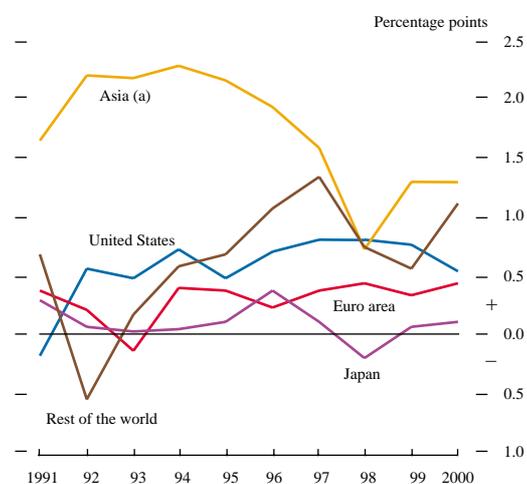


The international environment

- *This article discusses developments⁽¹⁾ in the global economy since the November 1999 Quarterly Bulletin.*
- *World activity continued to expand at a faster-than-expected rate in the second half of 1999. Prospects for 2000 have improved and forecasts for GDP growth have recently been revised upwards.*
- *The US economy continued to grow strongly, driven primarily by domestic demand. The Federal funds target rate was increased by 1/4% to 5 1/2% in mid-November, and by a further 1/4% to 5 3/4% in early February.*
- *Activity in the euro area picked up in Q3 and appears to have remained robust in Q4. Conditions in the major euro-area economies improved, partly due to stronger export demand. The ECB raised its main refinancing rate by 1/2% in early November and by a further 1/4% to 3 1/4% in early February.*
- *The Japanese economy has started to improve. That reflects a supportive policy stance as well as an increase in exports. However, the outlook for private consumption and investment remains weak.*
- *The recovery in emerging market economies in 1999 was stronger than expected. Growth in Asia is expected to be stronger than in Latin America.*
- *Oil prices continued to rise, but growth in non-oil commodities prices was more muted. Although raw materials prices have risen in response to this, inflationary pressures further along the supply chain have been more subdued.*

Chart 1
Contributions to world GDP growth



Source: IMF *World Economic Outlook*, October 1999.

(a) Hong Kong SAR, India, Indonesia, Malaysia, Peoples' Republic of China, the Philippines, Singapore, South Korea, Taiwan and Thailand.

Overview

World activity expanded at a faster-than-expected pace in the second half of 1999. The outlook for growth in 2000 and beyond has also improved, as reflected in upward revisions to GDP forecasts. The strengthening in activity is now fairly broadly based (see Chart 1), with growth in the United States remaining strong, albeit moderating over 1999 as a whole, a continued recovery in the euro area, and the Asian economies recovering rapidly from the financial crises in 1998.

Stronger global demand and a reduction in oil production by OPEC members have led to a pick-up in oil prices and, to a lesser extent, some other commodities prices, but there has been little evidence so far of a substantial increase in consumer prices. Monetary policy was tightened in both the United States and the euro area in November and February. Market expectations, as reflected in futures rates, are for further tightening in response to strengthening activity.

(1) Based on data up to 3 February 2000.

Table A
OECD projections for growth in GDP and world trade

	1999		2000		2001
	New	Revision (a)	New	Revision (a)	New
GDP:					
World	3.0	0.6	3.5	0.6	3.4
United States	3.8	0.2	3.1	1.1	2.3
Japan	1.4	2.3	1.4	1.4	1.2
Germany	1.3	-0.4	2.3	0.0	2.5
France	2.4	0.1	3.0	0.4	2.9
Italy	1.0	-0.4	2.4	0.2	2.7
United Kingdom	1.7	1.0	2.7	1.1	2.3
Canada	3.7	0.8	3.0	0.2	2.7
Euro area	2.1	0.2	2.8	0.4	2.8
World trade	4.9	1.0	7.1	1.5	6.3

Source: OECD *Economic Outlook*, December 1999.

(a) Difference from May 1999 *Economic Outlook*.

Table B
Other forecasts for GDP growth

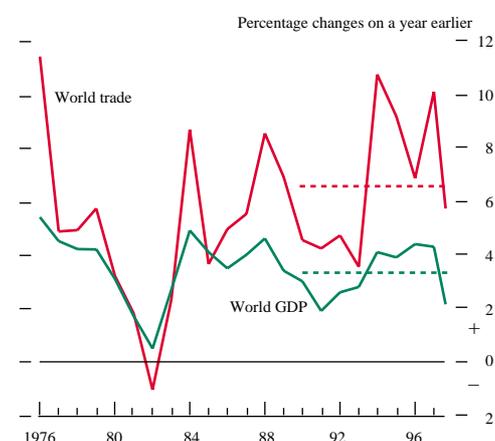
	IMF (a)		Consensus Economics (b)		The Economist poll of forecasters (c)	
	1999	2000	1999	2000	1999	2000
United States	3.7	2.6	4.0	3.6	4.0	3.7
Japan	1.0	1.5	0.7	0.7	0.8	1.2
Germany	1.4	2.5	1.4	2.7	1.3	2.7
France	2.5	3.0	2.7	3.4	2.8	3.3
Italy	1.2	2.4	1.2	2.4	1.2	2.4
Euro area	2.1	2.8	2.2	3.0	2.1	3.1

(a) IMF *World Economic Outlook*, October 1999.

(b) *Consensus Forecasts*, January 2000.

(c) *The Economist*, 29 January–4 February 2000.

Chart 2
World trade and GDP growth



Note: Dotted lines show 1990–98 averages.

Sources: OECD and IMF.

Forecasts of world activity have been revised up over the past six months. The IMF's October World Economic Outlook and the OECD's December Economic Outlook were more optimistic about prospects than their previous publications in the first half of 1999. Private sector projections are also stronger, and reflect output data published since November. The Monetary Policy Committee's most recent central forecast for world output in 2000 and 2001 is consistent with this view of stronger prospects.

The December OECD *Economic Outlook* substantially revised up GDP and world trade projections for 1999 and 2000 (see Table A). The OECD expected world GDP to grow by 3% in 1999 and by 3.5% in 2000. The OECD cited 'unexpected near-term momentum of the US economy, a stronger and more rapid resumption of growth in Japan and, particularly, Korea, as well as a slightly better outlook for the European Union' as the main reasons for the upward revision. Euro-area output was projected to continue growing at 2.8% into 2001, leaving world GDP growth unchanged, at around 3.4%, despite a forecast slowdown in the United States.

Other more recent forecasts are somewhat stronger than the IMF and OECD forecasts (see Table B). That principally reflects more recent releases of stronger euro-area activity data and stronger-than-expected US private consumption data.

World trade is also expected to be stronger, principally reflecting a pick-up in non-Japan Asia (see the emerging markets section). But recent emerging markets crises proved more serious than the Mexican crisis of 1995. Their combined effects led to a sharper slowdown in world trade growth, perhaps reflecting the greater financial disruption in Asia, which hindered trade finance and so had a larger impact on world GDP.

The Monetary Policy Committee's central projection for world GDP and trade growth, consistent with the February 2000 *Inflation Report* projections, reflects this view of stronger prospects. Annual world GDP growth is expected to rise to 3% or so in 1999 and then to around 4% in 2000 and 2001; this would be above the average growth rates of the 1990s but below growth rates seen immediately before the Asian crisis (see Chart 2). World imports are projected to grow by between 6% and 7% over the same period, close to the average growth rates seen in the 1990s.

The balance of risks around that projection is judged to remain on the downside, primarily for reasons linked to the possibility of asset markets falling.

The global inflation picture is mixed. Oil prices continued to rise strongly, but non-oil commodities prices have been more subdued. Despite the rise in oil prices, producer price inflation further along the supply chain remained more subdued in the major economies.

Commodity prices, particularly oil prices, continued to rise, partly in response to the improvement in global output (see Chart 3). The price of Brent crude oil rose from US\$21.82 on 29 October to US\$26.73 on 3 February. There are signs that, having fallen between late 1997 and early 1999, some non-oil commodity prices are responding to the improvement in global prospects. *The Economist* non-oil commodity index rose by 2.2% between 29 October and 31 December, and by a further 1.8% to 3 February.

