered, but financed by a charge based on rateable values, along with sewage. This fixed charge clearly provides little incentive for economy in the use of water by households;[81]
- Public transport receives relatively low levels of public support, whereas private parking provided by employers is exempt from taxation as a benefit in kind;
- The Common Agricultural Policy (CAP) gives distorted output price signals, thereby encouraging overly intensive farming practices, although reforms to the CAP are being considered.

In short, market-based economic instruments play a small, albeit growing, role in environmental policy in the United Kingdom, and a number of innovative schemes are under consideration. Such instruments would undoubtedly be even more efficient if existing inconsistencies in the tax and transfer system were removed. However, some exemptions have a justification in other policy objectives. There are also considerable obstacles to reform, for example in the weight of EC legislation based on "command and control" philosophies.

Privatisation and the environment

Privatisation of government-owned companies is a way of making use of market incentives to improve economic efficiency. While it does not bear directly on the state of environment, it could often facilitate reduction in pollution. Privatisation exposes the real costs of production and allows economic agents to make rational decisions based on less distorted relative prices. The popular view that, whereas privatisation of "natural monopolies" has led to supply-side efficiency gains, these may have been at the expense of greater laxity on environmental standards, is contradicted by the experience in the United Kingdom. The combination of widespread privatisation and more effective regulatory control has led to a more level playing field for regulated industries. Privatisation has also promoted more rational decision-making by increasing the transparency of decisions and exposing public-sector cross-subsidisation of inefficient activities. A striking example of supply-side efficiency gains is the predicted quick spread of more efficient combined gas-turbine electricity generation and the marked drop in the use of highly polluting coal-fired plants. Increased investment to modernise infrastructure in the newly privatised water industry is another exam-

ple. Such supply-side reactions can have some positive spin-offs on the environment.

Energy and the environment

Energy use has direct effects on air quality, as combustion of fossil fuels is the single most important source of air emissions contributing to global warming, acid rain and urban pollution. Although energy use and pollution do not move in lockstep, a reduction in fossil fuel use and a switch to cleaner fuels would reduce emissions of air pollutants.

The notable feature of U.K. energy usage is its high dependence on coal (80 per cent is used in electricity generation), despite a steady decline over the post war period. The share of nuclear energy, which does not directly pollute the air, but does raise questions of safety and problems of waste disposal, is smaller than in most other EC countries. However, the use of "clean" natural gas is somewhat higher and that of oil somewhat lower than the EC average. Heavy coal dependence partly accounts for the United Kingdom's above-EC average emissions of SO_x and CO_2. Coal's carbon content is almost twice that of natural gas (per unit of heat). It also has more sulphur than any other fossil fuel (Table 11).

The dominant role of domestic coal reflects *inter alia:* the cost advantages of inland transport, the lack of port facilities to handle low sulphur foreign coal, and past preferential "arrangements" between nationalised companies to buy

Table 11. **Energy supply by source, 1990**

Per cent of total

	United Kingdom	EC excluding the United Kingdom
Coal	29.5	18.0
Oil	39.0	45.4
Gas	22.5	17.2
Nuclear energy	8.2	15.7
Hydro, geothermal and solar energy	0.4	0.2

Source: OECD, International Energy Agency, *Energy Balance Sheets,* Paris, 1992.

Inter-fuel substitution in power generation

There is considerable scope for inter-fuel substitution in power generation. Roughly 80 per cent of British coal is used for power generation, representing almost 70 per cent of electricity generated – double the European average (see below).

Fuel shares in U.K. power generation

	1990	2000[1]	2005[1]
Coal	67.5	53.4	47.0
Oil	8.6	8.5	8.7
Gas	1.1	16.4	29.5
Nuclear	20.7	17.4	10.7
Hydro/Geo Other	2.1	4.4	4.1

1. IEA forecasts.

Electricity generators plan a substantial expansion in the use of gas-fired power plants. Based on IEA estimates about 15 gigawats of new capacity will be operational by the year 2000 and 24 gigawats by 2005. Up to the year 2000 most of this new capacity will *replace existing* coal-fired power plants. (There is some concern of emerging excess generating capacity; however, these concerns confuse excess with obsolete capacity). Fuel substitution in the power generation sector could reduce thermal carbon emissions intensity by 7.5 per cent which, despite growing power demand, would translate into declining emissions from the power sector. This reduction will help the government to meet its target of stabilising the level of carbon emissions at 1990 levels by 2000. Beyond 2000, maintaining 1990 carbon emissions will become increasingly difficult and more costly, especially as the relative importance of nuclear energy will decline under current policy.

Removing obstacles to fuel substitution is a cost-efficient abatement policy. Even in the absence of environmental objectives, it would improve overall economic efficiency.

domestic coal (at prices currently up to 30 per cent above world levels at port of entry).[82] However, developments in technology have sharply shifted the balance of economic costs in favour of gas-fired power plants: construction times are short, operating and capital costs are low and optimum plant size much smaller. The United Kingdom has ample natural gas reserves at competitive prices and eventual access to Norwegian supply. The expiration of present contracts

between the two major electric power generators and British Coal in March 1993 will speed the process. Rapid projected substitution of natural gas for coal-fired power generation will greatly facilitate the return of carbon emissions to their 1990 level by the year 2000 (see Box on inter-fuel substitution in power generation).

Removing artificial barriers to fuel substitution and conservation and establishing energy prices which better reflect potential environmental damage are likely to be the most cost-efficient means of protecting the environment. At present, energy taxation is largely unrelated to potential environmental damage. For U.K. households, petrol is much more heavily taxed than other fuels; at the same time, industrial fuel oils are lightly taxed, while coal for industrial use is exempt. As in other EC countries, subsidies and government procurement add further distortions: the government subsidises the coal industry (£2.4 billion to British Coal in 1990/91), and it continues to buy steam coal for electricity generation at above world prices. Since coal has about twice the carbon content of natural gas and about a quarter more than oil-based fuels, relating energy taxes to ''carbon-content'' and ending subsidies, both explicit and implicit, would reduce emissions of CO_2 and SO_2.

Fuel substitution, albeit important, cannot ensure *continuing* reductions in emissions of air pollutants. This will require technical innovation and policy action to improve energy efficiency. The most efficient means of lowering carbon emissions would be to raise the cost of carbon by imposing a ''carbon tax''. There would appear to be considerable scope for reducing emissions at a national level, but addressing the problem of global warming would require international action (see Box on energy pricing and carbon emissions).

Energy pricing and carbon emissions

The economic costs of achieving a given level of carbon abatements will be lower, the higher the initial carbon and energy intensity and the larger the response of energy demand to prices. The effectiveness of economic instruments depends crucially on the absolute size of the own and cross price elasticities of demand. There is, considerable uncertainty concerning these parameters. As there is limited flexibility in the existing capital stock, adopting more efficient technologies changes energy use slowly. Analyses based on time series data, therefore typically show low short-run price elasticities of fossil fuel use, but higher long-run elasticities, albeit varying considerably across studies. (Boero, Clarke and Winters (1991) and Cline (1989) provide useful surveys of the literature.)

Many studies have considered the quantitative impact of a carbon tax on energy use and carbon emissions. These studies suggest that quite high tax rates would be required to achieve modest carbon abatement. Research by Symons, Proops and Gay (1990) suggests a carbon tax rate of £60 per ton of carbon to reduce 1990 emissions by 20 per cent and £200 for a 40 per cent reduction. Ingham and Ulph (1990) compute that reducing 1990 emissions by 25 per cent would require increasing coal, oil and gas prices by 169, 78 and 98 per cent respectively (for a more detailed survey of the literature see Boero, Clarke and Winters, 1991). The impact on final energy prices would also depend on existing energy taxes. In percentage terms petrol and diesel prices would increase the least, as current taxes are high. Coal prices would, however, increase more dramatically, with consequences for coal consumption and associated air emissions.

As energy prices differ considerably among OECD countries, cross-country data may well provide a better gauge of the potential long-run effects of prices on demand and emissions. The Diagram below relates emission intensities to the implicit price of carbon emissions among OECD countries. It illustrates a clear strong-inverse relation between prices and carbon emissions. It also provides a rough *ceteris paribus* guide to the magnitude of price increases which would be needed to reach specific emission objectives in the long-run. On this measure, the United Kingdom is about average. A modest carbon tax could have a significant impact on U.K. emissions in the long term, but it would make little difference to global emissions. Moreover, the non-linear relationship implies that carbon emissions could be most efficiently reduced in North America, where energy prices are low and emission intensities high (Diagram 21).

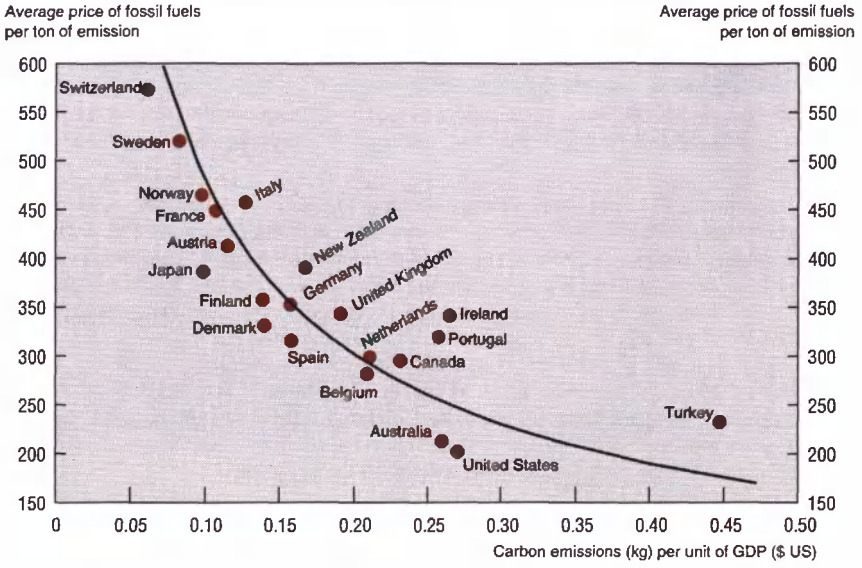
As the damage from carbon emissions is related to global concentrations the policy context is also global. The gains from international co-operation are clearly large, but the diverse distribution of costs complicates international negotiations and burden sharing. Even the proposed EC carbon-cum-energy tax would only address 13 per cent of current global emissions. Nonetheless, countries like Norway, Denmark, Sweden, the Netherlands and Finland have introduced small-carbon related taxes – the tax scales are typically not purely related to carbon content. The direct national benefits in terms of global warming "insurance" are low, but there are indirect local benefits as well – reductions in emissions of SO_2 and NO_2, reducing health hazards, acidification, corrosion

(continued on next page)

(continued)

Diagram 21. **INTERNATIONAL COMPARISON: PRICES PER TON OF CARBON EMISSION AND EMISSION INTENSITIES**

1989, $ US



Source: Estimates based on IEA data, OECD.

and traffic accidents. Studies by Ayres and Walter (1991) and Alfsen *et. al* (1992) indicate that the loss in real national income could be partly compensated for by indirect benefits from a unilateral reduction in CO_2 emissions.

Some of the apprehensions concerning international competitiveness from the adoption of a carbon tax might also be misplaced. A carbon tax could be designed to be cost or revenue neutral, by off-setting tax cuts on other factors of production (*e.g.* corporate or payroll taxes) thereby encouraging a switch to less carbon'' intensive output. Hence, while an international carbon tax might be an optimum solution, unilateral action is not precluded.

Emissions from road transport

The road transport sector is a significant contributor to emissions of carbon dioxide, nitrogen oxides, carbon monoxide and hydrocarbons. As elsewhere, these emissions have grown rapidly over the past two decades. The adoption of comprehensive emission standards for new cars will cut harmful pollution considerably. Much of the benefit of these measures will be lost through continued growth in traffic volume and congestion. Over the past two decades, road traffic has doubled, while the road network has expanded by 10 per cent, leading to urban congestion and exacerbating environmental damage. Effort is being directed to easing urban congestion, including research into radical measures such as road pricing.

Carbon dioxide emissions are only one component of air pollution caused by road transport, so a carbon tax is not (by itself) the best approach. It has been suggested that road transport currently bears an appropriate degree of taxation in the United Kingdom (see Newbery, 1988). However, the current structure of road user charges gives incorrect signals for efficient road use. Road user charges include vehicle licences and fuel taxes. Fixed charges (vehicle licences) increase the total cost of motoring and influence car ownership, but not vehicle usage. Compared with other OECD countries, the United Kingdom raises a higher proportion of road taxes from fixed rather than variable charges. As expected, the level of car ownership is lower than elsewhere, but distance travelled per car greater. The main problem lies in appropriately pricing road usage to reduce congestion and local air pollution emissions from transport. It might be most cost efficient to adopt marginal cost pricing where possible (*e.g.* toll roads, see Box on road pricing), as well as removing existing distortions and anomalies in the tax and transfer system, before initiatives such as a carbon tax are considered.

Concluding remarks

In summary, emissions of major pollutants into the air and water in the United Kingdom have fallen significantly over the past two decades. Most of the improvement achieved to date has been due to stricter and/or more effective regulatory control, although higher real energy prices, privatisation and compositional shifts in output have also played a role.

Road pricing

As transport-related pollution emissions are closely linked to distance travelled, a road pricing system should be designed to influence this factor. The inverse relationship between gasoline prices and consumption highlights the role that fuel taxes can have on emissions. However, whereas fuel taxes vary according to the marginal cost of distance travelled, they cannot distinguish between congested and uncongested zones.

Drivers bear part of the cost of traffic congestion through wasted time, higher gasoline consumption and accelerated car depreciation. But, the environmental damage is borne by the community. Road management policies designed to minimise road congestion and/or to encourage public transport have not worked well or have proved costly. Nor have other programmes focusing on traffic information or restricting driving (limiting parking spaces, restricting traffic lanes or "odd and even" days) proved successful. More generally, these are "second best" approaches which target factors related to road usage.

A first-best approach would seek to price road usage directly, rather than by taxing inputs. Appropriately set charges could encourage drivers to reschedule or re-route journeys, use alternative modes of transport and change behaviour (*e.g.* car pooling). The structure of fees could also reflect the "higher value" of road services during peak-loads in specific areas, thereby easing congestion, mitigating environmental damage and raising effective road capacity. Advances in technology could soon make it feasible (at moderate cost), to introduce systems which can monitor average speed, time and distance travelled or allow automatic billing for toll roads. The choice of technology would depend on specific circumstances and needs. Singapore has had a successful road pricing policy since 1975. In its first year, private cars entering the city during the peak traffic period fell by 75 per cent. Hong Kong has put a road pricing scheme into place based on toll bridges. A road pricing study is underway for London and a pilot study based on smart card technology is being launched in Cambridge. The U.K. government will publish a Green Paper on inter-urban road pricing in 1993.

Not all air pollutants are emitted in proportion to distance travelled and damage is not uniform. NOx emissions, depend largely on the combustion process and location. Since the transport sector is characterised by numerous non-stationary emission sources, it might be more efficient to limit emissions by mandatory manufacturers' abatement standards, while responding separately to the spatial dimension. Comprehensive EC standards for new cars take effect from the end of 1992, and will cut harmful emissions from petrol-engined vehicles by around 80 per cent. Additional measures are proposed for light vans and existing diesel-engined vehicles, and to cut car emissions further.

Provision of road infrastructure presumes some system of payment. Direct charges are preferable, as they provide a clear link between the service provided and marginal cost. In some cases, however, it is not feasible at present to charge directly and/or difficult to establish rational charging. Indirect approaches are therefore relied upon, but these offer little information for efficient decision making. As road networks developed the most feasible payment options were indirect user charges such as fuel and vehicle

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taxes. These charges still dominate and are too low to reduce urban congestion. In recent years, electronic techniques which can relate car use more closely to marginal social costs have developed. Restructuring road pricing to reflect true social cost holds out the potential to significantly improve driving conditions, improve economic efficiency and environmental protection; especially in urban areas.

In the short run, a cost-efficient means of enhancing environmental protection would be the elimination of barriers to the substitution of clean fuels for coal. The elimination of a number of inconsistencies in the tax-subsidy system could also improve economic efficiency and contribute to a cleaner environment – and would ensure that, at a minimum, the government does not give inappropriate price signals. The introduction of market-based environmental instruments and marginal-cost-related user charges is at a relatively early stage in the United Kingdom. Their importance is, however, likely to grow to respond in a cost-efficient manner to the goal of a cleaner environment.

V. Conclusions

Following the government's decision to suspend its participation in the ERM on 16 September 1992, sterling dropped to a trading range of DM 2.52 to 2.55 during the first week of its float and subsequently fell to a range of DM 2.40 to 2.44 in November. Through its first year in the ERM, sterling broadly traded within its implicit ± 2.25 per cent narrow band around the parity of DM 2.95, as the anti-inflationary stance of monetary policy coincided with domestic and external policy goals. But conflicts became apparent later. When the Bundesbank's discount rate was raised in July 1992, the Bank of England's interest rates were held. Sterling dropped below its implicit narrow band and subsequently to near the bottom of its 6 per cent band. Pressure on sterling mounted as markets perceived that the level of interest rates required to maintain its parity was too high given the continuing weakness of economic activity and progress on inflation. In the event, financial market turbulence related to the run-up to the French referendum on the Maastricht treaty ultimately led to the decision to float sterling.

The decision to withdraw temporarily from the ERM was taken against the background of a recession which proved far deeper and more protracted than anticipated. Total output fell in the six quarters to the end of 1991 by a total of some 4¼ per cent from its mid-1990 peak, and has since broadly stabilised. Provisional data indicate that non-oil GDP fell 0.3 per cent (actual rate) in the third quarter, but that total GDP was flat. Although the conditions for modest recovery had been present for some time, the up-turn appeared to be stalled by the interaction of high household debt, falling house prices, high interest rates, and fears that rates would need to be raised further to defend sterling. Risks of higher unemployment and debt deflation prompted an increase in precautionary household savings and, together with strength in imports, damped the hesitant recovery in domestic demand which had started in mid-1991.

Inflation has come down sharply over the past two years. From a peak of almost 11 per cent in October 1990, the 12-month rate of increase in the "headline" retail price index (RPI) had dropped to 3.6 per cent by October 1992; excluding mortgage interest rates, the increase in the RPI was down to 3.8 per cent. Inflation expectations have shown a similar pattern and wage settlements and earnings growth are estimated to be down to their lowest levels since the 1960s.

The exchange rate constraint imposed a stance of monetary policy through much of 1992 which ultimately proved unacceptably tight. With sterling's effective rate down by roughly 15 per cent and base lending rates at 7 per cent by mid-November, a substantial easing in monetary conditions has occurred. U.K. cost competitiveness in foreign-currency terms has also been substantially improved.

Currency depreciation, lower interest rates and the measures announced in the Autumn Statement have improved prospects for recovery: these factors may help to support house and commercial property prices, thereby ameliorating balance-sheet positions and lessening the risks of debt deflation. Debt service constraints should be eased and cash-flow improved. Real output could start to grow modestly in the first half of 1993, reflecting a slow recovery in private consumption. A more broadly based expansion might get under way thereafter, as confidence improves, the drop in sales of consumer durables ends, the savings rate falls and destocking stops. Public spending, especially public investment, should contribute to recovery, as will on-going investment by the newly privatised water companies. The real foreign balance, which had deteriorated markedly over the past year and a half, could make a small contribution to growth. All in all, real GDP growth is projected to pick up gradually through 1993-94, perhaps reaching its estimated potential rate of 2½ per cent in the course of 1994.

The short-run effects of depreciation on domestic price and wage setting are expected to be damped by considerable labour and product market slack. Unemployment is projected to increase to almost 11 per cent of the labour force in 1993 and to fall slowly thereafter. The underlying process of disinflation is expected to continue, although the depreciation will raise the price level. The current-account deficit will widen in the near term due to the "J" curve effect and a run-down of net foreign assets, but the deterioration should subsequently ease as improved cost competitiveness partly compensates for the rise in imports

associated with recovery. Such a favourable medium-term outlook for inflation and the balance of payments assumes that macroeconomic policy attaches high priority to controlling inflation over the medium-term and establishes its credibility in this respect.

The economic outlook is clouded by an unusually high degree of uncertainty, especially given the deterioration of confidence in recent months about world as well as domestic prospects. On the one hand, while easier monetary conditions will help to alleviate debt problems, on-going balance-sheet adjustment may prove protracted and further delay economic recovery. On the other hand, the risk of losing inflation gains over the medium term is not negligible, now that the discipline imposed by the ERM is absent. In order to reduce this risk, the authorities have outlined a new strategy, involving an explicit inflation target and greater openness about monetary policy decision-taking.

U.K. inflation in the 1980s was relatively high, averaging 7.1 per cent, 1.3 percentage points above the OECD average (measured by the private consumption deflator). Various approaches have been followed in an attempt to discipline policy, but none has proved sustainable. The quest therefore continues for a framework within which the authorities can pursue a consistent and sustained low inflation policy. The Chancellor has recently proposed an explicit goal for underlying inflation (RPI excluding mortgage rates) of between 1 and 4 per cent for the remainder of the current Parliament, and in the lower part of the range by the end of its term. The long-term aim is an inflation rate of 2 per cent or less. To make monetary policy more transparent, the authorities will publish a monthly report following the regular meeting between the Chancellor and the Governor of the Bank of England to provide the background against which monetary policy decisions are taken. The Bank of England will publish a quarterly assessment of progress towards meeting the government's inflation objective and prospects of achieving it.

These measures are positive steps towards establishing credibility, but the task is not easy. New Zealand and Canada, which have adopted explicit intermediate inflation targets, have built up their anti-inflation credibility by achieving low inflation. In Canada inflation reduction targets were jointly announced by the Central Bank and the government. In New Zealand greater independence has also been given to the Central Bank. While inflation targets may help to anchor

expectations, credibility can only be established by building a record of succes, whatever the precise institutional arrangements.

The recession has had a major effect on the government's fiscal position over the past two years. From near balance in FY 1990/91, the public sector borrowing requirement (PSBR) for 1992/93 was estimated in the March 1992 budget at £28.1 billion, some 5 per cent of GDP. This was revised up to £37 billion in the 1992 Autumn Statement. Excluding privatisation proceeds, the PSBR is projected at £45 billion, 7½ per cent of GDP. While estimates of the cyclical component of the deficit are open to great uncertainty, the OECD estimates are that roughly 70 per cent of the increase in the budget deficit from 0.8 per cent of GDP in calendar 1990 to 6½ per cent in 1992 reflected cyclical factors; on the other hand, the Treasury believes that the cycle accounts for the whole of the deterioration. But in any event, with the expected boost to demand coming from lower interest rates and the exchange rate, fiscal consolidation is now undoubtedly called for.

The government outlined a new medium-term framework for public expenditure control in July. The essence of the framework is that the global public expenditure limit set by the Cabinet is binding. Any growth in resources for one activity greater than the increase in the global limit must be matched by a less-than-proportionate rise elsewhere. The public expenditure planning total of £244.5 billion for FY 1993/94 was confirmed in the 1992 Autumn Statement, and new control totals of £254 billion and £263 billion were set for FY 1994/95 and 1995/96 respectively. Public sector pay increases will be limited to 1.5 per cent in the coming year to protect public sector investment projects and other areas of priority. Assuming that these spending limits are adhered to, the OECD projects that the general government budget deficit (excluding privatisation proceeds) could rise to around 7½ per cent of GDP in calendar 1993, before falling back to 6½ per cent of GDP in 1994, the same level as in 1992. The Chancellor has indicated that the medium-term goal of maintaining sound public sector finances remains and that if, as the economy recovers, it is clear that there is an underlying deficit, then he will take measures to deal with the problem.

Enhancing the supply-side efficiency of the economy has been an essential complement to the successive versions of the Medium-Term Financial Strategy. The impressive programme of structural reforms phased-in during the 1980s has touched all sectors of the economy through tax reform and deregulation of

labour, product and financial markets. Notwithstanding significant progress in structural reform and impressive productivity performance during the current recession, the task is by no means finished:

- Employability needs to be improved. Despite significant progress, education and training reform remains a priority. Too many students drop out of school at 16 and often gain only basic vocational qualifications;
- Continuing reform of trade union legislation is required to improve labour market flexibility;
- Labour market and real wage flexibility could be enhanced through the alleviation of the unemployment trap and barriers to mobility due to rigidities in the housing market;
- Broadening the base of VAT to all categories presently zero rated (food, household energy, etc.) would enhance efficiency by reducing distortions in consumer choice, but would also call for transfers to low income households;
- Further strengthening of the regulatory framework of privatised firms could be made to ensure that profits are achieved through efficiency gains rather than from the exploitation of market power.

The United Kingdom has made major progress in improving the quality of the environment over the past two decades, with significant reductions in emissions of major pollutants into the air and water. As regards air quality, tighter regulatory control and higher real energy prices have encouraged energy savings and conservation. Privatisation has contributed to a cleaner environment by exposing the true costs of highly polluting industries which were formerly state-owned. Compositional shifts in industrial output and privatisation have also prompted supply-side efficiency gains and reduced the energy intensity of total output. On the other hand, emissions of CO_2 and NO_x from road traffic are steadily rising. The authorities have commissioned research into road pricing schemes aimed at the problem of urban congestion. A consultative document on charging for inter-urban roads will be published in early 1993. With respect to water quality, inland water is predominantly classified by the authorities as good or fair, and drinking water quality is good. Notwithstanding substantial improvement in recent years, some coastal and marine waters remain adversely affected by inadequately treated sewage discharges. All in all, most of the improvement in air and water quality achieved to date has been due to stricter and/or more

effective regulatory control and there is considerable scope for greater use of economic incentives.

Renegotiation of the contract between British Coal and the electricity generating companies will substantially reduce coal consumption and lower coal prices. This has prompted the announcement of a major reduction in coal mining capacity, which is subject to a review by the government to be published in early 1993. If implemented, these measures will raise economic efficiency and lead to a cleaner environment (as coal is the most polluting fossil fuel), albeit with substantial, though inevitable, adjustment costs. Continuing action is taking place to reduce SO_2 emissions and should alleviate the problem of trans-border pollution. Other environmental "reforms" could relate taxation and prices more closely to the marginal social cost of pollution – thereby assuring that as a minimum the government does not give inappropriate price signals.