Chart 3
Commodity prices

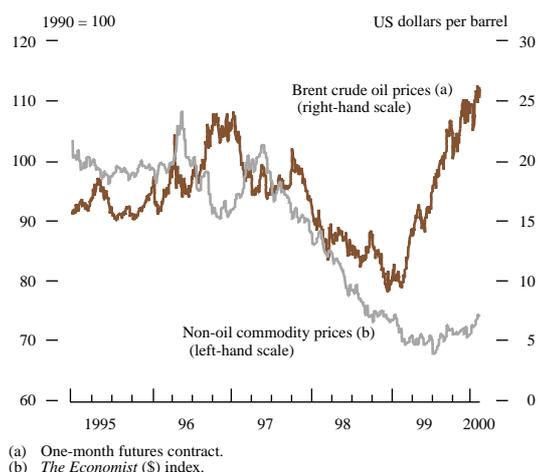


Chart 4
Producer prices

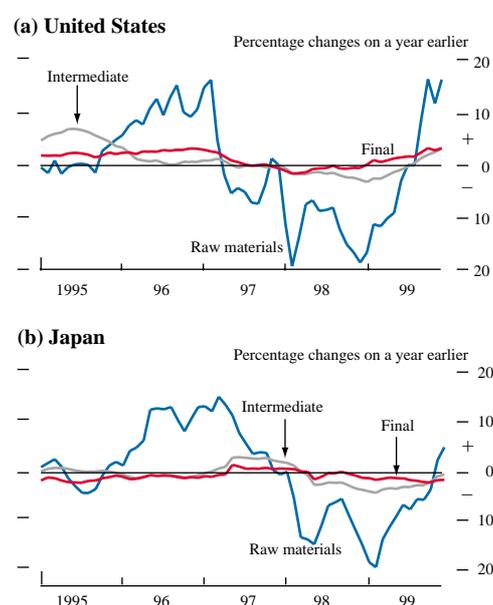
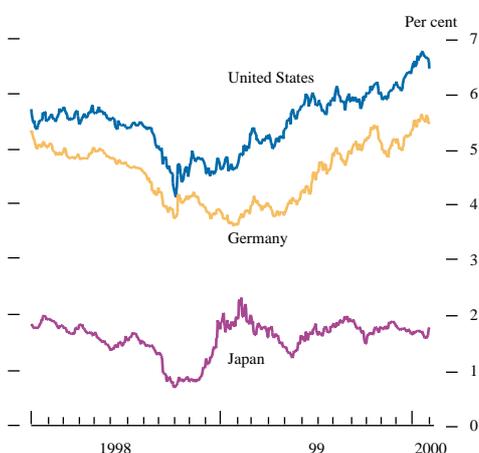


Chart 5
Nominal ten-year government bond yields



But there are few signs that producer prices further along the supply chain are rising substantially in response to these price movements. Chart 4 decomposes producer prices in the United States and Japan into raw materials, intermediate and final goods prices. In the year to December, raw materials prices rose by 15.8% in the United States and by 4.9% in Japan, reflecting higher oil prices, with the increase in Japan being smaller due to yen appreciation. But final and intermediate producer prices rose by much less. In the United States, intermediate prices rose by 3.9% in the twelve months to December, while in Japan they fell by 0.6%. Final producer prices followed a similar pattern.

After declining since mid-October 1999, nominal ten-year government bond yields in both the United States and Germany rose from November onwards. Japanese nominal ten-year government bond yields remained broadly unchanged over the same period.

Nominal ten-year government bond yields in the United States and Germany rose by 46 and 30 basis points, to 6.47% and 5.49% respectively, between 29 October and 3 February (see Chart 5). US ten-year yields peaked at 6.78% on 21 January before falling back. The increase in nominal yields in both countries may reflect the improvement in prospects for activity discussed above. Japanese nominal government bond yields remained broadly unchanged, rising by only 9 basis points, to 1.79%, in the same period.⁽¹⁾

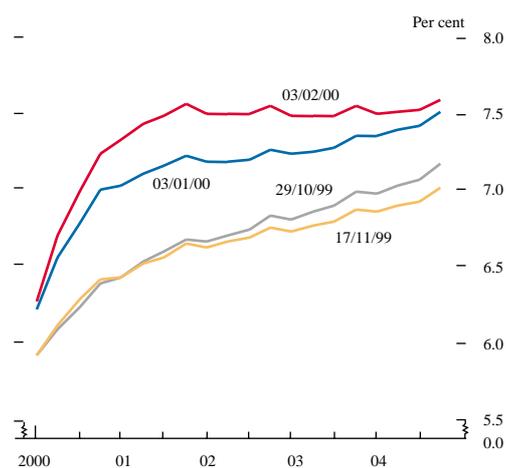
US thirty-year nominal bond yields followed a similar pattern to those of ten-year yields, until they fell sharply from late January. Thirty-year yields rose by 58 basis points from 29 October, to peak at 6.75% on 20 January, but then fell back sharply, to 6.13%, by 3 February, just below their level on 29 October and below the ten-year yield. Market commentators have offered several explanations for this movement, typically focusing on reaction to the government bond buyback programme recently announced by the US Treasury.

The US economy continued to grow at rates that on most estimates are above trend. GDP grew by 1.4% in the fourth quarter, and by 4.0% in 1999 as a whole, largely reflecting domestic demand. The Federal funds target rate was increased by 1/4% in November and by a further 1/4% in February. Market expectations, as reflected in yield curves, are for further rate rises in 2000. Labour market pressures had only a muted impact on earnings.

The Federal Open Market Committee (FOMC) increased the Federal funds target rate by 25 basis points to 5.5% on 16 November. Combined with earlier rises, that rise fully reversed the 75 basis point reduction in the Federal funds target rate made during the financial crisis of autumn 1998. The Federal funds target rate was raised by a further 25 basis points on 2 February 2000, when the FOMC was concerned 'that over time, increases in demand will continue to exceed the growth in potential supply, even after taking account of the pronounced rise in productivity growth'. Further, the FOMC cautioned that 'the risks are weighted mainly towards conditions that might generate heightened inflation pressures in the foreseeable future'.

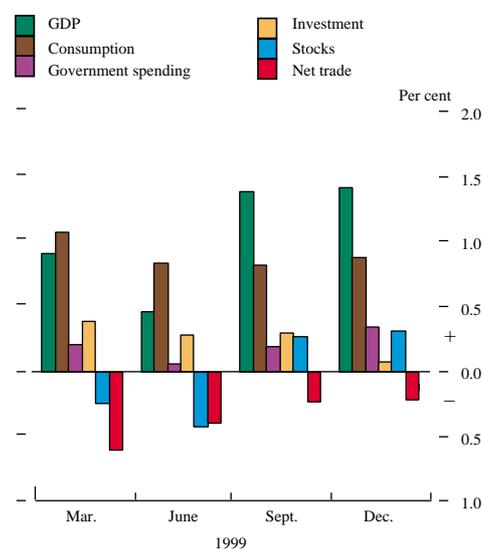
(1) Movements in foreign exchange, equity and bond markets are discussed in more detail in the 'Markets and operations' article on pages 5–22.

Chart 6
Eurodollar futures rates



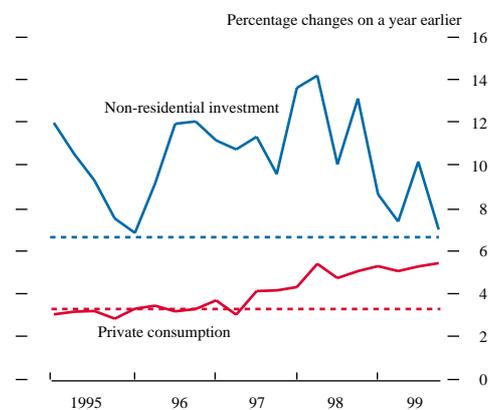
Source: Bloomberg.

Chart 7
Contributions to US GDP growth



Source: Primark Datastream.

Chart 8
US non-residential investment and private consumption



Note: Dotted lines show 1988-99 average annual growth rates.

Source: Primark Datastream.

As Chart 6 shows, three-month forward interest rates, as predicted by the futures market, moved little following the November interest rate increase, suggesting that the rate rise had been widely expected by the market and did not imply substantial additional tightening in the future. But futures rates had increased sharply by early January, and the slope of the curve steepened; and after the rate rise on 2 February, futures rates indicated a market expectation of further tightening. Bond yields also rose, with the ten-year bond yield rising to more than 6.6% on 5 January, the first time it had breached that level since May 1997.

Although they declined for a short period in early January, equity prices appeared to be largely unaffected by the tighter monetary conditions. The Dow Jones Industrial Average index rose by 7.2% between 29 October and 31 December 1999, but fell by 4.2% to 3 February. The Nasdaq composite price index which has a higher proportion of IT-related companies rose by 37.2% to 31 December 1999 and by a further 3.4% to 3 February.

By the end of January the US economy had experienced 106 consecutive months of expansion, as long as that experienced in the 1960s. If, as expected by many commentators, the expansion continues in February, it will have been the longest in US history.⁽¹⁾ GDP growth in 1999 Q3 was revised upwards to 1.4% and growth in Q4 on the advance estimate was 1.4%, a rise of 4.2% relative to a year earlier. GDP rose by 4.0% in 1999 as a whole, a slight slowdown from the 4.3% growth rate in 1998. The overall profile of growth in Q4 was somewhat similar to Q3 (see Chart 7), driven by private consumption, which rose by 1.3%, a slight pick-up from Q3. A slowdown in private investment growth was offset by a rise in government spending. Net trade continued to detract from growth, contributing -0.2 percentage points. Y2K effects might explain some of the slowdown in investment, as some preparations were completed in Q3, and some of the further positive contribution to growth from stockbuilding.