These measures may nonetheless be insufficient to achieve medium-term international environment commitments and U.K. objectives. Other initiatives, including taxation, will need to be considered. As compliance costs are likely to rise in the future, it is becoming increasingly important to use economic incentives to achieve efficient environmental protection, the more so as achieving specific goals by "command and control" techniques provides few incentives to improve on minimum standards.

In conclusion, now that sterling is floating again, the paramount need is to restore the credibility of counter-inflationary monetary policy. In order to achieve this, the government has set out details of its new monetary policy strategy. The decision to withdraw temporarily from the ERM, while regrettable, was perhaps in the circumstances inevitable, given the unusually large divergence of cyclical conditions between the United Kingdom and Germany. Depreciation and the further fall in interest rates will help to end recession. Over the coming two years, real output will no doubt be somewhat higher, *ceteris paribus,* but so will the price level. The essential requirement for policy is to ensure that the weakened currency does not result in higher underlying inflation and that the budget deficit is reined in. These policies must be accompanied by responsible and realistic attitudes in the private sector, notably with respect to wage formation. Continuing progress on structural reform, together with fiscal consolidation and cautious monetary policy, should improve medium-term prospects for sustaining non-inflationary recovery and bringing down unemployment.

Notes

1. Over one-half of car sales in the United Kingdom are company cars. Hence, a part of car sales will be reflected in private investment. The steep drop in new car registrations over the past year may also reflect changes in tax treatment which put fringe benefits (such as company cars) on the same footing as wage income.

2. In the United Kingdom, financial market deregulation in the 1980s allowed households to borrow up to 100 per cent of home values, a far higher proportion than in other large OECD countries. From 1982 to 1989, the ratio of U.K. mortgage debt to GDP rose from 32.1 to 58.3 per cent. Comparable ratios in the United States were 33.5 and 45.2 per cent, in Germany 21.9 and 22.2 per cent, in Japan 18.2 and 25.1 per cent and France 19.2 and 21.0 per cent. Such high leveraging may explain the amplitude of the U.K. house price boom compared with other countries. See "Housing Finance: an international perspective", *Bank of England Quarterly,* pp. 56-64, February 1991.

3. Home ownership in the United Kingdom, at some 70 per cent of households, is among the highest in Europe and OECD countries. Hence, a fall in house prices can be expected to have large effects on household wealth and confidence.

4. See "Negative equity in the housing market", *Bank of England Quarterly Bulletin,* pp. 266-268, August 1992.

5. The significance of "negative equity" may be exaggerated as its apparent effects may well be attributable to the influence of other factors. Further, nine households in ten have positive equity and depressed house prices may mainly act as a real constraint in the event that a capital loss must be realised to permit physical relocation. On average, households occupy a home for seven years before moving.

6. Company dividends in 1991 and 1992 rose strongly, partly on account of high profits and dividends declared by the recently privatised electricity, water and gas companies and Telecom. Nonetheless, the underlying strength seems surprising in view of the cash-flow *constraints on* firms.

7. This "stickiness" largely reflected the cuts in mortgage rates of around 3 percentage points in 1991, which lowered recorded inflation by about 1½ percentage points in the year. As mortgage rates fell less rapidly in 1992, the beneficial effects on the RPI were partially reversed.

8. Year-on-year producer price increases in *October* (excluding food and tobacco) at 2.5 per cent were at their lowest levels since *May 1969.* However, CBI surveys concerning firms' pricing policies indicate that this rise is overstated by the failure to capture price discounting.

9. As privatised firms typically have RPI-x formulae, based on the twelve-month increase in the total RPI, their tariffs will tend to lag the RPI. This inertia is aggravated by the choice of the total RPI, when the reference period is inflated by higher interest rates. With the benefit of hindsight, the formulae chosen proved overly conservative, with rapid productivity gains being reflected in higher profits rather than lower prices to consumers.

10. The "J"-curve effect occurs as trade prices adjust more rapidly than trade volumes in the short run. Hence, in the short run a *depreciation* will typically lead to a widening of a current account deficit.

11. There was an unusual bulge of capital goods imports in 1992 related to the capacity expansion of foreign car companies of perhaps £3 billion – which will eventually be reflected in higher exports. But this factor would explain only a fraction of the import surge.

12. In 1990, the stock of U.K. net foreign assets in 1990 was estimated at £29.6 billion. Following the census survey, this was revised to a net liability of £0.4 billion, while the stock for 1991 was projected at a positive £16.1 billion.

13. Before joining the ERM, the medium-term objective was expressed as price stability. Subsequently, the objective was to reduce inflation to the rates in the low-inflation EC countries.

14. The clearing banks' base lending rate is the usual reference for the effects of monetary policy on short-term interest rates. The Bank of England manages short-term interest rates by its direct operations in the market.

15. See *The Chancellor of the Exchequer's statement to the interim committee,* 21 September, H.M. Treasury, Press Office.

16. The conditions to be satisfied are *i)* an end to the current turbulence in the foreign exchange markets; *ii)* the analysis of recent events commissioned by the Birmingham European Council having been carried forward; *iii)* most importantly, convergence of monetary policy requirements in the United Kingdom and Germany and a narrowing of interest rate differentials between Germany and the United States.

17. This problem was first formally explored in Finn Kydland and Edward Prescott (1977). A recent survey of this issue is in A. Steven Englander (1991).

18. The OECD estimates that the cyclically-adjusted budget deficit was cut by 3½ per cent of GDP over 1979-81.

19. Fiscal years begin 1 April.

20. H.M. Treasury estimates that all of the budgetary deterioration during the past two years can be accounted for by cyclical factors. The Treasury's estimates are based on the methodology presented in "Fiscal developments and the role of the cycle", *The Treasury Bulletin,* pp. 13-24, Winter 1991.

21. It is implicitly assumed that the integral of economic activity around trend sums to zero. This is unlikely to be so during the current cycle on account of the present protracted period of recession.

22. See the *1987/1988 OECD Survey of the United Kingdom* and the 1990 Supplement to *Economic Outlook 47.*

23. Environmental policy reforms are discussed in the next chapter.

24. YT differs from YTS in that all trainees (including 17 year olds) are able to continue in the scheme for two years and their training is specifically targeted towards qualifications classified as National Vocational Qualification (NVQ) II; NVQ III corresponds to "A" levels, the examination taken by those 18 year olds who choose to stay on at school.

25. NVQs are designed to attest to competence in jobs. General NVQs provide broadly-based preparation for work and a ladder for higher qualifications, including higher education.

26. The reforms in the Act were aimed at raising efficiency in the higher education sector by increasing competition and accountability. Funding for teaching and research is to be separated and incentives for efficiency built into the mechanisms.

27. These will combine the functions of the University Funding Council and the Polytechnics and Colleges Funding Council.

28. This development may encourage greater specialisation among higher education institutions – a small number of universities will specialise in research and teaching graduates while the rest of the institutions will concentrate on teaching undergraduates – and further reduce unit costs and increase productivity. Unit costs have fallen and productivity has increased since the new funding regime was introduced in 1990/91. By contrast, (real) unit costs rose and productivity growth was slow over the 1980s as a whole. These results are reported in Cave, M., R. Dodsworth and D. Thompson, 1992.

29. *Ibid.* p. 93.

30. Jones, I., 1988, pp. 65-66.

31. Survey evidence on school pupils' motivations is discussed in P. Brown, 1991.

32. Perhaps school performance-related access to a YT programme leading to level III and IV qualifications could be such a motivator. However, this might act to reduce staying on rates and displace other forms of education and training. See I. Jones, *op. cit.*, 1988.

33. A poverty trap exists when a low-income earner is unable to increase his income significantly by working more because of the high rate at which state assistance would be withdrawn. In a benefit trap, the individual has little incentive to take a job for the same reason. Marginal income tax rates, including the effects of benefit withdrawal, typically remained over 80 per cent in 1989 for those who earned less than half of average male earnings. See Bowen, A., and K. Mayhew, 1990.

34. These included Job clubs and Restart, which are aimed at increasing motivation and job search skills, the reintegration of Unemployment Benefit Offices and Job centres, and training measures directed at school leavers and unemployed adults.

35. See Layard, R., S. Nickell and R. Jackman, 1991.

36. All claimants who fail to find work within thirteen weeks undergo a compulsory interview to review their "Back to Work" plan, and from twenty-six weeks onwards all unemployment benefit claimants are subject to compulsory Restart interviews at six-monthly intervals.

37. Tax expenditure will improve efficiency if non-market barriers to concluding profit-related pay deals can be identified and overcome through such measures in a cost-effective way; or if there is a macroeconomic externality associated with such measures, *e.g.* through increasing the sensitivity of wages to general economic conditions, thereby helping the labour market to adjust more rapidly.

38. It is thus not clear that efficiency will be improved by discouraging workers from entering into such binding employment relationships. This comment is based on the "deferred compensation model" developed in G. S. Becker and G. J. Stigler (1974).

39. An effective tax rate is a summary measure, which takes into account not only the statutory corporate tax rate, but also other aspects of the tax system which determine the amount of tax paid and profitability of investment, such as allowable depreciation rates and stock relief.

40. Mortgage interest is tax-deductible up to a mortgage ceiling, but imputed rentals and capital gains are not taxed.

41. Rebates of up to 80 per cent of the charge were available for those on very low incomes.

42. This tax will be based on the capital value of residential property, under a (central government determined) capital banding system (specifying the relationship between rates on properties within the different capital value bands).

43. District health authorities are now responsible for assessing local health needs and arranging contracts with providers of services to ensure that these needs are met within available resources. Purchasers will eventually be free to contract with the providers of their choice. The resulting competitive pressure within the NHS is expected to put downward pressure on cost and improve quality.

44. According to the Health Secretary, existing trust hospitals treated 8 per cent more patients in their first year of operation than in the year before. *The Times,* 19 August 1992, p. 31.

45. *Ibid,* editorial.

46. To enable local authorities and contractors to cope with the volume of activities concerned, implementation of this list is being staggered and these services will not be fully put out to tender until January 1994.

47. *Measures to promote the flexible operation of United Kingdom markets,* HM Treasury, 1992, p. 4.

48. *Ibid,* p. 5.

49. The complexity of these problems raise a number of issues. However, increasing the motivation of low-achieving children at school and providing a wide range of training options leading to recognised NVQ III or IV qualifications are likely to be important aspects of any solution.

50. The dominance of council housing in the rental sector, combined with the preference given to local residents by local authorities in allocating tenancies, discourages worker mobility. In addition, the private rental market remains small. Measures to separate housing assistance from the area in which it is received and to reduce tax incentives for owner-occupied homes (especially when the housing market stabilises) would help labour market mobility; they would also promote efficiency by enabling savings to flow into other investments with higher pre-tax rates of return.

51. An extension of VAT could also finance phased benefit withdrawal, thereby reducing very high effective marginal income tax rates for those on low incomes. It would also conform with the EC's guidelines for tax harmonisation.

52. Notable exceptions are the United Kingdom's efforts and results in eliminating CFCs and maintaining high inland water quality.

53. See "This Common Inheritance", *Britain's Environmental Strategy,* CM 1200 London, HMSO September 1990, "This Common Inheritance", *The First Year Report,* CM 1655, HMSO September 1991, and "This Common Inheritance", *The Second Year Report,* CM 2068, HMSO October 1992. The latter two reports give a list of actions taken or in progress *vis-à-vis* earlier commitments on a department by department basis – to increase the accountability of environmental commitments.

54. In 1990, major environmental organisations reported membership of approximately 4 million persons in the United Kingdom. In May 1991, the Departments of Environment and Trade and Industry formed an Advisory Committee on Business and the Environment. It submitted its first *Progress Report* in October 1991, with 35 recommendations aimed at both government and business.

55. The U.K. government has declared in "This Common Inheritance", *Second Year Report 1992,* that in future there will be a general presumption in favour of economic instruments.

56. One practical manifestation of this commitment was the publication in September 1991 of a guide to "Policy Appraisal and the Environment".

57. These cover direct costs only, and include, for example, equipment for water and effluent treatment, waste management and air quality control. If dynamic effects of the crowding-out of fixed investment by environmental expenditures are taken into account, the total social cost of compliance, before allowing for the direct resource and other welfare benefits arising from environment protection policies, would be much higher. See the *OECD Survey of the United States, 1990/91* for some estimates for the United States.

58. Growing domestic and international sensitivity concerning environmental protection has led to increasing efforts to assess and monitor the state of the environment. Pressures are also growing for performance indicators to monitor how governments are implementing their policies and international commitments. There is not yet a consensus concerning the best indicators. Development of environmental statistics is at an early stage in most OECD countries. Pearce, D. presents a range of estimates of environmental damage in developed and developing countries in "Toward the Sustainable Economy: Environment and Economics", *The Royal Bank of Scotland Review,* pp. 6-7, December 1991.

59. But, even these data can differ depending on monitoring techniques. For example, water quality estimates may vary with the frequency of sampling, while NO_x emissions will vary widely depending on conditions at the time of combustion.

60. The main gases concerned are CO_2, methane (CH_4) and chlorofluorocarbons (CFCs). CO_2, CFCs and CH_4 are responsible for about 86 per cent of potential global warming.

61. This declining trend, reflected *inter alia,* the reduced share of energy-intensive heavy industry, a declining share of coal in total energy use, and the coming on stream of large nuclear energy capacity in the 1970s. Sources of U.K. CO_2 emissions in 1990, were coal (41 per cent), gas (19 per cent) and motor spirit (13 per cent). Total CO_2 per unit of GDP decreased

by 25 per cent between 1980 and 1990. See, the *Digest of Environmental Protection and Water Statistics,* HMSO No. 14, 1991.