As in 1998, GDP growth in 1999 was largely driven by private consumption and investment. For the past five years, business investment has been continuously above its average growth rate since 1988, as shown in Chart 8. But private consumption only picked up above its average growth rate from 1997. Whereas the strength of investment was largely due to IT-related expenditure, the underlying factors behind the rise in private consumption are more complex. The box on pages 30-31 considers the evidence that wealth effects from sustained equity and house price rises have played an important role in boosting consumption. In a recent speech, Chairman Greenspan cited a central estimate that the rise in US equity prices had 'added around 1 percentage point of the somewhat more than 4 percentage point annual growth rate of GDP since late 1996'.⁽²⁾

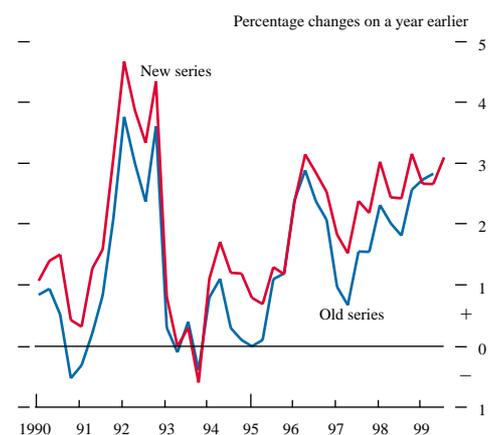
The increase in measured GDP growth following the comprehensive revisions to national income and product accounts by the Bureau of Economic Analysis was discussed in the November 1999 *Quarterly Bulletin*.⁽³⁾ One consequence of those revisions has been an increase in estimates of US trend labour

(1) Greenspan, A, 'Technology and the economy', 13 January 2000. Remarks made before the Economic Club of New York.

(2) *op cit*.

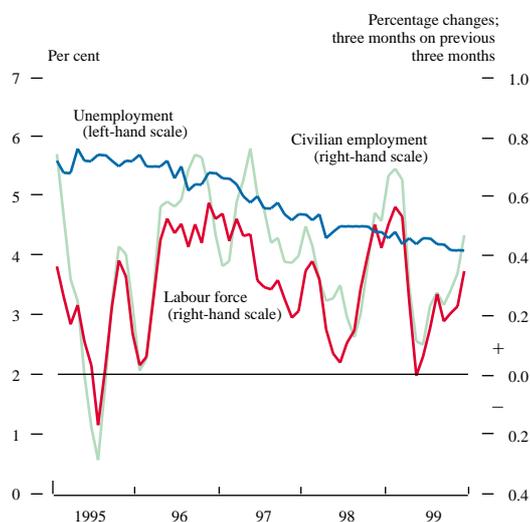
(3) November 1999 *Quarterly Bulletin*, page 346.

Chart 9
US productivity growth



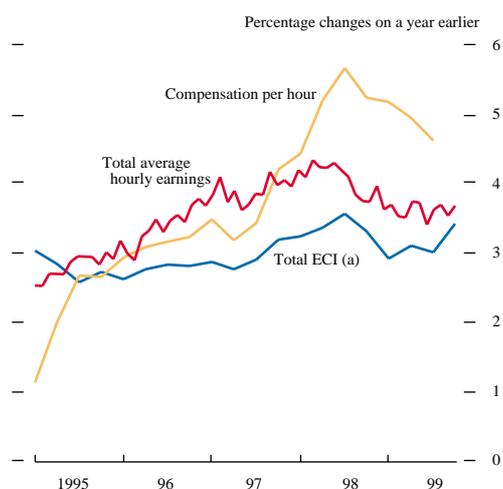
Source: Primark Datastream.

Chart 10
US labour market



Source: Primark Datastream.

Chart 11
US labour costs



Source: Primark Datastream.

(a) Employment Cost Index.

productivity growth. As Chart 9 shows, US labour productivity growth has been revised up over the course of the 1990s. Those revisions have raised and somewhat flattened the profile of productivity growth in recent years. Stronger productivity growth could partly explain why inflationary pressures have remained muted in the United States, as it would tend to increase the economy's productive capacity. Other things being equal, that would allow output growth to be higher for longer before inflationary pressures emerge.

The labour market continued to tighten during Q4 (see Chart 10). The unemployment rate fell to 4.1% in October—its lowest level in 30 years—reflecting employment growth outstripping the expansion of the labour force. Non-farm payrolls grew by 315,000 in December, after a rise of 222,000 in November, and civilian employment rose by 0.5% in the three months to December compared with the previous three months, outstripping labour force growth of 0.4% in the same period.

But recent trends in compensation and wages continue to suggest that stronger employment growth has yet to feed into wage inflation. Average hourly earnings rose by 0.4% in December, following a 0.1% rise in November, and the annual growth rate increased to 3.7%, from 3.6% in November (see Chart 11). Alternative measures of compensation also suggest that wage pressures remained subdued. The Employment Cost Index (ECI), which includes benefits, rose by 1.1% in Q4 and by 3.4% relative to a year earlier, reflecting a sharp rise in benefits, which increased by 1.3% in Q4, their largest increase since 1993 Q1.

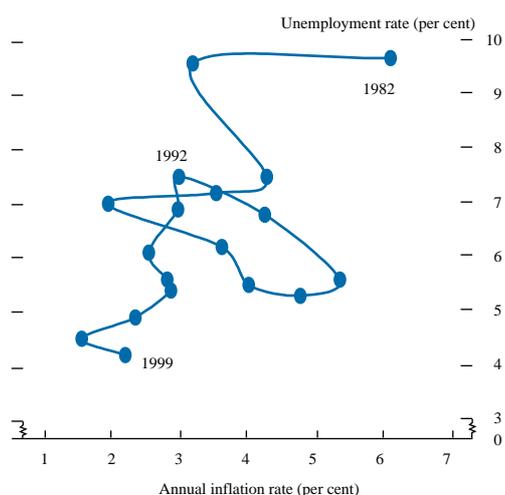
Compensation per hour, which attempts to adjust wages for the realisation of stock options, has grown faster than the ECI, but its annual growth rate slowed in 1999, from a peak of 5.7% in 1998 Q3. Compensation per hour grew by 4.6% relative to a year earlier in Q3. However, this growth rate might be understated, as the speed at which stock options are incorporated into the latest quarterly estimates is somewhat unclear.

Chart 12 plots the relationship between the inflation rate and unemployment for the United States from 1982 to 1999. As the chart shows, inflation remained relatively muted in 1999, despite the unemployment rate falling to 4.1%. By contrast, in 1992, the unemployment rate was 7.5% and annual inflation was 3.0%. Inflation in the United States since 1992 has generally been lower than expected, given the unemployment rate. Between 1995 and 1998, the unemployment rate fell by 1.1 percentage points to 4.5%; the annual inflation rate fell, from 2.8% to 1.6%, over the same period.

There may be two broad explanations for this. The first suggests that a decline in the 'non-accelerating inflation rate of unemployment' (NAIRU) for the United States explains why unemployment has fallen without an increase in inflation. The NAIRU is commonly estimated to have been around 6% in the 1980s, but there are a number of reasons to believe that it might subsequently have fallen. For example, Katz and Krueger⁽¹⁾ estimate that the decline in the share of the labour force accounted

(1) Katz, L and Krueger, A, 'The high-pressure labour market of the 1990s', *Brookings Papers on Economic Activity*, 1999:1, pages 1–87.

Chart 12
US inflation and unemployment rate



Source: Primark Datastream.

for by 16–19 year olds would explain a decline in the NAIRU of up to 0.4 percentage points since the mid-1980s. Increased incarceration could have reduced the NAIRU by as much as a further 0.17 percentage points, as the incarcerated typically come from a part of the labour force only marginally attached to jobs. Katz and Krueger also estimate that structural changes in the labour market, such as the increased use of employment agencies as well as deunionisation, may have reduced the NAIRU by another 0.1–0.5 percentage points.

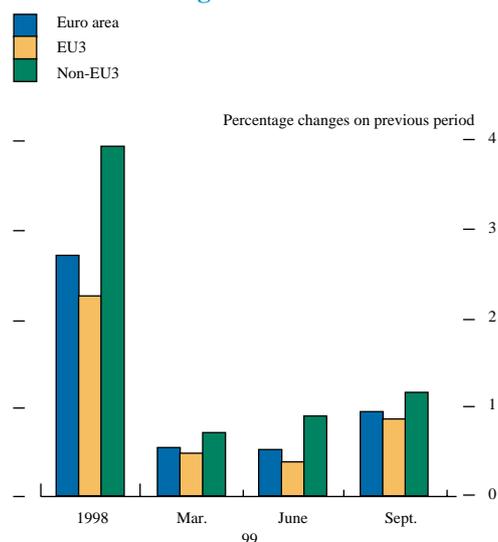
The second explanation rests on whether the underlying rate of inflation has decreased. Gordon suggests that a number of other effects, such as the declining cost of computers, falls in medicare cost inflation and changes in the methodology of price measurement may have temporarily reduced inflation, despite unemployment being below the NAIRU.⁽¹⁾

Headline US consumer price inflation fell between 1997 and early 1999. That largely reflected declines in the prices of oil and other commodities. However, both the headline measure and the core measure of inflation (which excludes food and energy prices) could also have been affected by US dollar appreciation over the same period, which led to falling import prices more generally.

Overall, there seems to be evidence that the NAIRU in the United States has fallen. But, to the extent that temporary factors explain why inflation has been so muted despite the declining unemployment rate, the prospects for inflationary pressures will depend on the degree to which these temporary shocks persist.

Euro-area GDP increased by 1.0% in the third quarter of 1999, and available evidence suggests that activity continued to be robust in the fourth quarter. Euro-area inflation was 1.7% in December. The ECB raised its main refinancing rate on 4 November, and again on 3 February.

Chart 13
Euro-area GDP growth



Note: The EU3 are France, Germany and Italy.