62. In 1990, emissions were about 23 per cent lower than in 1980, albeit rising by over 50 000 tons from their 1989 levels due to higher emissions from power stations. EC directives set limits for SO_2, NO_x and dust for new large combustion plants and phased reductions in SO_2 and NO_x emissions from existing installations. Emissions from large combustion plants fell sharply between 1980 and 1983, but have stabilised at a little above the 1993 target in recent years. See, *Digest of Environmental Protection and Water Statistics,* DOE, HMSO No. 14, 1991, p. 4.

63. SO_2 contributes to local and urban air pollution, and to the phenomenon of "acid rain". Between 1980 and 1990, the contribution coming from coal combustion rose from 65 to 75 per cent, while that from fuel oil fell from 28 to 19 per cent. "Critical loads" – the rates of deposition in excess of which damage is caused to ecosystems – have been identified for both soils and freshwaters. Maps have been prepared showing how these critical loads vary across the country, principally because of geological variations, how they compare with the current pattern of depositions, and calculated regions of excess depositions in 2005, based on existing abatement policies.

64. The rise in NO_x emissions is dominated by the road transport sector: accounting for 51 per cent of the total in 1990, compared with 34 per cent in 1980. Emissions from power stations fell from 38 to 28 per cent of the total over the same period, reflecting the shift away from coal. In 1990, emissions were 12 per cent below 1980 levels for such plants. To meet future EC targets, twelve major coal-fired power plants (representing 73 per cent of coal fire capacity) will be fitted with low-nitrogen oxide burners. Reductions in the NO_x content of new car exhausts will rely on the use of catalytic converters.

65. VOCs consist of a large number of compounds including hydrocarbons and oxygenated and halogenated organics that are released from a variety of sources, including certain industrial processes, transport, solvent usage and natural sources. The United Kingdom is a signatory to the UN ECE VOCs Protocol which, among other things commits it to secure 30 per cent reductions in 1990 emission by 1994. Carbon monoxide is derived from the incomplete combustion of fuel, mainly from road transport.

66. Road transport accounts for 90 per cent of all CO_2 emissions with motor spirits representing the quasi-totality.

67. In 1986, unleaded petrol was introduced in the United Kingdom. The government increased the duty differential between leaded and unleaded petrol from 16p to 18.4p per gallon in March 1991, and the share of unleaded petrol rose from under 3 per cent of total deliveries in November 1988 to 48 per cent in September 1991. Since 1989, new car models have been required to be able to run on unleaded petrol. Estimated emissions of lead from petrol-engined road vehicles have fallen from a peak of some 8.4 thousand tons in 1976 to some 2.2 thousand tons in 1990.

68. It is reported that more than 20 per cent of the water pumped into the distribution system is lost through leakages. Metering for household use is not widely practised and consumption has been on a steadily upward trend. In contrast, metered water mainly supplied to non-domestic users fell from 1980 to 1983 but rose slightly in 1990.

69. Consents for discharges to watercourses are granted by the National River Authority (NRA) and consents for discharges into sewers by the water service companies. Recently the NRA has introduced a relatively low industrial effluent charge limited to the recovery of NRA's monitoring costs. From April 1991, water discharges from processes with the most potential to cause pollution have progressively come under the control of HMIP under the policy of Integrated Pollution Control. Farms as a source of water pollution are difficult to control. Silage is up to 200 times as strong as untreated sewage and cattle slurry 100 times as strong. These sources of farm pollution, as well as run-off from intensive use of nitrate fertilisers in agriculture (encouraged by price supports under the Common Agricultural Policy) are major areas of concern. Runoffs from sewage works, discharges from industrial processes, acid deposition, leaching from land fill waste sites and pesticides into groundwater and spillages can also add to water pollution.

70. In 1990, 8 per cent of sewage treatment works tested were found not to comply with standards. This figure compares with 23 per cent in 1986.

71. Many of these outfalls are too short to provide adequate dispersal of sewage and do not have pre-screening of effluents. Stormwater overflows are a particular problem as they spill directly over beaches, leading to high concentrations of pollution. Older shorter outfalls will be replaced with long sea outfalls. In 1990, the government announced it would also rely more heavily on primary and secondary treatment in coastal sewage discharge schemes. An investment programme of £1.4 billion was announced in 1989, with the aim of bringing 95 per cent of identified bathing waters into compliance by the mid-1990s and full compliance with EC directives within ten years. In 1990, the investment programme was expanded and accelerated, and includes treatment of discharges. Other, albeit less serious sources of pollution include farm run-off, bird colonies, caravan sites, marinas, harbours and waste management sites.

72. Reducing compliance costs through tradeable permits can be illustrated by a numerical example. Assume that electricity plants A and B, have marginal costs in reducing SO_2 emissions by 1 ton of £150 and £250 respectively. If regulations require both plants to reduce SO_2 emissions by 1 ton each, this will cost £400. But, if trading in SO_2 emissions existed, plant B would buy the right to emit 1 ton of SO_2 at the price of £150, while plant A would reduce emissions by 2 tons at a total cost of £300 – reducing overall compliance costs to society by £100. Hence identical standards can be achieved at lower costs and these savings will be greater the wider the dispersion of marginal costs. For a discussion of U.S. experience with tradeable permits , see the *OECD Survey of the United States,* November 1991. Detailed examination of the possible use of such measures in the U.K. context are contained in "The Potential Role of Market Mechanisms in the Control of Acid Rain" by *London Economics,* published in 1992 by HMSO, Department of Environment Economics Research Series.

73. For a survey of this approach, see *"Economic Instruments for Environmental Protection",* OECD 1989. This survey showed the U.K. applying charges for noise levels, user charges, administrative charges and tax differentiation, in 1988-89.

74. Measures include an enhanced system for licensing waste disposal and recovery operations. This will impose long-term responsibility on operators for any environmental problems which may arise from landfill sites after closure. They will also require operators to be fit and proper persons, include charging for licences to cover the costs of regulations, and will be

accompanied by updated guidance to regulatory authorities calling for tighter standards. The new controls and standards are already exerting upward pressure on landfill prices. Other U.K. measures will affect incineration prices.

75. See the Environmental Protection (Waste Recycling Payments) Regulations 12 March 1992.

76. In the past, the pricing formulae adopted encouraged regulated firms to maximise sales and output in a least-cost framework, so as to maximise profits. The latest formula for the gas industry has been modified, and consultation is in progress with a view to changes for the electricity industry.

77. The intention is that registration to the scheme would convey market advantage by re-assuring customers, suppliers, employees and the public at large that environmental impacts at the site are well managed.

78. The aim in providing consumers with better information on the environmental impact of products will be to convey a market advantage to those manufactures and retailers who make and stock products which have a reduced environmental impact.

79. This decision, in large part, reflects the high weight (some 10 per cent) of heating in low income household budgets. In addition, investment in energy savings, such as insulation, may be insensitive to price signals, due to a reluctance to invest under the present leaseholding system.

80. The fossil fuel levy raises the price per kilowatt hour paid by households by about half a Penny per kilowatt hour to 6p, raising about £1 billion a year. Abolition of the fossil fuel levy and financing nuclear power through general taxation could thus partly offset the effects on income distribution of extending VAT to household energy use, which would be equivalent to about £1.5 billion a year.

81. OFWAT issued a consultative document on charging for water in 1991 and the regional water companies are currently considering their future plans (Anglian has announced its intention to introduce metering).

82. In the past, fuel substitution in power generation was restricted by the cross-subsidisation of coal purchases from British Coal and until recently an EC directive prohibiting the use of natural gas for power generation. The EC ban has been removed.

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Annex I

Present institutional arrangements

Pollution control in the United Kingdom has developed in a piecemeal manner in response to specific problems. During the nineteenth century, increasing concern about the quality of air led to a series of measures to tackle particular problems ranging from the smoke from railway engines and factories to alkalis and culminated in the Public Health Act 1875 which contained a smoke abatement section which forms the basis for current legislation. Later responses to such problems as smog and black smoke, led to the extension of controls (notably the Clean Air Act 1956). Water pollution controls have been applied since the mid-nineteenth century; they have been successively extended and refined since then, with particular attention focusing on water pollution, and on the statutory standards for drinking water quality, when the water industry was privatised in 1989.

Currently, the DOE has general responsibility, in consultation with other Departments, for overseeing the implementation of regulatory standards under the Environmental Protection Act 1990. Within the DOE, H.M. Inspectorate of Pollution (HMIP) is responsible for regulating industrial processes or plant with the greatest pollution potential, and implementing the system of Integrated Pollution Control (IPC), which covers some 5000 major industrial plants in England and Wales. IPC is a holistic approach to pollution control[1]. Operators are required to use "best available techniques not entailing excessive cost" (BATNEEC) to prevent or minimise pollution, and where pollution of more than one medium is likely, to adopt the best practicable environmental option[2]. In addition, HMIP regulates the disposal of radioactive waste and oversees local authorities waste disposal facilities (the latter are being phased out as part of a programme of privatisation and obligatory joint ventures). As regards drinking water in England and Wales, the Drinking Water Inspectorate, monitors quality supplied by water companies in compliance with the Water Supply Regulations 1989. (Similar arrangements are in place in Scotland).

The DOE also sponsors the National River Authority (NRA). The NRA has wide ranging responsibilities for protecting and improving water quality. It controls effluent discharges not falling within HMIP's control, as well as from water and sewage companies and other dischargers. The NRA also has competence for defence against flooding, water resources management, fisheries, conservation, recreation and navigation. In addition, local government has a wide range of environmental protection responsibilities.

These include the new air pollution control system and litter controls established under the Environmental Protection Act 1990, regulation of waste disposal and the movement of hazardous waste, and enforcement against statutory nuisances including noise.

In practice, national standards derived from BATNEEC (and EC directives) provide strict limits on acceptable emission levels. These are then applied in the field, on a case by case basis, within the framework of "integrated pollution control". However, the lack of a central focus between the various agencies can lead to gaps, overlaps and potential conflicts between the regulatory agencies. This has led the government to announce the creation of a new independent Environment Agency for England and Wales. The main advantage of this approach would be "the prospect of integrating pollution control in an evolutionary way whilst seeking from the outset to co-ordinate the work of the existing bodies"[3].

Notes

1. Integrated pollution control adopts a cross-media approach to environmental protection, based on the total releases to air, water and land. In so doing, it ensures that one problem is not solved at the expense of another. See *"This Common Inheritance"* The First Year Report, 1991, pp. 88-90.
2. New plant is required to meet standards derived from the best available techniques not entailing excessive cost to be found elsewhere in the world. For older plant, consultation with industry will result in separate process-specific guidance notes, with specific time tables to bring individual plants up to the highest standards.
3. See, *"Improving Environmental Quality"*, The Government's Proposals For A New, Independent Environment Agency, Department of the Environment, October 1991.

Annex II

Calendar of main economic events

1991

February

The base rate is cut twice by ½ per cent, reducing it to 13 per cent.

The public expenditure White Paper is replaced by the publication of a supplement to the 1990 Autumn Statement and 19 Departmental Annual Reports.

March

The March budget sets the PSBR for FY 1991/92 at £7.9 billion, compared with an outcome of £0.5 billion in FY 1990/91. The budget includes measures to reduce the headline community charge *per capita* by £140, with the reduction being funded by an increase in the standard rate of VAT from 15 to 17.5 per cent. Other measures include: an increase in child benefit and plans to index it, as well as personal and age-related allowances; restrictions on mortgage interest tax relief to the basic income tax rate; a reduction in employers' national insurance contribution rates but a broadening of the tax base for employers' contributions to include the benefits in kind from company cars; a cut in the corporate income tax rate from to 35 per cent to 33 per cent in 1991/92, with the rate for 1990/91 being reduced retrospectively to 34 per cent; and an extension of the loss relief regime for companies, allowing them to carry back trading losses against tax liability on any income from the previous three years.

The base rate is cut by ½ per cent to 12 ½ per cent.

April

The base rate is cut by ½ per cent to 12 per cent.

May

The government announces consultations on proposals to replace the community charge by a council tax from April 1993, consisting of a property tax with seven valuation bands, with a discount for people living alone.

The base rate is cut by ½ per cent to 11½ per cent.

July

The Citizens' charter is published by the Government. It includes privatisation of British Rail and London buses, and improvement of public services.

The base rate is cut by ½ per cent to 11 per cent.

September

The base rate is cut by ½ per cent to 10 ½ per cent.

November

The PSBR for FY 1991/92 is revised up to £10 ½ billion in the 1991 Autumn Statement. General government expenditure (excluding privatisation proceeds) is to be £6.4 billion higher in 1992/93 and £12.7 billion higher in 1993/94 than in previous plans. The main increases are for social security, health, support for the state-owned transport industries and additional funding for current spending by local authorities.

December

The Maastricht treaty on political and economic union in the European Community is signed. The U.K. does not participate in the social policy agreement and is able to defer its decision on participation in European monetary union (EMU).

1992

March

The 1992 Budget forecasts a FY 1992/93 PSBR of £28.1 billion, compared with the £13.8 billion outcome in FY 1991/92. The income tax rate on the first £2000 of taxable income is reduced to 20 per cent, the car tax is halved and transitional relief is given for business rates. It is also announced that from December 1993, the government will make one Budget Statement to Parliament a year, covering tax plans for the coming year and spending plans for the coming three years. This will replace the March Budget and the Autumn Statement.

April

The Government is re-elected in the general election.

May

The base rate is cut by ½ per cent to 10 per cent.

July

The Government announces a new medium-term control framework for public expenditure. The global public expenditure limit set by the Public Expenditure Cabinet is to be considered binding, with bilateral discussions between Treasury and spending departments only to concern the allocation of these resources, rather than the total. The public expenditure limit for FY 1993/94 is held at £245.5 billion and growth in non-cyclical and non-interest expenditure is to be restricted to 3 per cent and 3.25 per cent respectively in 1994/95 and 1995/96.

September

A run on sterling develops in the run-up to the French referendum on the Maastricht Treaty. The base lending-rate is increased by 2 per cent to 12 per cent on the morning of 16 September. A further increase in the base rate to 15 per cent is announced on the same day. These increases fail to stem selling pressure on sterling and its participation in the ERM is suspended later that day. Base rates are restored to 10 per cent the following morning.

The base rate is cut by 1 per cent to 9 per cent.

October

The Chancellor of the Exchequer announces a framework for conducting monetary policy outside the ERM. Monetary policy is to target a short-run underlying inflation rate (RPI excluding mortgage rates) of 1 to 4 per cent, with an ultimate objective of attaining price stability, defined as inflation less than 2 per cent. Monetary conditions are to be assessed with reference to a wide range of indicators. The Chancellor also announces that the government intends to rejoin the ERM when conditions are appropriate but that this is unlikely to be soon.

Plans to close a substantial proportion of coal mines are announced, but the timing and magnitude of these closures are subsequently subject to review.

The base rate is cut by 1 per cent to 8 per cent.

November

The November 1992 Autumn Statement contained medium-term public expenditure plans and a number of measures to assist recovery. Measures included:

- first-year capital allowances for investment were temporarily increased for the next year from 25 per cent to 40 per cent;
- the remaining 5 per cent car tax was abolished;
- local authorities will be allowed to spend receipts from council house sales between now and the end of next year on capital projects (estimated at £1.75 billion);

- Housing associations will spend £750 million by the end of this financial year to buy repossessed empty houses, while increasing the stock of subsidised houses available to low income families;
- provision of an additional £700 million of export credit cover;
- measures were announced to encourage private-sector participation in public sector infrastructure projects as well as to enhance the use of leasing arrangements by public companies.

The planning total for general government expenditure in FY 1993/94 was held at £244.5 billion, with savings from limiting public sector pay increases to 1.5 per cent over the coming year and reductions in such areas as defence, offsetting increases elsewhere (health, education, social security and training programmes). The PSBR is now forecast at £37 billion, 6¼ per cent of GDP in FY 1992/93, up from the £28 billion in the March 1992 Budget. (Excluding privatisation proceeds the PSBR is projected at £45 billion, 7 1/2 per cent of GDP.)

The new control totals announced for 1994/95 and 1995/96 of £253.6 and £263.3 billion respectively would imply real growth in government expenditure of 0.7 per cent in 1994/95 and 1.0 per cent in 1995/96 following 2.3 per cent real growth in 1993/94, given the government's inflation assumptions of around 3 per cent for the GDP deflator over this period.

The base lending rate was lowered to 7 per cent accompanying the Autumn Statement.

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STATISTICAL AND STRUCTURAL ANNEX

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Table A. **Expenditure on GDP**

£ million

	GDP at factor cost (expenditure-based)	Total expenditure at market prices	Total domestic demand	Consumers' expenditure	Public current expenditure	Fixed investment	Change in stocks	Exports of goods and services	Imports of goods and services	Indirect taxes less subsidies
At current prices										
1982	238 925	347 343	274 649	170 650	60 363	44 824	–1 188	72 694	67 762	40 656
1983	262 191	382 951	302 895	187 028	65 787	48 615	1 465	80 056	77 529	43 231
1984	280 428	418 136	326 284	200 261	69 760	54 967	1 296	91 852	92 669	45 039
1985	307 901	456 134	353 926	218 947	73 805	60 353	821	102 208	98 866	49 367
1986	328 130	485 960	387 641	243 030	79 381	64 514	716	98 319	101 070	56 760
1987	360 599	535 368	428 337	267 523	85 349	74 077	1 388	107 031	111 868	62 901
1988	401 127	596 130	488 425	302 057	91 729	89 857	4 782	107 705	124 788	70 215
1989	441 136	658 010	535 961	330 532	99 029	103 262	3 138	122 049	142 693	74 181
1990	479 729	698 355	564 855	350 411	109 878	106 028	–1 462	133 500	147 728	70 898
1991	497 446	715 006	579 891	367 853	121 899	95 442	–5 303	135 115	140 415	77 145
At 1985 prices										
1982	280 553	408 084	319 286	197 980	71 672	50 915	–1 281	88 798	82 348	45 183
1983	291 379	425 443	334 854	206 932	73 089	53 476	1 357	90 589	87 709	46 355
1984	295 653	440 394	343 869	210 959	73 792	58 034	1 084	96 525	96 394	48 347
1985	307 901	456 134	353 926	218 947	73 805	60 353	821	102 208	98 866	49 367
1986	319 730	477 704	370 652	232 996	75 106	61 813	737	107 052	105 662	52 312
1987	334 407	503 862	390 768	245 823	76 034	67 753	1 158	113 094	113 916	55 539
1988	349 404	534 976	421 987	264 096	76 486	77 395	4 010	112 989	127 845	57 727
1989	356 698	553 011	435 755	272 917	77 184	82 997	2 657	117 256	137 281	59 032
1990	359 187	556 836	433 787	274 744	79 689	80 464	–1 110	123 049	138 720	58 929
1991	350 617	543 307	419 921	269 033	81 933	72 462	–3 507	123 386	134 428	58 262
Seasonally adjusted										
1991 2	87 436	135 515	104 534	67 097	20 772	18 160	–1 495	30 981	33 567	14 512
3	87 598	136 002	104 797	67 043	20 621	18 039	–906	31 205	33 797	14 607
4	87 407	136 091	104 867	67 024	20 436	17 878	–471	31 224	33 984	14 700
1992 1	87 032	136 258	104 938	66 763	20 435	17 956	–216	31 320	34 980	14 246
2	86 941	136 911	105 147	67 121	20 661	17 532	–167	31 764	35 783	14 187

Source: Central Statistical Office, *Economic Trends.*

Table B. **Gross domestic fixed capital formation**

£ million

	Total	Private sector[1]	General government[1]	Public corporations[1]	Vehicles, ships and aircraft	Plant and machinery	Dwellings		Other new building and works[2]	Energy and water supply	Manufacturing
							Private	Public			
At current prices											
1982	44 824	33 073	4 437	7 314	4 285	16 296	6 850	2 070	15 323	6 829	6 417
1983	48 615	34 681	5 869	8 065	4 530	17 935	7 757	2 690	15 703	7 037	6 714
1984	54 967	40 807	6 719	7 441	5 664	20 266	8 972	2 746	17 319	6 770	8 321
1985	60 353	47 550	6 872	5 931	6 439	23 870	9 318	2 536	18 190	6 793	10 118
1986	64 514	51 457	7 509	5 548	6 222	24 690	11 008	2 614	19 980	6 802	9 731
1987	74 077	61 891	7 577	4 609	7 805	27 073	12 358	2 916	23 925	6 247	10 814
1988	89 857	78 732	6 506	4 619	8 849	31 504	16 440	2 914	30 150	6 782	12 281
1989	103 262	88 167	9 582	5 513	10 324	36 382	17 140	3 846	35 570	7 962	14 281
1990	106 028	88 384	12 659	4 985	9 969	37 162	15 679	4 227	38 991	9 624	14 328
1991	95 442	79 341	12 173	3 928	8 452	33 816	13 806	2 839	36 529	11 915	12 678
At 1985 prices											
1982	50 915	38 556	4 440	8 115	5 028	18 478	8 680	2 282	16 378	7 552	7 482
1983	53 476	38 724	6 069	8 683	5 177	19 401	9 323	2 924	16 651	7 521	7 410
1984	58 034	43 419	6 843	7 772	6 101	21 227	9 725	2 825	18 156	7 039	8 823
1985	60 353	47 550	6 872	5 931	6 439	23 870	9 318	2 536	18 190	6 793	10 118
1986	61 813	48 937	7 460	5 416	5 769	24 250	10 365	2 536	18 893	6 591	9 423
1987	67 753	55 807	7 470	4 476	6 648	25 943	10 734	2 741	21 687	5 903	10 048
1988	77 395	66 361	6 649	4 385	7 113	29 855	12 999	2 549	24 879	6 037	11 198
1989	82 997	70 046	8 292	4 659	7 777	33 591	12 290	3 006	26 333	6 513	12 395
1990	80 464	66 647	9 834	3 983	7 022	32 739	10 506	3 088	27 109	7 413	11 759
1991	72 462	59 701	9 546	3 215	5 684	29 361	8 942	2 078	26 397	9 271	10 347
Seasonally adjusted											
1991 2	18 160	15 015	2 327	818	1 527	7 322	2 112	530	6 669	2 305	2 561
3	18 039	14 726	2 562	751	1 204	7 336	2 302	506	6 691	2 359	2 559
4	17 878	14 632	2 518	728	1 587	7 167	2 258	513	6 353	2 570	2 569
1992 1	17 956	14 484	2 602	870	1 436	7 414	2 222	479	6 405	2 310	2 449
2	17 532	14 502	2 288	742	1 492	7 319	1 889	501	6 331	2 707	2 529

1. Including purchases less sales of land and existing buildings.
2. Including transfer costs of land and buildings.

Source: Central Statistical Office, *Economic Trends.*

Table C. **Household appropriation account**

£ billion

	Compensation of employees	Property and income	Transfers received	Gross total income	Direct taxes	Social security contributions	Other current deductions[1]	Disposable income	Private consumption	Personal savings ratio[2]	Real income[3]
1981	149.7	42.8	31.2	223.8	28.9	15.9	1.2	177.7	155.4	12.6	–0.8
1982	158.8	47.7	36.6	243.1	31.4	18.1	1.4	192.3	170.7	11.2	–0.5
1983	169.8	52.6	39.9	262.3	33.2	20.8	1.4	206.9	187.0	9.6	2.6
1984	181.4	59.0	43.0	283.5	34.7	22.3	1.5	224.9	200.3	11.0	3.5
1985	196.9	64.8	46.8	308.5	37.8	24.2	1.7	244.8	218.9	10.6	3.3
1986	212.4	71.3	51.0	334.7	40.8	26.2	1.9	265.8	243.0	8.6	4.1
1987	229.8	78.9	52.5	361.3	43.4	28.6	2.1	287.1	267.5	6.8	3.5
1988	255.6	92.9	54.1	402.6	48.3	32.1	2.3	319.9	302.1	5.6	6.0
1989	282.9	103.9	56.8	443.6	53.6	32.9	3.0	354.1	330.5	6.6	4.5
1990	311.7	115.7	62.0	489.5	61.5	34.7	11.2	382.1	350.4	8.3	2.5
1991	329.8	117.2	71.8	518.7	63.7	36.6	10.7	407.6	367.9	9.8	–0.5
Seasonally adjusted											
1991 2	82.1	29.1	17.6	128.8	16.3	9.2	2.4	100.9	91.3	9.6	0.0
3	82.9	29.3	18.4	130.7	16.0	8.9	2.4	103.4	92.8	10.3	–0.8
4	83.7	29.7	18.9	132.2	15.8	9.1	2.4	104.8	94.1	10.3	–0.9
1992 1	85.4	31.3	19.7	136.4	17.6	9.9	2.4	106.5	94.8	11.0	0.7
2	85.3	31.0	20.2	136.6	16.9	9.6	2.7	107.4	96.3	10.3	0.8

1. This series includes other current transfers and from 2nd quarter 1989, payments of the community charge.
2. As a percentage of disposable income.
3. Percentage change.

Source: Central Statistical Office, *Economic Trends.*

Table D. **Consumption and investment**

Seasonally adjusted

	Consumer demand				Investment					
	Retail sales		New car registrations	Changes in hire purchase debt total	Capital expenditure of		Engineering new domestic orders[1]	Housing starts		Investment in stocks (manufacturing)
	Total	Non-food			Manufacturing industry	Other industries		Private	Public	
	Volume 1985=100		Thousand, monthly averages	£ million, end of period	£ million at 1985 prices		Average monthly sales 1985=100	Thousand		£ million at 1985 prices
1981	86.4	82.5	125	582	7 672	–	92	117.3	37.5	–1 989
1982	88.0	84.2	132	1 118	7 482	–	90	140.8	53.1	–1 461
1983	92.2	89.7	151	1 620	7 410	23 525	92	172.4	48.7	135
1984	95.6	94.7	147	1 551	8 823	26 647	99	158.3	40.2	1 057
1985	100.0	100.0	154	2 309	10 118	28 616	100	165.5	34.2	–443
1986	105.2	107.0	157	2 385	9 423	29 830	106	180.0	33.4	–403
1987	110.7	114.6	168	3 498	10 048	35 040	105	196.8	32.9	–221
1988	117.7	124.3	184	3 639	11 198	41 016	116	221.2	31.0	887
1989	119.8	126.7	192	2 910	12 395	46 205	123	170.1	30.8	–22
1990	120.4	126.4	167	3 050	11 759	45 361	112	135.2	27.0	–1 495
1991	119.5	123.8	133	369	10 347	39 576	99	135.0	25.6	–2 782
1991 2	118.6	122.6	124	312	2 561	10 088	99	34.3	5.9	–743
3	119.7	123.6	140	26	2 559	9 741	104	35.2	6.4	–355
4	119.6	123.9	129	–304	2 569	9 443	101	33.6	6.4	–1 030
1992 1	119.6	123.6	123	–120	2 449	10 013	96	32.3	9.3	–696
2	120.0	123.9	130	–210	2 529	9 445	94	31.3	8.5	22

1. Received by mechanical, instrument and electrical engineering, excluding transport equipment.

Source: Central Statistical Office, *Economic Trends* and *Monthly Digest of Statistics*.