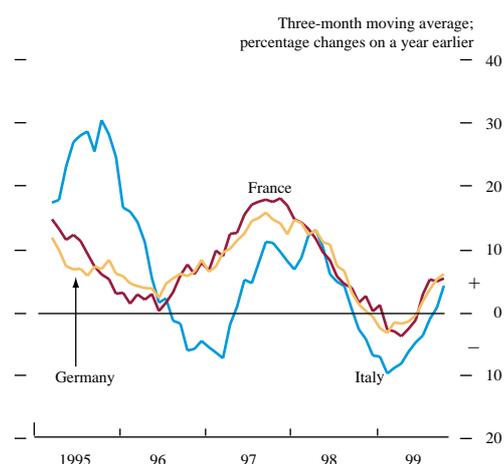
Source: Eurostat.

Euro-area GDP increased by 1.0% in 1999 Q3. Both domestic demand and net trade made significant positive contributions to growth in Q3; domestic demand contributed 0.5 percentage points while net trade contributed 0.4 percentage points. After the slowdown in euro-area activity in the second half of 1998 and the first half of 1999, most forecasters now expect stronger euro-area growth in 2000 and 2001. Much of that strengthening is expected to come from domestic demand, though net trade should continue to make a positive contribution, in view of the recovery in world trade and the depreciation of the euro.

As Chart 13 shows, growth in the smaller euro-area countries continued to outstrip that of the three largest economies. These growth differentials partly reflect the more advanced cyclical positions of some smaller euro-area countries, which have experienced robust domestic demand. They also partly reflect the monetary easing experienced by the smaller countries in the run-up to monetary union. However, growth differentials could also result from longer-term factors as lower-income countries ‘catch up’.

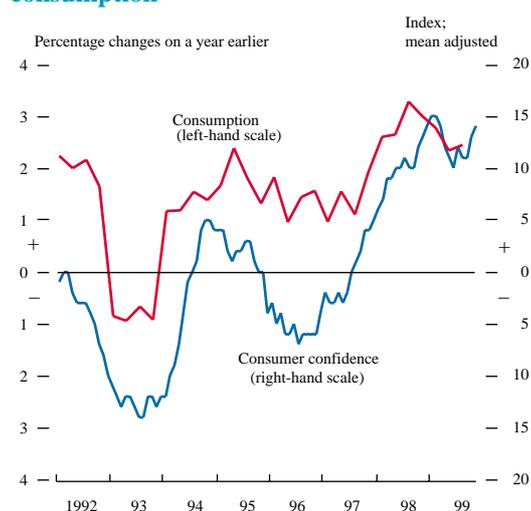
(1) Gordon, R, ‘Foundations of the Goldilocks economy: supply shocks and the time-varying NAIRU’ and associated discussion, *Brookings Papers on Economic Activity*, 1998:2, pages 297–346.

Chart 14
EU3 exports



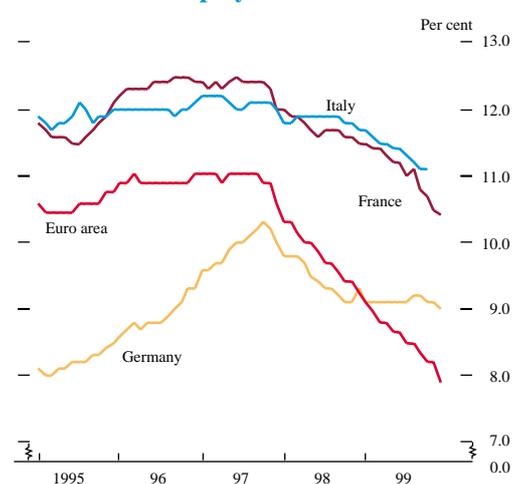
Source: Primark Datastream.

Chart 15
Euro-area consumer confidence and consumption



Source: Primark Datastream.

Chart 16
Euro-area unemployment



Source: Primark Datastream.

Euro-area exports grew by 3.0% in 1999 Q3, their fastest quarterly growth since 1997. Although import growth was also strong, increasing by 1.9%, net trade made a significant positive contribution to growth. European Commission survey data show that manufacturers became considerably more optimistic in Q4 about export prospects. Although these survey data do not distinguish between intra and extra euro-area trade, it seems likely that the prospects for external demand have improved, reflecting the recovery in world demand and the lower euro real effective exchange rate.

As Chart 14 shows, export growth in the main euro-area economies rose in Q4 relative to a year earlier. Italian exports were more affected by the Asian crisis, so their recovery is consistent with the rebound in emerging market growth. Although France has had a stronger net trade position than Germany, this seems to reflect lower French import growth, as export growth has been similar in each country.

Private investment in the euro area increased by 1.5% in 1999 Q3 following an increase of 0.4% in Q2. Survey data on orders continued to strengthen in Q4 and euro-area business confidence also increased, reaching levels last seen in July 1998. The divergence between strong consumer confidence and weaker industrial confidence that existed at the start of 1999 has been eroded by a rise in industrial confidence; consumer confidence has remained near to its historical high.

Alongside stronger export growth, euro-area private consumption also increased, rising in Q3 by 2.4% relative to a year earlier. Growth in euro-area consumption remained relatively robust in 1999, as stronger growth in consumer spending in France and the smaller euro-area countries compensated for slower growth in Germany and Italy. Chart 15 shows the relationship between consumer confidence and private consumption, and suggests that the outlook for consumption is likely to remain strong.

The continued strength of consumption partly reflected developments in the euro-area labour market. Euro-area unemployment fell to 9.6% in December, from 10.1% at the start of Q3 (see Chart 16). The unemployment rates in France and Italy also declined though remained higher than overall euro-area unemployment. Unemployment in the euro area fell fastest among those aged under 25: by 0.8 percentage points between September and December 1999, compared with a fall of 0.2 percentage points for the over 25s, perhaps reflecting schemes aimed at reducing youth unemployment. Nonetheless, youth unemployment is still high, at 18.0% in December 1999.

Euro-area annual inflation, measured on a harmonised basis, has risen from a low of 0.8% in January 1999 to 1.7% in December (see Chart 17). The rise was driven by retail energy prices, which increased by 10.2% on a year earlier in December. Annual 'core' inflation, ie excluding energy, food, alcohol and tobacco, has fallen since January 1999, to 1.1% in December on the harmonised measure.

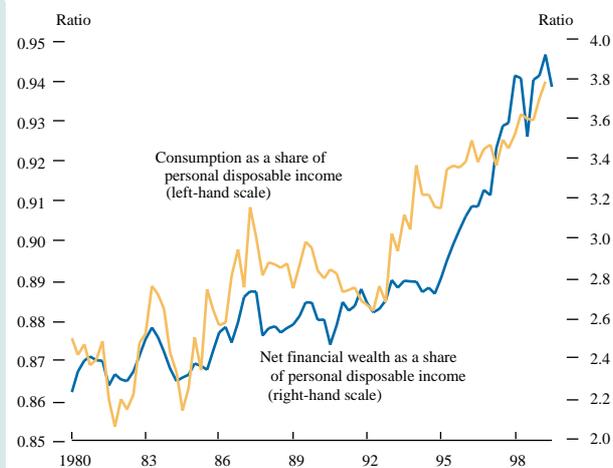
Concerns over monetary developments and upward pressures on inflation led the ECB to tighten monetary policy. The main

Stock market and housing wealth effects on consumption in the United States

Buoyant consumer spending contributed to the sustained period of robust growth experienced by the US economy in the 1990s. One issue is the extent to which consumption was boosted by rising equity and housing wealth. Although there is less empirical evidence outside the United States,⁽¹⁾ the issue has nonetheless become increasingly relevant to other economies recently, in the wake of rising global stock markets and other asset price rises.

Between January 1994 and January 2000 the Dow Jones industrial average index rose by 191%. At the same time, the proportion of the population owning shares, either directly or through mutual funds or retirement accounts, increased significantly, so a large number of households benefited to some degree from increased stock market wealth. Chart A shows that both consumption and net financial wealth (which includes equities) rose as a share of personal disposable income in the 1990s. House prices rose more moderately, by an average of 3.9% per annum over the same period. But housing remained the largest component of total household wealth. And there was a steady rise in housing-related borrowing, which underpinned spending.

Chart A
United States: consumption and net financial wealth



Source: Primark Datastream.

Links between wealth and consumption

Wealth effects are usually viewed as affecting spending over the lifetime of the consumer. In life-cycle models, household consumption depends on permanent income, which is the present value of current and future labour and capital income. Households are assumed to smooth their spending over their life-cycle, typically borrowing

in the early part of their career, saving during their peak earning years, and using their savings to finance spending in retirement. An unexpected increase in wealth, from a rise in house prices for example, will not be spent all at once, but spread over the remaining lifetime. But such an increase in house prices also raises the costs facing first-time buyers or those trading up to larger properties, which may curb overall non-housing expenditure.⁽²⁾

The relationship between stock market wealth and consumption is also complex. An increase in stock market wealth may affect consumption in a similar way to a rise in housing wealth. But the dynamics of the relationship between an increase in stock market wealth and consumption may be different.

Housing wealth and consumption

Estimates by economists at the Federal Reserve⁽³⁾ suggest that over the past five years, 40% of the growth in mortgage debt originated as financing home equity withdrawal. About half of that reflects sellers realising capital gains, while the new buyers take out larger mortgages (than the seller had at the point of the sale). The average capital gain on house sales over the past five years is about \$25,000. The other half of equity withdrawal reflects unrealised capital gains taken out through, for example, cash-out refinancing.