Table E. **Production and manpower**

Seasonally adjusted

		GDP compromise estimate[1]	GDP per person employed	Industrial production	Manufacturing production	Unemployed[3]	Unfilled vacancies (adults)	Total employment	Employment in manufacturing industries	Hours of overtime worked in manufacturing industries
		1985=100				Thousand		1985=100		Million per week
1981		89.3	89.6	89.7	90.6	2 270	91	98.9	114.4	9.37
1982		90.8	93.2	91.4	90.8	2 626	114	97.0	107.5	9.93
1983		94.2	96.8	94.7	93.8	2 866	137	96.8	102.1	10.19
1984		96.2	97.7	94.8	97.4	2 998	150	98.9	100.6	11.39
1985		100.0	100.0	100.0	100.0	3 113	162	100.0	100.0	11.98
1986		103.9	103.3	102.5	101.3	3 180	189	100.3	97.9	11.72
1987		108.6	106.0	105.8	106.6	2 822	235	102.6	97.0	12.63
1988		113.5	107.4	109.5	114.1	2 274	249	106.0	98.2	13.42
1989		115.9	107.2	109.9	118.9	1 784	220	108.9	98.5	13.44
1990		116.6	107.4	109.3	118.4	1 663	174	109.2	97.2	12.44
1991		113.8	108.0	106.1	112.2	2 287	119	105.7	91.7	9.86
1991	2	113.5	107.4	105.2	112.4	2 231	112	106.0	92.3	9.75
	3	113.7	108.4	106.2	112.3	2 414	108	105.2	90.6	10.02
	4	113.4	109.1	106.1	110.8	2 515	114	104.2	89.5	9.52
1992	1	113.0	108.9	105.3	111.0	2 635	120	104.1	88.5	9.92
	2	112.8	109.5	105.0	111.5	2 712	115	103.3	87.9	10.58

1. Average of expenditure,income and output data.
2. Based on output-based GDP.
3. Claimants aged 18 and over.

Source: Central Statistical Office, *Economic Trends,* and Department of Employment, *Employment Gazette.*

Table F. **Wages, prices and external position**

Seasonally adjusted

	Average earnings[1]	Producer prices manufacturing, home market*	Retail prices*	Exports	Imports	Exports (fob)	Imports (fob)	Visible trade	Current balance
				Unit values*					
	1988 = 100	1985 = 100				£ million			
1981	57.9	79.1	79.1	76.2	73.7	50 668	47 416	3 252	6 748
1982	63.4	85.2	85.9	81.4	79.9	55 331	53 421	1 910	4 649
1983	68.7	89.8	89.8	88.0	87.4	60 700	62 237	–1 537	3 765
1984	72.9	95.0	94.3	95.0	95.3	70 265	75 601	–5 336	1 798
1985	79.1	100.0	100.0	100.0	100.0	77 991	81 336	–3 345	2 790
1986	85.4	104.3	103.4	90.2	95.4	72 627	82 186	–9 559	66
1987	91.9	108.3	107.7	93.5	98.0	79 153	90 735	–11 582	–4 482
1988	100.0	113.2	113.0	93.3	96.9	80 346	101 826	–21 480	–16 179
1989	109.1	119.0	121.8	100.8	104.1	92 154	116 837	–24 683	–21 726
1990	119.7	126.0	133.3	106.2	108.0	101 718	120 527	–18 809	–17 029
1991	129.3	133.1	141.1	106.4	108.4	103 413	113 703	–10 290	–6 321
1991 2	128.1	133.1	141.2	105.9	107.8	25 926	28 160	–2 234	–456
3	130.8	133.9	141.8	107.4	109.6	26 377	28 762	–2 385	–1 297
4	132.4	134.6	143.2	107.1	109.9	26 227	28 858	–2 631	–1 712
1992 1	135.8	136.5	144.0	107.0	107.6	26 125	29 175	–3 050	–2 882
2	136.1	137.9	147.1	108.3	107.3	26 693	29 881	–3 188	–2 853

* Not seasonally adjusted.

1. From 1988 onwards, data are 1988=100; the pre-1988 data have been estimated from previous 1985=100 figures.

Source: Central Statistical Office, *Economic Trends*, and Department of Employment, *Employment Gazette*.

Table G. **Net capital transactions**

Not seasonally adjusted, £ million

		Current balance	UK investment overseas			Lending overseas by UK banks			Lending overseas by UK residents other than banks and general government			Other external government transactions	Total investment and other capital transactions	Drawings on (+) or additions to (–) reserves	Allocation of SDR's and gold subscription to IMF	Balancing item
			Total	Direct	Portfolio	Total	Foreign currency	Sterling	Total	Public corporations	Non-bank private sector					
1981		6 748	–7 283	–3 073	–4 210	–659	–137	–522	–1 800	–261	–1 539	–112	–9 855	2 419	158	530
1982		4 649	–8 640	–1 064	–7 576	3 855	3 422	433	595	–234	829	247	–3 940	1 421	0	–2 130
1983		3 765	–7 680	–2 031	–5 649	2 850	1 034	1 816	725	–68	793	–1 064	–5 169	607	0	797
1984		1 798	–14 682	–6 217	–8 465	9 780	8 557	1 223	–3 637	–236	–3 401	–784	–9 322	908	0	6 616
1985		2 790	–10 924	–3 943	–6 981	7 018	4 685	2 333	2 637	295	2 342	–706	–1 975	–1 758	0	943
1986		66	–15 937	–5 841	–10 096	13 121	13 490	–369	2 903	–121	3 024	–333	–243	–2 891	0	3 070
1987		–4 482	14 908	–9 790	24 698	1 933	–2 301	4 234	–1 528	–138	–1 390	1 033	16 346	–12 012	0	152
1988		–16 179	–4 613	–8 938	4 325	14 398	5 383	9 015	2 427	–272	2 699	–55	12 157	–2 761	0	6 782
1989		–21 726	–23 831	–2 948	–20 883	16 127	6 649	9 478	19 617	–1 728	21 345	1 906	13 819	5 440	0	2 467
1990		–17 029	–1 487	9 081	–10 568	6 372	–2 448	8 820	6 392	–154	6 546	–107	11 170	–79	0	5 938
1991		–6 321	–12 497	1 784	–14 281	8 207	12 592	–4 385	15 409	–93	15 502	–3 205	7 911	–2 662	0	1 072
1991	2	–839	–2 775	–1 044	–1 731	–4 270	–3 198	–1 072	–2 879	–15	–2 864	100	–9 825	–847	0	11 511
	3	–2 220	–7 030	–787	–6 243	4 162	5 060	–898	4 727	–36	4 763	–752	1 106	152	0	962
	4	340	–1 818	2 085	–3 903	6 442	8 455	–2 013	9 992	1	9 991	–1 005	13 611	180	0	–14 131
1992	1	–3 463	–24	2 297	–2 321	–8 528	–9 488	960	3 643	–367	4 010	–253	–5 163	–315	0	8 941
	2	–3 443	–1 994	–1 600	–394	–2 615	646	–3 261	5 219	–105	5 324	392	1 003	–332	0	2 772

Source: Central Statistical Office, *Financial Statistics.*

Table H. **Foreign assets and liabilities**

Outstanding official

	Effective exchange rate	Official reserves		Sterling balances[1]		Outstanding official borrowing from abroad[2]	
		Total	*of which:* Convertible currencies	Official	Other holders	Total	*of which:* IMF
	1985=100	$ million, end of period		£ million, end of period		$ million, end of period	
1981	119.1	23 347	13 457	4 755	13 461	13 299	364
1982	113.7	16 997	9 634	5 561	17 630	12 146	57
1983	105.2	17 817	9 040	6 597	21 430	11 958	0
1984	100.5	15 694	7 577	7 755	26 825	11 283	0
1985	100.0	15 543	8 486	9 327	31 236	14 637	0
1986	91.5	21 923	13 781	9 585	37 160	19 325	0
1987	90.1	44 326	35 726	13 947	44 766	19 069	0
1988	95.5	51 685	42 184	15 953	56 949	15 751	0
1989	92.6	38 645	30 453	16 229	68 523	14 035	0
1990	91.3	38 464	30 553	18 895	83 011	14 542	0
1991	91.7	44 126	36 122	16 657	75 506	17 191	0
1991 2	91.4	44 264	36 176	17 577	80 765	16 111	0
3	90.7	44 593	36 614	16 600	78 995	16 651	0
4	90.9	44 126	36 122	16 657	75 506	17 191	0
1992 1	90.6	45 027	37 206	17 229	77 854	17 246	0
2	92.3	45 700	37 913	18 182	78 634	18 394	0

1. Exchange reserves in sterling held by central monetary institutions and international organisations.
2. The valuation of these public sector liabilities differs from that used for the official reserves. Total official debt outstanding at end-January 1991 valued on the same basis as the official reserves was $13706 million.

Source: Bank of England, *Quarterly Bulletin*, and Central Statistical Office, *Financial Statistics*.

Table I. **General government appropriation account**

£ billion

		Taxes on income	Taxes on expenditure	Social security contributions	Property and entrepreneurial income [1]	Total current receipts	Final consumption	Subsidies	Debt interest	Current interest [2]	Total current expenditure	Current surplus	Gross capital formation	Net capital transfers [3]	Net lending	Net lending per cent of GDP
1981		36.1	42.5	15.9	11.5	106.0	55.4	6.4	12.7	32.8	107.3	–1.3	4.5	–0.9	–6.6	–2.6
1982		40.3	46.5	18.1	12.6	117.4	60.4	5.8	14.0	38.4	118.5	–1.1	4.5	–1.2	–6.7	–2.4
1983		43.3	49.5	20.8	12.3	125.9	65.8	6.3	14.2	41.8	128.1	–2.1	6.0	–1.9	–10.0	–3.3
1984		46.7	52.6	22.3	12.8	134.4	69.8	7.5	15.8	45.1	138.2	–3.8	7.0	–2.0	–12.8	–3.9
1985		51.6	56.6	24.2	14.7	147.1	73.8	7.2	17.7	50.2	149.0	–1.9	7.3	–1.1	–10.3	–2.9
1986		52.2	62.9	26.2	12.9	154.3	79.4	6.2	17.3	53.2	156.0	–1.7	7.1	–0.2	–9.1	–2.4
1987		55.7	69.1	28.6	13.3	166.7	85.3	6.2	18.0	55.8	165.3	1.4	7.1	–0.1	–5.7	–1.3
1988		61.9	76.1	32.1	13.7	183.8	91.7	5.9	18.3	57.3	173.2	10.6	6.2	0.3	4.8	1.0
1989		70.4	80.0	32.9	15.0	198.9	99.0	5.8	18.9	61.1	184.8	14.0	9.4	0.1	4.8	0.9
1990		77.0	77.0	34.7	14.9	212.1	109.9	6.1	18.8	66.6	201.3	10.8	12.8	–5.1	–7.1	–1.3
1991		75.1	83.0	36.6	14.7	217.6	121.9	5.9	17.1	72.8	217.7	–0.1	12.3	–3.3	–15.7	–2.7
Seasonally adjusted																
1991	2	19.0	21.1	9.2	3.5	54.5	30.9	1.4	4.7	17.4	54.3	0.2	3.0	–0.5	–3.3	–2.3
	3	18.6	21.4	8.9	3.7	54.5	31.0	1.5	3.9	19.3	55.7	–1.3	3.3	–0.6	–5.1	–3.5
	4	18.7	21.7	9.1	3.8	55.1	31.1	1.6	4.2	19.3	56.2	–1.1	3.2	–0.9	–5.2	–3.5
1992	1	19.6	21.3	9.9	3.9	56.4	31.6	1.8	4.3	20.8	58.5	–2.1	3.3	–0.7	–6.1	–4.1
	2	18.2	21.2	9.6	3.7	54.7	32.4	1.7	4.1	21.7	59.9	–5.1	2.9	–0.8	–8.8	–5.9

1. Includes community charge (from 2nd quarter of 1989), which is not treated as a tax on expenditure.
2. Social security , other grants to personal sector and net current grants paid abroad.
3. Taxes on capital and net grants and other transfers.