A more detailed report on home equity lending is contained in an article by Canner, Durkin and Luckett.⁽⁴⁾ The authors estimate that at end-1997, US homeowners' outstanding equity debt, at \$420 billion, amounted to 25% of total non-mortgage consumer debt.

Although house prices have not risen as strongly as stock markets, economists at the Federal Reserve⁽⁵⁾ see a different pattern of consumption out of housing wealth than out of stock market wealth. Housing wealth is spent more quickly, and on larger-ticket items. Permanent consumption is boosted by about 5% of the value of the increase in housing wealth, but by only 3%–4% of the increase in stock market wealth, which also tends to be spent more slowly. One explanation may be that house prices are much less volatile, so an increase in housing wealth will be more likely to be viewed as permanent. Brayton *et al*⁽⁶⁾ find that the elasticity impact on consumption of changes in property wealth is about four times larger than for changes in stock market wealth.

(1) See 'Stock market fluctuations and consumption behaviour: some recent evidence', *OECD Working Paper*, No 208, December 1998.

(2) *Bank of England Inflation Report*, August 1999, pages 15–16.

(3) Speech by Chairman Alan Greenspan (November 1999), 'Mortgage markets and economic activity', before a conference on Mortgage Markets and Economic Activity, sponsored by America's Community Bankers, Washington DC.

(4) 'Recent developments in home equity lending', *Federal Reserve Bulletin*, April 1998.

(5) Speech by Chairman Alan Greenspan, *op cit*.

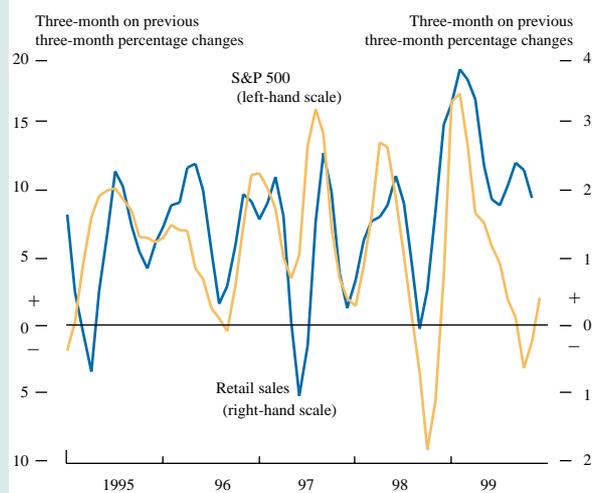
(6) 'The role of expectations in the FRB/US macroeconomic model' published in the *Federal Reserve Bulletin*, April 1997.

Stock market wealth and consumption

How much wealth has been accumulated in the United States, and what is the effect on spending? The empirical evidence is mixed, and there is no clear consensus on this issue. A further problem is that the pattern of stock ownership has changed markedly over the 1990s and older studies may not reflect current behaviour.

As noted above, the relationship between the stock market and spending is complex. Chart B plots three-month on three-month moving averages of retail sales and the S&P 500 index. It suggests that retail sales have moved in tandem with the stock market. But the econometric evidence is mixed. For example Ludvigson and Steindel⁽¹⁾ use an array of econometric techniques to investigate the relationship between consumption and the stock market. They find no evidence of a stable relationship between aggregate consumer spending and changes in aggregate household wealth. They accept that recent equity gains 'have surely provided some support for consumer spending', but conclude that the unstable econometric relationship cautions against including stock market effects in macroeconomic forecasts.

Chart B
Retail sales



Source: Primark Datastream.

Specifically the authors find that the dynamic response of consumption growth to an unexpected change in wealth is very short-lived, so forecasts for consumption growth one or more quarters ahead are not typically improved by including changes in wealth.

Starr-McCluer⁽²⁾ used survey evidence to investigate the apparently weak links between stock market wealth and

consumer spending. Her paper presents evidence from the Michigan SRC Survey of Consumers (conducted between July and September 1997), which interviewed households owning stocks. The results are 'broadly consistent with life-cycle saving and a modest wealth effect: the vast majority of stockholders reported no appreciable effect of stock prices on their spending or saving, but many mentioned 'retirement saving' in explaining their behaviour'. Respondents seemed to view stock gains as part of long-term savings, with few immediate implications for spending. Fears of a reversal in gains did not seem to inhibit spending.

Conclusions

The IMF (May 1999 *World Economic Outlook*) calculated that most of the rise in net wealth in the US household sector between 1994 and 1998 was accounted for by the rise in the stock market. IMF estimates show that aggregate real estate wealth remained fairly stable at around 150% of disposable income over this period, while equity wealth rose from about 200% of disposable income in 1994 to nearly 300% in 1998. Nonetheless the housing market is linked to the substantial growth in household debt seen over recent years, which may have fuelled consumption.

The distribution of housing and stock market wealth may be an important influence on the pattern of consumption. Tracy, Schnieder and Chan⁽³⁾ found that in the United States 'most corporate equity is held by the wealthiest 10% of the population while more than half of all households hold no corporate equity through any channel. In contrast, a large majority of households own real estate, which represents roughly two thirds of their overall assets'.

However, the authors found that equities were an increasingly important part of household wealth; the proportion of households owning equities rose from 32% in 1989 to 42% in 1995 (and to 48.8% in 1998 according to the Survey of Consumer Finances). Also, in 1984 the share of real estate in household assets was four times as large as the share of equities. By 1998, equities accounted for 28% of household assets, and real estate 27%.

In conclusion, econometric evidence on the effect of increased wealth on spending is mixed, but changes in housing wealth appear to have a larger and more direct impact on short-term consumption than changes in stock market wealth.⁽⁴⁾

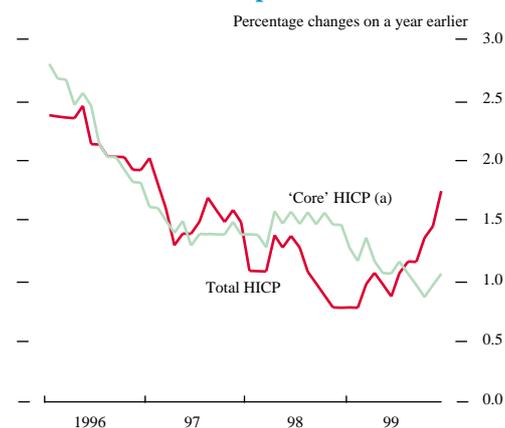
(1) 'How important is the stock market effect on consumption', *Federal Reserve Bank of New York (FRBNY) Economic Policy Review*, July 1999.

(2) 'Stock market wealth and consumer spending', Board of Governors of the Federal Reserve System, *Finance and Economics Discussion Series*, No 1998-20, April 1998.

(3) 'Are stocks overtaking real estate in household portfolios?', *FRBNY Bulletin*, April 1999.

(4) See for example Poterba and Samwick (1995), 'Stock ownership patterns, stock market fluctuations and consumption', *Brookings Papers on Economic Activity*; Blinder and Deaton (1985), 'The time series consumption function revisited', *Brookings Papers on Economic Activity*; Campbell and Mankiw (1989), 'Consumption, income and interest rates: reinterpreting the time series evidence' in Olivier Blanchard and Stanley Fisher (eds), *NBER Macroeconomics Annual*.

Chart 17
Euro-area consumer prices



Source: Primark Datastream.

(a) All items excluding energy, food, alcohol and tobacco.

Chart 18 (a)
Implied distribution for euribor three-month interest rates

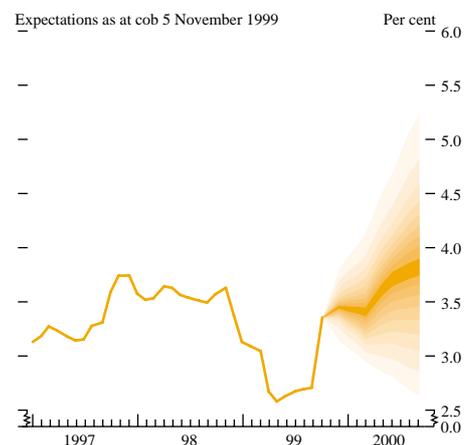
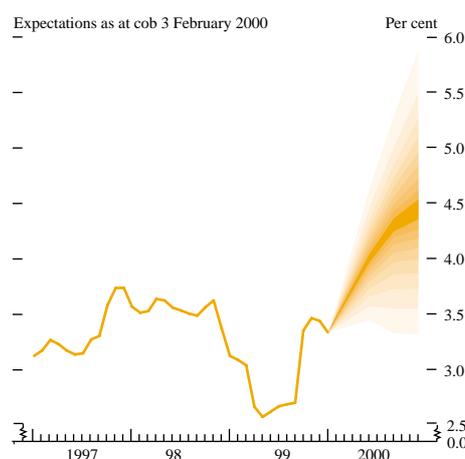


Chart 18 (b)
Implied distribution for euribor three-month interest rates



Sources: LIFFE and Bank of England.