Source: Central Statistical Office, *Financial Statistics.*

Table J. **Foreign trade by area**

$ million, monthly averages

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
	Imports, cif														
OECD	3 789	4 965	6 658	7 581	6 724	6 633	6 833	7 184	7 626	8 855	10 873	13 384	13 962	15 792	14 605
of which:															
North America	716	854	1 100	1 452	1 272	1 183	1 142	1 237	1 264	1 228	1 468	1 912	2 070	2 477	2 314
OECD Europe	2 812	3 780	5 137	5 621	4 946	4 912	5 135	5 406	5 780	6 890	8 502	10 331	10 745	12 089	11 113
of which:															
EC	2 174	2 815	3 937	4 310	3 844	3 905	4 034	4 200	4 503	5 468	6 784	8 303	8 691	9 776	9 025
Central and Eastern European countries	65	32	41	48	30	29	29	30	32	42	50	57	58	64	54
Developing countries	1 446	1 539	1 853	2 365	1 794	1 628	1 465	1 535	1 486	1 565	1 820	2 231	2 350	2 698	2 702
of which:															
OPEC	528	538	580	826	603	482	331	286	277	202	207	250	265	389	366
Total	5 301	6 537	8 553	9 993	8 548	8 290	8 327	8 750	9 144	10 463	12 743	15 673	16 370	18 553	17 361
	Exportations, fob														
OECD	3 301	4 089	5 537	6 962	6 104	5 853	5 729	6 021	6 643	6 921	8 569	9 516	10 055	12 386	12 457
of which:															
North America	556	679	855	1 059	1 204	1 220	1 182	1 271	1 438	1 482	1 770	1 872	1 956	2 219	1 929
OECD Europe	2 525	3 143	4 371	5 581	4 609	4 334	4 291	4 474	4 904	5 101	6 377	7 137	7 502	9 468	9 956
of which:															
EC	1 910	2 426	3 386	4 322	3 778	3 584	3 566	3 716	4 139	4 294	5 391	6 098	6 455	8 165	8 725
Central and Eastern European countries	61	59	72	91	73	56	49	50	53	61	71	84	83	104	98
Developing countries	1 417	1 809	1 932	2 517	2 420	2 173	1 859	1 766	1 751	1 882	2 166	2 364	2 454	2 760	2 736
of which:															
OPEC	565	703	603	881	932	850	666	561	555	578	625	641	693	725	748
Total	4 779	5 957	7 542	9 571	8 597	8 082	7 636	7 837	8 446	8 864	10 806	11 964	12 592	15 250	15 291

Source: OECD, *Foreign Trade Statistics.*

Table K. **Domestic finance**

		Change in wide monetary base* M0	Change in broad money M4	General government borrowing requirement	Sterling lending to private sector by banks	Net increase in building society shares and deposits	Building society new commitments to mortgages	Government securities-calculated redemption yields[1]			Local authority deposits, 3-month rates	Comparison between local authority and Euro-dollar, 3-month rates[2]
								Short-dated	Medium-dated	Long-dated		
		£ million						% per annum			% per annum at end of period	
1981		197	15 959	11 344	17 715	3 601	11 948	14.65	14.88	14.74	15.75	0.61
1982		140	16 542	5 691	25 665	6 466	16 899	12.79	13.09	12.88	10.63	0.13
1983		249	19 661	12 004	23 035	6 839	19 354	11.19	11.27	10.80	9.31	0.10
1984		244	23 430	9 689	30 314	8 572	24 631	11.29	11.27	10.69	10.13	0.29
1985		182	25 873	8 398	34 024	7 462	27 763	11.13	11.06	10.62	11.94	0.08
1986		260	34 714	3 288	47 085	6 592	37 850	10.01	10.06	9.87	11.31	0.25
1987		209	42 481	–603	53 109	7 328	36 781	9.36	9.57	9.48	8.88	0.33
1988		401	52 509	–9 156	83 077	13 052	51 314	9.66	9.67	9.36	13.19	0.38
1989		336	64 456	–7 126	88 926	7 895	47 902	10.71	10.18	9.58	15.03	0.42
1990		156	51 368	–1 509	71 214	6 582	43 039	12.10	11.80	11.08	13.94	0.51
1991		192	29 683	8 350	36 427	6 006	41 862	10.18	10.11	9.92	10.94	0.08
1991	2	48	7 838	6 926	5 769	2 608	11 955	10.39	10.38	10.16	11.63	0.57
	3	31	5 723	4 065	10 831	825	10 966	10.05	9.98	9.84	10.62	0.14
	4	56	7 902	–144	7 140	418	9 774	9.84	9.72	9.62	10.94	0.08
1992	1	7	6 693	3 138	5 770	199	8 968	9.67	9.48	9.36	10.57	0.17
	2	–13	5 531	11 281	8 287	88	9 469	9.32	9.19	9.11	9.94	0.14

* Seasonally adjusted.

1. From March 1980 figures are the average of all observations (3 a week); from January 1982 figures are the average of working days.
2. Difference between the local authority rate net of the cost of forward cover and the Euro-dollar rate.

Source: Bank of England, *Quarterly Bulletin*, and Central Statistical Office, *Financial Statistics*.

Table L. **Labour market indicators**

1979-1991

	Peak		Trough		1987	1988	1989	1990	1991
	Per cent of total labour force								
A. Evolution									
Standardised unemployment rate	1983	12.4	1 979	5.0	10.3	8.6	7.1	6.9	8.7
Unemployment rates									
Total	1986	11.6	1 979	4.6	10.6	8.4	6.3	5.8	8.1
Male[1]	1986	13.5	1 979	5.5	12.4	10.1	7.9	7.6	10.7
Female[1]	1986	8.9	1990	3.2	7.6	6.1	4.2	3.2	4.6
Youth (under 25 years)[1]	1983	23.4	1990	8.1	17.3	11.9	8.3	8.1	12.9
Share of long-term unemployment[2]	1985	48.6	1981	29.3	45.9	44.7	38.9	32.4	26.0
Vacancy rate	1988	8.8	1981	3.4	8.3	8.8	7.7	6.1	4.2
				1980	1987	1988	1989	1990	1991
				Per cent					
B. Structural or institutional characteristics									
Participation rates[3]									
Global				74.4	74.9	75.5	75.9	75.8	75.5
Male				90.5	87.3	87.2	86.9	86.4	86.3
Female				58.3	62.4	63.7	64.8	65.1	64.6
Part-time employment rates[4]									
Global					22.0	22.0	21.8	21.8	22.4
Male					4.7	5.1	5.0	5.3	5.6
Female					45.3	44.7	43.8	43.4	43.9
Work-related government training programmes (thousand)[5]					329	366	457	423	360
Self-employment rate[4]				8.1	11.4	11.6	12.1	12.2	12.0

1. Per cent of respective labour force.
2. People looking for a job since one year or more as a percentage of total unemployment.
3. Defined as the total labour force divided by the population of working age (15-64) at mid-year.
4. Per cent of total employment.
5. Estimates of numbers consist of those participants in programmes and schemes(YTS, JTS, ET) who in the course of their participation in the programmes receive training in the context of a workplace but are not employees, self-employed or HM Forces.

Source: Department of Employment, *Employment Gazette;* OECD, *Labour Force Statistics* and *Employment Outlook.*

Table M. **Production structure and performance indicators**

	GDP share 1985 prices				Employment share (employees)			
	1971	1980	1985	1991	1971	1980	1985	1991
	Per cent							
A. Production structure								
Agriculture, forestry and fishing	1.4	1.5	1.6	1.5	1.9	1.6	1.5	1.3
Production industries:								
Energy and water supply	5.6	9.2	10.1	8.2	3.6	3.2	2.8	2.0
Manufacturing	28.5	24.1	22.4	22.1	36.4	30.3	25.1	21.6
Total	34.6	33.4	32.5	30.3	40.1	33.5	27.9	23.6
Construction	7.2	5.5	5.5	6.0	5.4	5.4	4.8	4.3
Services industries								
Distribution, hotels and catering, repairs	13.4	12.2	12.6	13.1	16.7	18.9	20.1	21.1
Transport and communication	6.3	6.6	6.6	7.2	7.1	6.5	6.3	6.1
Banking, finance, insurance, business services and leasing	9.5	12.2	15.1	18.3	6.1	7.4	9.7	12.2
Other services	28.1	28.6	26.1	23.6	22.8	26.8	29.7	31.4
Total	57.3	59.6	60.3	62.2	52.6	59.6	65.8	70.8
	1974-79	1979-86	1987	1988	1989	1990	1991	
	Percentage share							
B. Productivity growth[1]								
Total production industries		4.9	4.6	2.9	0.4	0.9	2.6	
of which:								
Manufacturing	1.1	3.8	6.1	5.8	4.0	0.9	0.5	
Construction		..	3.5	4.8	–3.0	0.1	0.8	
Whole economy	1.7	2.3	2.8	1.2	–0.3	–0.1	0.5	

1. Output per person employed, based on the output measure of GDP. The employed labour force comprises employees in employment, the self-employed and HM Forces.
Source: Central Statistical Office, *National Accounts;* Department of Employment, *Employment Gazette.*

Table N. **Public sector**

	1970	1980	1985	1991
	Per cent of GDP			
A. Structure of expenditure and taxation				
Expenditure, total	36.7	42.9	44.0	40.6
Current consumption	17.5	21.1	20.7	21.2
Transfers to households	8.7	11.8	14.1	12.7
Subsidies	1.7	2.5	2.0	1.0
Fixed investment	4.7	2.4	2.0	2.1
Other	4.1	5.1	5.2	3.6
Tax receipts, total	38.8	40.1	43.4	40.1
Income tax	14.3	13.4	14.5	13.1
of which:				
Personal income tax	11.2	11.1	10.6	11.1
Corporate profits tax	3.1	2.3	3.9	2.0
Social security contributions	8.4	11.0	13.1	12.5
Taxes on goods and services	16.1	15.7	15.8	14.5
Memorandum item:				
Net lending	3.0	–3.3	–2.9	–2.7
	1980	1985		1991
	Per cent			
B. Taxation				
Personal income tax				
Lowest marginal tax rate[1]	30	30		20
Highest marginal tax rate	60	60		40
Number of brackets[2]	6	6		3
Marginal income tax rate				
(for single average production worker)	30	30		25
Social security contributions				
Marginal contribution rate				
(for single average production worker)	20.5	19.5		18
of which:				
Employees' contribution rate	6.75	9		9
Employers' contribution rate	13.75	10.5		9
Corporate income tax rate[3]	52	40		33
VAT standard rate[4]	15	15		17.5

1. The lowest marginal tax rate was 25 per cent until 31 March 1991.
2. There were two tax brackets until 31 March 1991.
3. The corporate income tax rate was 34 per cent until 31 March 1991.
4. VAT standard rate was 15 until 31 March 1991.

Source: Central Statistical Office; OECD, *The Tax/Benefit Position of Production Workers;* International Bureau of Fiscal Documentation, *European taxation* (various isses).

Table O. **Financial markets**

	1981	1985	1987	1988	1989	1990	1991
	Per cent						
A. Share in total assets of financial institutions							
Banks	62.0	55.0	53.4	51.4	52.4	53.9	
Discount houses	0.9	0.8	0.8	0.7	0.8	0.8	
Building societies	11.6	11.3	11.9	12.1	9.8	11.6	
Institutional investors							
Pension funds	11.9	14.6	14.5	16.8	17.5	15.8	
Insurance companies	13.9	14.7	15.3	15.0	15.2	14.5	
Unit trusts	1.1	1.8	2.7	2.6	3.0	2.3	
Investment trusts	–1.7	1.6	1.3	1.3	1.3	1.1	
Other	0.3	0.1	0.1	0.1	0.1	0.1	
B. Share in sources and uses of funds in the personal sector							
Sources[1]							
Bank borrowing	9.3	13.2	15.0	18.3	18.8	11.5	2.8
Loans for house purchase							
Banks	5.3	8.4	17.0	15.0	10.0	8.7	6.9
Building societies	14.7	29.1	25.1	32.7	33.4	32.7	29.5
Other	2.1	0.4	7.4	7.6	4.1	2.7	1.8
Other loans and mortgages	2.2	2.9	2.4	1.3	2.0	0.8	–0.3
Uses[2]							
Deposits with banks	9.7	9.3	11.6	21.0	28.2	20.9	8.1
Deposits with building societies	17.2	24.2	19.7	25.2	23.0	21.8	23.0
Other liquid assets	11.0	5.6	3.8	3.1	–0.3	0.9	3.2
Public sector debt	5.3	1.3	1.5	–2.9	–3.4	–1.6	1.0
Company securities	–4.0	–6.6	–1.8	–12.9	–24.8	–11.1	–4.7
Life insurance and pension funds	32.3	34.4	29.0	24.9	34.7	31.5	34.6
C. Share in sources and uses of funds in the company sector							
Sources[1]							
Bank borrowing	18.1	15.5	15.7	32.2	32.2	22.4	–1.4
Other loans and mortgages	1.9	1.8	4.7	5.9	8.7	9.0	6.0
UK capital issues	7.4	9.0	22.6	9.0	7.8	7.3	22.4
Uses[2]							
Bank deposits	17.3	10.4	12.1	6.3	9.9	6.2	6.0
British government securities	–1.2	–1.0	0.3	–0.4	–0.1	1.1	0.7
UK company securities	4.1	8.7	7.1	16.3	16.8	2.8	8.0

1. Share of total identified sources of funds.
2. Share of total identified uses of funds.
Source: Central Statistical Office, *Financial Statistics;* Bank of England.

BASIC STATISTICS

BASIC STATISTICS:

INTERNATIONAL COMPARISONS

BASIC STATISTICS: INTERNATIONAL COMPARISONS

	Units	Reference period[1]	Australia	Austria	Belgium	Canada	Denmark	Finland	France	Germany	Greece	Iceland	Ireland	Italy	Japan	Luxembourg	Netherlands	New Zealand	Norway	Portugal	Spain	Sweden	Switzerland	Turkey	United Kingdom	United States
Population																										
Total	Thousands	1990	17 085	7 718	9 967	26 620	5 141	4 986	56 420	63 232	10 140	255	3 503	57 647	123 540	382	14 951	3 379	4 241	9 859	38 959	8 559	6 796	56 473	57 411	251 523
Inhabitants per sq. km	Number	1990	2	92	327	3	119	15	103	254	77	2	50	191	327	147	366	13	13	107	77	19	165	72	235	27
Net average annual increase over previous 10 years	%	1990	1.5	0.2	0.1	1	0	0.4	0.5	0.3	0.5	1.1	0.3	0.2	0.6	0.5	0.6	0.7	0.4	0	0.4	0.3	0.6	2.4	0.2	1
Employment																										
Total civilian employment (TCE)[2]	Thousands	1990	7 850	3 412	3 726	12 572	2 638	2 457	21 732	27 946	3 677	126	1 115	21 123	62 500	189	6 268	1 472	1992	4 474	12 578	4 508	3 563	19 209	26 577	117 914
Of which : Agriculture	% of TCE		5.6	7.9	2.7	4.2	5.6	8.4	6.1	3.4	24.5	10.3	15	9	7.2	3.2	4.6	10.6	6.5	17.8	11.8	3.3	5.6	47.8	2.1	2.8
Industry	% of TCE		25.4	36.8	28.3	24.6	27.5	31	29.9	39.8	27.4	30.2	28.6	32.4	34.1	30.7	26.3	24.6	24.8	34.8	33.4	29.1	35	19.9	29	26.2
Services	% of TCE		69	55.3	69	71.2	66.9	60.6	64	56.8	48.2	59.5	56.4	58.6	58.7	66.1	69.1	64.8	68.8	47.4	54.8	67.5	59.5	32.3	68.9	70.9
Gross domestic product (GDP)																										
At current prices and current exchange rates	Bill US $	1990	294.1	157.4	192.4	570.1	129.3	137.3	1 190.8	1 488.2	66	5.9	42.5	1 090.8	2 940.4	8.7	279.1	44	105.7	59.7	491.2	228.1	224.8	108.4	975.1	5 392.2
Per capita	US $		17 215	20 391	19 303	21 418	25 150	27 527	21 105	23 536	6 505	22 907	12 131	18 921	23 801	22 895	18 676	13 020	24 924	6 085	12 609	26 652	33 085	1 896	16 985	21 449
At current prices using current PPP's[3]	Bill US $	1990	271.7	127.4	163	510.5	85.2	82.2	980.4	1 151.6	74.3	4.1	37.2	919.7	2 179.9	7.3	234.8	45.8	68	82	457.3	144.6	142.1	189.7	911.8	5 392.2
Per capita	US $		15 900	16 513	16 351	19 179	16 570	16 487	17 376	18 212	7 323	16 158	10 627	15 953	17 645	19 282	15 708	13 564	16 033	8 364	11 738	16 896	20 911	3 318	15 882	21 449
Average annual volume growth over previous 5 years	%	1990	3.1	3.1	3.2	3	1.5	3.4	2.9	3.1	1.7	2.7	4.4	3	4.6	4.3	2.7	0.4	1.6	4.6	4.5	2.1	2.8	5.9	3.2	3
Gross fixed capital formation (GFCF)	% of GDP	1990	22.9	24.3	20.3	21.4	17.7	26.3	21.2	21.2	19.7	19.4	19.1	20.2	32.2	25.3	21.5	19.8	18.8	26.4	24.6	20.7	27.1	22.7	19.2	16.1
Of which: Machinery and equipment	% of GDP		9.7	10.1	10.4	7.2	8.1	10	9.7	9.8	8.7	6.2	9.3	10	13.7	11	10.7	9.9	6.8	13.1	8.1	8.9	9.1	11.7 (87)	8.5	7.8 (89)
Residential construction	% of GDP	1990	4.8	4.6	4.3	6.8	3.7	7.1	5.2	5.6	5	4.4	4.2	5.2	6.1	5	5.1	4.8	2.8	4.5	5	5.5	17.9[9]	5.8 (87)	3.4	4.4 (89)
Average annual volume growth over previous 5 years	%	1990	2.4	4.6	9.5	5.8	0.8	4.8	5.8	5.2	2.3	2.1	4.4	4.3	9	11.7	5.1	2.7	–2.8	10.4	11.7	4.9	6	4.7	5.8	2.7
Gross saving ratio[4]	% of GDP	1990	19.7	26	21.8	17.4	18	23.1	21	25.2	13.8	16	23.4	19.3	34.6	60.9	25.4	16.1	24.1	26.6	22.1	17.3	33	22.2	15.6	14.4
General government																										
Current expenditure on goods and services	% of GDP	1990	17.3	18	14.3	19.8	25.2	21.1	18	18.4	21.2	18.8	15.7	17.3	9.1	16.3	14.8	16.7	21	16.7	15.2	27.1	13.3	19.4	19.9	18.1
Current disbursements[5]	% of GDP	1990	34.9	44.9	53.1	44	56.5	37.5	46.2	42.6	50.9	31.5	49.9 (87)	48.1	26.2	45 (86)	51.7	..	51.6	39.3	35.5 (88)	59.1	30.7	..	38.1	34.6 (89)
Current receipts	% of GDP	1990	35.1	46.7	49.5	41.6	56.1	41.2	46.5	43.4	34.7	34.9	43.7 (87)	42.1	34.6	52.9 (86)	49.5	..	56.2	37.6	36.3 (88)	63.9	34.2	..	40	31.8 (89)
Net official development assistance	Mill US $	1990	0.34	0.25	0.45	0.44	0.93	0.64	0.79	0.42	0.07	0.03	0.16	0.32	0.31	0.29	0.94	0.22	1.17	0.23	0.16	0.9	0.31	..	0.27	0.21
Indicators of living standards																										
Private consumption per capita using current PPP's[3]	US $	1990	9 441	9 154	10 119	11 323	8 639	8 602	10 482	9 841	5 298	9 824	5 886	9 866	10 122	11 017	9 241	8 475	8 174	5 278	7 326	8 748	11 933	1992	10 051	14 465
Passenger cars per 1 000 inhabitants	Number	1989	570	416	416	613	370	439	494	526	234	488 (85)	278	458	455	546	399	549	459	181	347	462	479	37	449	748
Telephones per 1 000 inhabitants	Number	1989	550 (85)	540	500 (88)	780 (88)	880 (88)	620 (85)	610 (85)	680 (88)	360 (88)	525 (83)	265 (85)	510 (88)	555 (85)	413 (85)	660 (88)	720 (88)	622 (84)	220 (88)	396 (87)	889 (83)	880 (88)	120 (88)	524 (84)	650 (84)
Television sets per 1 000 inhabitants	Number	1988	217	484 (89)	255	586	526	486	399	379	175	306	260	419	589	250	478	296	350	160	380	395	408	172	435	812
Doctors per 1 000 inhabitants	Number	1990	2.3	2.1	3.4	2.2	2.7 (87)	1.9	2.6 (89)	3 (89)	3.3 (89)	2.8 (89)	1.5 (88)	1.3 (89)	1.6 (88)	1.9 (88)	2.5	1.9 (89)	3.1	2.9	3.7 (89)	3.1 (89)	2.9 (89)	0.9	1.4 (89)	2.3
Infant mortality per 1 000 live births	Number	1990	8.2	7.8	7.9	7.2 (89)	7.5 (89)	6.1 (89)	7.2	7.5 (89)	9.1 (89)	5.9	7.6 (89)	8.5	4.6 (89)	9.9	6.9	8.3	7.9 (89)	11	7.8 (89)	5.9	7.3	6.5 (89)	7.9	9.2
Wages and prices (average annual increase over previous 5 years)																										
Wages (earnings or rates according to availability)	%	1990	5.6	5	3	4.3	6	8.2	3.7	4.2	16	..	5.6	6.1	3.7	..	1.7	8.1	8.7	..	8.2	8.2	..	..	8.5	2.6
Consumer prices	%	1990	7.9	2.2	2.1	4.5	3.9	5	3.1	1.4	17.4	20.2	3.3	5.7	1.3	1.7	0.7	9.4	6.2	11.3	6.5	6.2	2.5	53.7	5.9	4
Foreign trade																										
Exports of goods, fob*	Mill US $	1990	39 813	40 985	118 291[7]	127 334	34 988	26 583	216 157	409 620	8 014	1 589	23 796	170 330	287 358	..[8]	131 778	9 533	33 905	16 338	55 289	57 422	63 847	12 836	185 710	393 812
As % of GDP	%		13.5	26	61.5	22.3	27.1	19.4	18.2	27.5	12.2	27.1	56	15.6	9.8	..	47.2	21.7	32.1	27.4	11.3	25.2	28.4	11.8	19	7.3
Average annual increase over previous 5 years	%		11.9	19.1	17.1	7.8	15.6	14.3	16.5	17.6	11.8	14.2	18.1	16.6	10.2	..	14	10.6	11.2	23.5	18	13.7	18.4	9.9	12.9	13.1
Imports of goods, cif*	Mill US $	1990	38 907	48 914	120 330[7]	116 561	31 647	26 950	225 260	344 454	19 831	1 648	20 687	181 863	235 407	..	126 215	9 458	27 218	24 874	87 373	54 659	69 811	22 224	225 327	494 842
As % of GDP	%		13.2	31.1	62.5	20.4	24.5	19.6	18.9	23.1	30.1	28.1	48.7	16.7	8	..	45.2	21.5	25.7	41.7	17.8	24	31	20.5	23.1	9.2
Average annual increase over previous 5 years	%		11	18.6	16.5	8.8	11.8	15.3	16.8	16.9	14.1	12.7	15.7	14.8	12.6	..	14.1	9.6	11.9	26.5	24	14	17.8	14.2	15.5	7.4
Total official reserves[6]	Mill SDR's	1990	11 432	6 591	8 541[7]	12 544	7 445	6 779	25 851	47 729	2 398	307	3 672	44 232	55 179	..	12 289	2 902	10 777	10 182	36 008	12 644	20 541	4 252	25 201	50 791
As ratio of average monthly imports of goods	ratio		3.5	1.6	0.9	1.3	2.8	3	1.4	1.7	1.5	2.2	2.1	2.9	2.8	..	1.2	3.7	4.8	4.9	4.9	2.8	3.5	2.3	1.3	1.2

* At current prices and exchange rates.

1. Unless otherwise stated.
2. According to the definitions used in OECD Labour Force Statistics.
3. PPP's = Purchasing Power Parities.
4. Gross saving = Gross national disposable income minus Private and Government consumption.
5. Current disbursements = Current expenditure on goods and services plus current transfers and payments of property income.
6. Gold included in reserves is valued at 35 SDR's per ounce. End of year.
7. Including Luxembourg.
8. Included in Belgium.
9. Including non-residential construction.
10. Federal Government Statistics.

Sources: Population and Employment: OECD Labour Force Statistics.
GDP, GFCF, and General Government: OECD National Accounts, Vol. 1 and OECD Economic Outlook, Historical Statistics.
Indicators of living standards: Miscellaneous national publications.
Wages and Prices: OECD Main Economic Indicators.
Foreign trade: OECD Monthly Foreign Trade Statistics, series A.
Total official reserves: IMF International Financial Statistics.

EMPLOYMENT OPPORTUNITIES

Economics Department, OECD

The Economics Department of the OECD offers challenging and rewarding opportunities to economists interested in applied policy analysis in an international environment. The Department's concerns extend across the entire field of economic policy analysis, both macro-economic and micro-economic. Its main task is to provide, for discussion by committees of senior officials from Member countries, documents and papers dealing with current policy concerns. Within this programme of work, three major responsibilities are:

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- to issue full twice-yearly reviews of the economic situation and prospects of the OECD countries in the context of world economic trends;
- to analyse specific policy issues in a medium-term context for theOECD as a whole, and to a lesser extent for the non-OECD countries.

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The Department is made up of about 75 professional economists from a variety of backgrounds and Member countries. Most projects are carried out by small teams and last from four to eighteen months. Within the Department, ideas and points of view are widely discussed; there is a lively professional interchange, and all professional staff have the opportunity to contribute actively to the programme of work.

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a) Solid competence in using the tools of both micro-economic and macro-economic theory to answer policy questions. Experience indicates that this normally requires the equivalent of a PH.D. in economics or substantial relevant professional experience to compensate for a lower degree.

b) Solid knowledge of economic statistics and quantitative methods; this includes how to identify data, estimate structural relationships, apply basic techniques of time series analysis, and test hypotheses. It is essential to be able to interpret results sensibly in an economic policy context.

c) A keen interest in and knowledge of policy issues, economic developments and their political/social contexts.

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g) The Department works on a tight time schedule and strict deadlines. Moreover, much of the work in the Department is carried out in small groups of economists. Thus, the ability to work with other economists from a variety of cultural and professional backgrounds, to supervise junior staff, and to produce work on time is important.

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For further information on employment opportunities in the Economics Department, contact:

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