The chart depicts the probability distribution of short-term interest rates, and is rather like a contour map. So at any given point, the depth of shading represents the height of the probability density function implied by the markets over a range of outcomes for short-term interest rates. The markets judge that there is a 10% chance of interest rates being within the darkest, central band at any date. Each successive pair of bands covers a further 20% of the probability distribution until 90% of the distribution is covered. The bands widen as the time horizon is extended, indicating increased uncertainty about interest rate outcomes.

refinancing rate was increased by 50 basis points, to 3%, on 4 November and by a further 25 basis points, to 3¼%, on 3 February. The ECB cited a number of concerns over medium-term price stability to explain the February rate rise: 'monetary and credit developments contributed to the upside risks to price stability'. The three-month moving-average annual growth rate of M3 rose to 6.1% in December 1999, above the ECB reference value of 4.5%. Growth in private sector credit was strong, at 10.5%, in the year to December. 'Developments in the exchange rate of the euro' were also cited, due to the potential impact on import prices. The upside risks to inflation from both of those developments were seen as important, given the improved prospects for both the world and euro-area economies. Further, although the ECB had been expecting a short-term rise in inflation, 'inflation rates are now approaching higher levels than expected earlier, and larger and more protracted commodity and producer price increases are heightening the risk of second round effects. Against this background it is crucial for wage negotiators to be able to rely on the maintenance of price stability in the medium term'.⁽¹⁾

Charts 18 (a) and (b) show the implied risk-neutral probability distribution of euro-area short-term interest rates expectations, derived from options.⁽²⁾ The darkest band in Chart 18 (a) shows the outcome considered most likely by financial markets following the 50 basis point tightening on 4 November, which suggested that market expectations at that time were for a continued monetary tightening in 2000, with three-month interest rates expected to rise to around 3.8% by September 2000. However, following stronger-than-expected activity data, interest rate expectations subsequently increased further. Following the 25 basis point rise on 3 February (see Chart 18 (b)), the implied mean expectation of three-month interest rates by September 2000 was 50 basis points higher, at around 4.3%. And the probability distribution has become more positively skewed, suggesting that market participants are attaching a greater probability to a sharp increase in interest rates than to a sharp reduction.

The improvement in euro-area prospects partly reflects the upturn in Germany during the second half of 1999. Preliminary estimates for Q4 suggest that the economy grew by 1.4% in 1999 as a whole. The recovery has been led by an increase in exports. Although total employment growth remains weak, that disguises a stronger increase in private sector employment as public employment schemes wind down. The increase in employment, together with the recently announced tax cuts, could help to promote consumption growth.

German GDP grew by 1.4% in 1999, following growth of 2.2% in the previous year. But growth in the second half of 1999 picked up. Industrial production in October and November was below market expectations, but the German Finance Ministry pointed out that the data are likely to be revised upward.

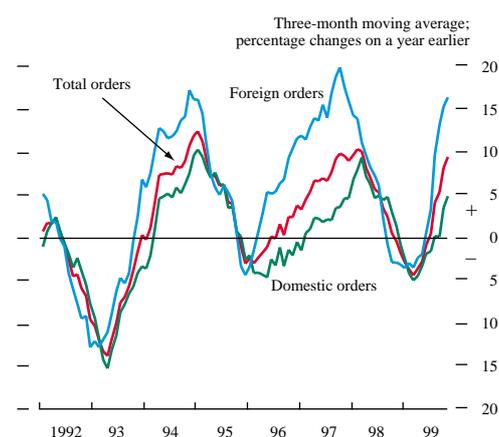
Forward-looking data point to faster growth in 2000.

Manufacturing sector orders rose by 1.2% in November, an increase

(1) ECB Press Conference, Introductory statement by Willem F Duisenberg, President of the European Central Bank, and Christian Noyer, Vice-President of the European Central Bank, Frankfurt am Main, 3 February 2000.

(2) Using techniques described in Clews, R, Panigirtzoglou, N and Proudman, J, 'Recent developments in extracting information from options markets' in this *Quarterly Bulletin*, pages 50–60.

Chart 19
Germany: manufacturing orders



Source: Primark Datastream.

Chart 20
German employment



Source: Primark Datastream.

Table C
Elements of German 'Tax Reform 2000'

	Effective from:	Headline measures	Net reductions (DM billions)
Income taxes	2003	Increase of tax-free threshold to DM14,500. Reduction of entry tax rate to 17% and reduction of top tax rate to 47%.	13.1
	2005	Increase of tax-free threshold to DM15,000. Reduction of entry tax rate to 15%, reduction of top tax rate to 45% and reductions of other tax rates.	21.1
			34.2
Corporate taxes	2001	Corporate taxes on retained (distributed) earnings will be reduced to 25% from 40% (30%).	8.3
Total			42.5

Source: Bundesministerium der Finanzen.

of 12.5% relative to a year earlier. That was driven largely by foreign orders, which rose by 3.6% in November; on an annual basis foreign orders rose to pre-Asian crisis levels (see Chart 19). The rise in orders was mirrored by an improvement in business confidence. The Ifo index, measuring business sentiment in western Germany, rose to 99.6 in December, its highest level since December 1997. The index had increased strongly, from 96.1 in October, as a result of the particularly strong rise in assessments of the current business situation, although assessments of future prospects improved as well.

Employment data were suspended for most of 1999. Recently published data show that the level of employment was 70,000 lower in October 1999 than at the end of 1998 (see Chart 20). But that decline was influenced by a reduction in government-sponsored employment promotion schemes, which reduced employment by 130,000 over the same period. Similarly, recent unemployment rates have been inflated by a decline in both vocational training schemes and government employment schemes. The employment level rose by 62,000 between December 1998 and October 1999 after adjusting for the effects of these schemes.

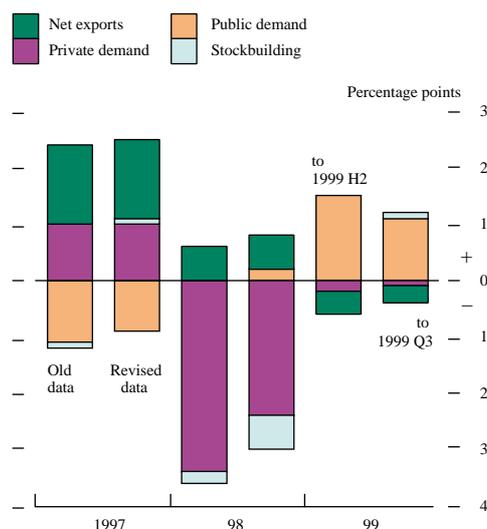
The German government announced further tax reforms just before Christmas. Table C summarises the composition and timing of the 'Tax Reform 2000', which will reduce the tax burden by an estimated DM42.5 billion (1.1% of GDP). DM34.2 billion of the newly announced income tax cuts will only come into effect in 2003–05, but a net decline in corporate taxes worth DM8.3 billion will come into effect in 2001. On top of these new measures, the government has brought forward to 2001, from 2002, income tax cuts worth DM27.4 billion. The tax cuts are expected to be funded partly by higher growth. Germany's fiscal deficit has fallen markedly in recent years, to 1.2% of GDP in 1999, from 1.7% in 1998 and 2.6% in 1997.

Japanese GDP fell by 1.0% in Q3. However, back-data were revised up significantly. Private demand was still subdued. Workers' real household expenditure fell in Q4 and the Tankan survey suggested a weak investment outlook, notwithstanding the continued recovery in industrial production. Despite the yen's appreciation, exports were stronger than expected in Q4, helped by the Asian recovery.

After two consecutive quarterly rises, Japanese GDP fell by 1.0% in Q3. Although the decline was larger than markets expected, there were substantial revisions to back-data. GDP growth was revised up by 0.9 percentage points in 1999 Q2 (to 1.0%). So even after the decline in Q3, GDP grew by 1.0% in 1999 Q3 relative to a year earlier. Overall, the revisions to GDP growth reflected stronger private consumption and public investment profiles. Net exports were also stronger (see Chart 21).

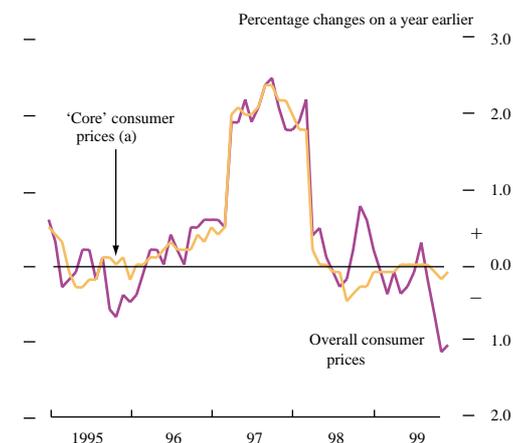
Headline consumer prices fell by 1.1% in December, relative to a year earlier. Prices were unchanged in Q4 as a whole. But the decline in consumer prices largely reflects base-year effects. Fresh food prices were unusually high in 1998 Q4 following a typhoon. Core consumer prices (which exclude food) fell by 0.1% in the year to December (see Chart 22) and have basically remained unchanged since early 1999. Goods and services prices show a similar picture. Goods prices fell by 2.4% in the twelve months to

Chart 21
Contributions to annual Japanese GDP growth



Source: Economic Planning Agency.

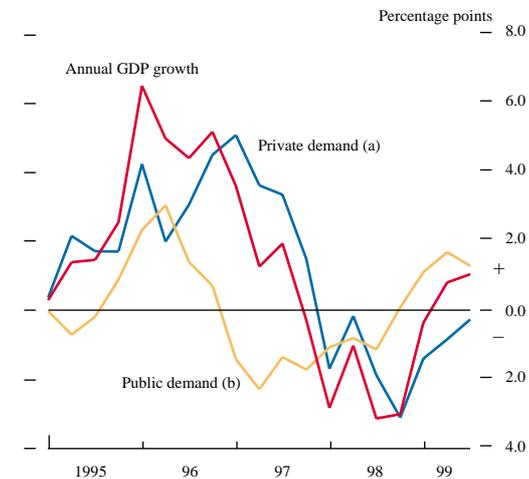
Chart 22
Japanese consumer prices



Source: Primark Datastream.

(a) All items excluding fresh food.

Chart 23
Contributions to annual Japanese GDP growth



Source: Economic Planning Agency.

(a) Private consumption and non-residential investment.
(b) Government consumption, investment and residential investment.

December while services prices rose by 0.2%. As with core prices, services prices have been largely unchanged since early 1999.

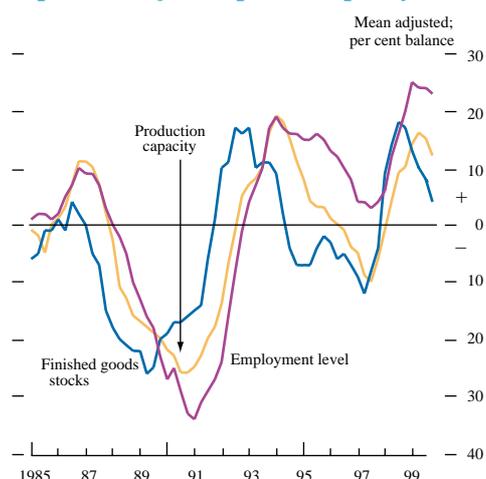
Chart 23 decomposes Japanese final domestic demand into two components: 'public demand' and 'private demand'. Private demand consists of private consumption and non-residential investment. Public demand attempts to measure the impact of fiscal expansion. It represents around one quarter of final domestic demand. Residential investment is included in public demand because the housing market has been considerably influenced by government policy measures. For example, housing starts increased in 1996 ahead of the consumption tax rise in April 1997 and subsequently fell. More recently, mortgage interest tax relief and the subsidised home loan rates included in the November 1998 supplementary budget appear to have encouraged residential investment in 1999.

Chart 23 shows how GDP growth in 1999 was driven by a sharp increase in public demand. It seems that the government was able to implement spending from the November 1998 supplementary budget fairly quickly. Public demand grew by 3.0% in 1999 Q1, contributing 1.0 percentage points to annual GDP growth. It then grew by 2.7% in 1999 Q2, contributing 1.2 percentage points to annual GDP growth. Conversely, private demand was much weaker, contributing negatively to annual GDP growth in 1999 Q3.

Fiscal policy should remain supportive in 2000. In November the Japanese government announced a supplementary budget worth ¥18 trillion (3.6% of GDP). The package was ¥0.2 trillion larger than the November 1998 supplementary budget, comprising ¥6.8 trillion in public infrastructure projects and ¥7.4 trillion in measures to support small businesses, such as an extension of the loan guarantee scheme from March 2000 to March 2001. The initial budget for fiscal year 2000 was also mildly expansionary. Excluding debt repayment, general expenditure is scheduled to increase by 2.6% to around ¥48 trillion in fiscal year 2000, compared with the initial fiscal year 1999 budget. The supplementary budget is expected to support activity from 2000 Q1 onwards, which should help to support the recovery trend. But with the OECD projecting gross debt levels to rise to 114% of GDP by 2000, room for further fiscal expansion may be limited.

The December Tankan survey of business expectations suggested that, notwithstanding the increase in industrial production, which grew by 0.8% in Q4 after a rise of 3.9% in Q3, the investment outlook may remain constrained by the existence of spare production capacity in Japanese industry. Chart 24 shows the survey responses of 'principal' enterprises (large firms). While inventory adjustment seems to have been largely completed, measures of excess production capacity and employment levels still remain significantly above their long-run average levels. It is therefore perhaps not surprising that investment intentions remain weak. On an all-enterprise measure, firms expect investment to have declined by 9.8% in fiscal year 1999, little changed from the June 1999 Tankan survey (which included the first estimates for 1999). Although firms are projecting an increase in profitability in the second half of fiscal year 1999, they appear more concerned to improve their balance sheet positions than to increase capacity.

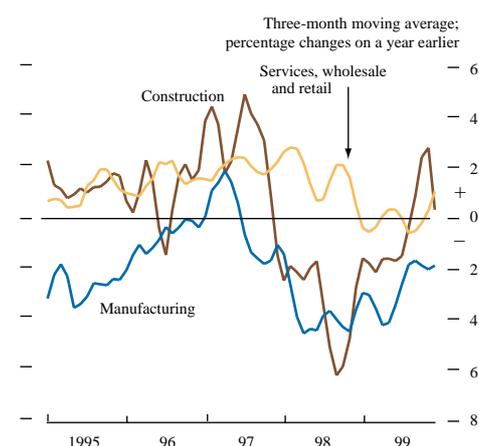
Chart 24
Japanese major corporate capacity indicators^(a)



Source: Bank of Japan Tankan survey.

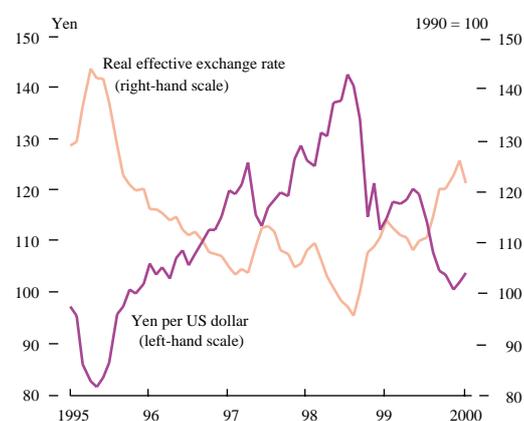
(a) 'Excessive' minus 'insufficient'.

Chart 25
Japanese employment by sector



Source: Primark Datastream.

Chart 26
Japanese exchange rates



Source: Bank for International Settlements.

Inventory levels have continued to act as a leading indicator of excess capacity, but the lag between movements in excess inventory levels and excess employment and capacity levels seems to have fallen in recent years. In 1989, inventory levels led by around 18 months, but this had been shortened to around 3 months by 1997 Q1. Looking ahead, a continuation of the short lag could suggest that the outlook for investment might be stronger than the Tankan survey suggests. The recent acceleration in machinery orders is consistent with such a picture. Having fallen in the first half of 1999, core machinery orders (excluding shipbuilding and electrical power) rose by 3.1% in Q3 and by 4.7% in the first two months of Q4.

Having grown by 0.9% and 1.1% in the first two quarters of 1999 respectively, private consumption fell by 0.3% in the third quarter. Consumption growth in the first half of the year was boosted by a series of temporary fiscal measures (such as the shopping voucher scheme) as well as an improvement in consumer confidence (perhaps reflecting the recapitalisation of the banking system). However, with the impact of such measures appearing to have levelled off, consumption now seems to be following income more closely. Workers' real household spending fell by 3.1% in Q4, relative to a year earlier. That reflected a decline in real incomes of 3.6% relative to a year earlier, due to a sharp fall in winter bonuses.

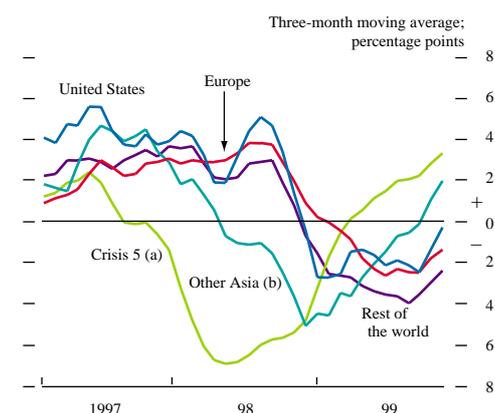
The labour market has stabilised somewhat. The unemployment rate averaged a record 4.7% for 1999 as a whole; but having peaked in June and July, it remained roughly 4.6% between August and December. That small improvement reflects two factors. First, a rise in inactivity offset the decline in overall employment (which fell by 0.8% in 1999). Second, while employment in manufacturing and services sectors has reflected pressures to restructure, employment in the construction sector has been influenced by fiscal policy, if only temporarily (see Chart 25). Employment in the construction sector increased relative to a year earlier from July, before declining by 5.2% in the twelve months to December as public works projects tailed off.

The impact of labour market restructuring on personal income remains unclear. There has been an increase in employment for part-time workers, albeit from a low base, and a decline in jobs for full-time workers. The number of full-time employed workers was 0.9% lower in December than a year earlier, while the number of part-time employees increased by 2.6%, reaching some 20% of total employment. But as part-time jobs tend to be relatively lower-paid, aggregate income could still decline even if the total number of people employed stabilises.

Net exports have been stronger than might have been expected, with the yen appreciating by 9% against the dollar in the twelve months to January. The real effective exchange rate has appreciated by less, but remains some 6% higher than a year ago (see Chart 26). But exports rose by 5.6% in the twelve months to November, their first annual increase for 13 months, and by 3.4% in December.

The international environment article in the November 1999 *Quarterly Bulletin* pointed out that one factor limiting the influence of yen appreciation on exports was the ability and willingness of

Chart 27
Japan: contributions to annual export growth



Source: Primark Datastream.

(a) Indonesia, Malaysia, the Philippines, South Korea and Thailand.
 (b) Hong Kong SAR, Peoples' Republic of China, Taiwan and Singapore.

Table D
Forecasts for emerging markets GDP growth

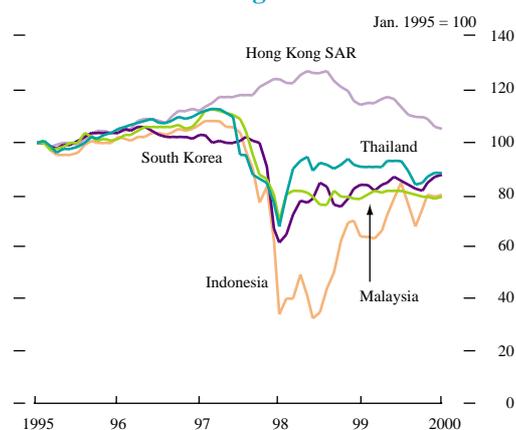
Per cent

	1999		2000	
	New (a)	Revision (b)	New	Revision
Indonesia	-0.1	-0.2	4.0	-0.1
Malaysia	5.0	0.5	6.0	0.5
The Philippines	0.9	0.0	4.0	0.3
South Korea	9.7	1.1	6.9	0.7
Thailand	4.3	0.2	5.1	0.6
Argentina	-3.2	0.2	3.2	0.5
Brazil	0.3	0.3	3.0	0.0
Mexico	3.6	0.4	4.3	0.3

Source: Consensus Economics.

(a) January 2000 for Asia and December 1999 for Latin America.
 (b) Compared with November 1999 for Asia and October 1999 for Latin America.

Chart 28
Real effective exchange rates



Source: J P Morgan.

Japanese manufacturers to reduce export prices in order to maintain volumes.⁽¹⁾ Chart 27 suggests that the recovery in the Asian region has also helped. Having troughed in early 1998, export growth to those Asian economies first affected by the crisis picked up from January 1999 onwards. Japanese exports to the 'Crisis 5'⁽²⁾ economies rose by 27.8% relative to a year earlier in December, contributing 3.5 percentage points to annual export growth. Exports to Asian countries have been boosted by the relatively high degree of intra-industry trade between Japan and the region (see below).

Emerging market economies were stronger in 1999 than expected, even at the time of the November Quarterly Bulletin. Growth in Asia is expected to be stronger in 1999 and 2000 than in Latin America, but that at least partly reflects the fact that Latin America experienced a slowdown later. Emerging market bond spreads continued to narrow gradually towards pre-crisis levels.

Growth in the emerging market economies proved much stronger in 1999 than had been expected, even at the time of the previous *Quarterly Bulletin*. Table D shows the latest *Consensus Forecasts* figures for GDP growth in the Asian crisis countries and the three major Latin American ones. Growth in Asia was generally higher than in Latin America in 1999 and is forecast to remain so in 2000, partly reflecting the fact that the Latin American crisis (focused around Brazil) occurred more recently than the Asian one and recovery in the region is less well advanced. The most significant upward revisions to growth have been in South Korea, for both years. Indonesia is the exception to the pattern, with 1999 and 2000 growth revised downwards.

The recoveries in Asia and Latin America differ not only in their timing but also in their dependence on external factors. For example, exports make up 51% of GDP on average in the four Asian crisis economies,⁽³⁾ compared with 13% of GDP in Latin America. As a result, although export growth in US dollar terms in Asia and Latin America was of similar magnitude in 1999 (around 7% and 5% respectively), it made a considerably larger contribution to GDP growth in Asia than in Latin America.

The four crisis economies have benefited from both continued strong world demand and significant real exchange rate depreciation. Real effective exchange rates remain 20% below their levels at the beginning of 1997, as shown in Chart 28. In relative terms, however, the crisis countries' competitive position *vis-à-vis* each other has broadly returned to where it was at the beginning of 1997. The change in Indonesia's real exchange rate is striking: a large part of the gain from the initial nominal devaluation was quickly eroded in the face of stronger domestic inflation. At an earlier stage, these real exchange rate trends had heightened concerns about the sustainability of the *de facto* Chinese peg, but these have subsided in recent months.

The policy-led recovery in Japan and the bounceback in Asia have reinforced each other due to regional trading patterns. Table E

(1) This factor still seems important. Export prices fell by 7.7% in the year to December.

(2) Indonesia, Malaysia, the Philippines, South Korea and Thailand.

(3) Indonesia, Malaysia, South Korea and Thailand. The Philippines is excluded as the Asian financial crisis did not have as severe an impact there as in the other four countries.

Table E
Bilateral trade intensity index^(a) 1998

	Euro area	United States	Japan	North Asia	Crisis 5
Euro area	1.8	0.5	0.4	0.3	0.3
United States	0.6	n.a.	1.8	0.8	1.2
Japan	0.5	1.9	n.a.	1.8	2.5
North Asia (b)	0.4	1.3	2.2	3.1	2.2
Crisis 5 (c)	0.4	1.3	2.6	2.5	1.7

n.a. = not available.

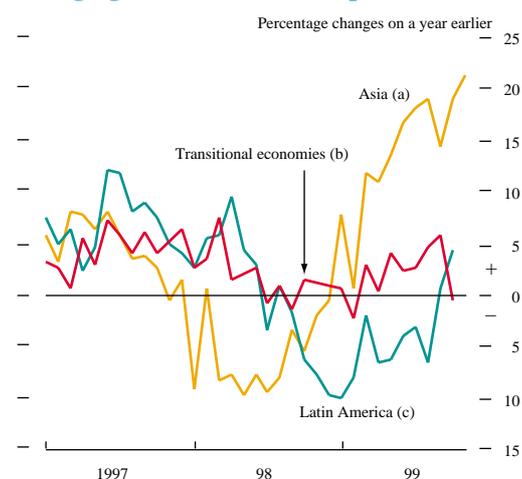
Source: IMF.

(a) Index calculated as share of exports going to a country relative to that country's share of world imports.

(b) Hong Kong SAR, Peoples' Republic of China and Singapore.

(c) Indonesia, Malaysia, the Philippines, South Korea, and Thailand.

Chart 29
Emerging markets industrial production



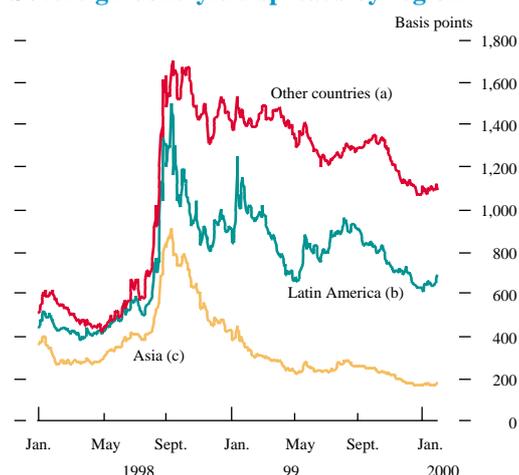
Source: Primark Datastream.

(a) Malaysia, Singapore, South Korea, Taiwan and Thailand.

(b) The Czech Republic, Hungary, Poland and Russia.

(c) Argentina, Brazil, Chile, Mexico, Peru and Venezuela.

Chart 30
Sovereign bond yield spreads by region



Source: J P Morgan, EMBI global constrained measure.

(a) Bulgaria, Croatia, Greece, Hungary, Russia and Turkey.

(b) Argentina, Brazil, Chile, Columbia, Ecuador, Mexico, Panama, Peru and Venezuela.

(c) Malaysia, Peoples' Republic of China, the Philippines, South Korea and Thailand.

shows bilateral indices of trade intensity. The index measures the share of exports to one country, relative to that country's share of world imports. The table shows that Japan trades intensively with the United States, North Asia and the Crisis 5, and that North Asian countries trade more intensively with each other than do the euro-area countries. These trade patterns reflect trade specialisation within the Asian region which has promoted intra-industry trade.⁽¹⁾ So as output expands in Japan, intermediate goods or components are imported from the Asian region.

Of the major economies in Latin America, only Brazil has experienced a similar depreciation in its real exchange rate to that in the Asian countries. Furthermore, the decline in non-oil commodity prices in 1998 and most of 1999 resulted in an adverse terms of trade shock, limiting competitiveness gains. Argentina, which operates a currency board, has endured a real effective appreciation, partly because of a strong export dependency on Brazil. Mexico has experienced a substantial real appreciation but export growth has remained strong because of close integration with the buoyant US economy.

The differing growth paths in Asia and Latin America are apparent in industrial production data (see Chart 29). While Asia has experienced a 'V'-shaped path, as production fell sharply after the crisis before recovering strongly, Latin American industrial production has followed more of an 'L'-shaped path to date. The decline in output was smaller, and the subsequent increase in output has also been smaller. However, output in Latin America accelerated in Q4, growing by 4.2% in the twelve months to October, and both Argentinian and Brazilian industrial production rose in November relative to a year earlier.

Sovereign bond spreads declined in all emerging market economies (see Chart 30). That reduction reflects some combination of the following developments in emerging market economies: lower levels of outstanding debt overall (although this has almost exclusively occurred in Asia); an absence of further liquidity crises; progress on fiscal and structural reforms; and an improved macroeconomic outlook.

(1) See McGiven, A. 'Trade with newly industrialised economies', February 1996 *Quarterly Bulletin*, pages 69–78.