The international environment

- *This article discusses developments in the international environment since the August 2000* Quarterly Bulletin,[1] *as well as the outlook for inflation and output over the next two years.*

- *World GDP is estimated to have grown by 1.0% in the second quarter, a deceleration from 1.5% in the first quarter. Growth rates remained strong in the major economies, but fell in the emerging Asian economies. World industrial production growth has continued to rise.*

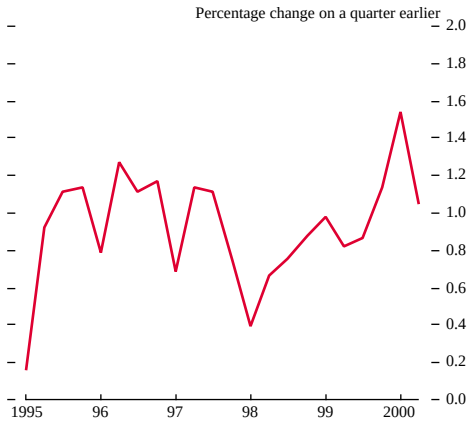
- *In the United States, GDP grew strongly in Q2 but slowed in Q3; final domestic demand growth moderated in both quarters. In the euro area, quarterly GDP growth in Q2 remained at 0.9% for the fourth consecutive quarter. The Japanese economy grew by 1.0% in Q2, the second consecutive quarter of positive growth.*

- *Oil prices have risen further, amid uncertainties about the future balance of demand and supply. Consumer price inflation rates have reflected this to a varying degree. Headline inflation has risen in the euro area but has fallen in the United States over the period. Non-energy inflation rates have risen in both economies, notably in the euro area.*

- *Official interest rates have risen in Japan and the euro area since the previous* Quarterly Bulletin. *The Bank of Japan ended its zero interest rate policy by raising rates to 0.25%, and the ECB increased rates in two steps, by 0.5 percentage points in total, to 4.75%. The FOMC has maintained the Federal funds target rate at 6.5%.*

- *The IMF has raised its projection of world GDP growth to 4.7% in 2000, the highest growth rate in more than ten years, and to 4.2% in 2001. These revisions reflect continued robust growth in the major economies, and a strengthening of economic fundamentals in many emerging markets. Since the previous* Quarterly Bulletin, *projections published by Consensus Economics for GDP growth in most regions have been revised upwards for 2000, though are mixed for 2001, perhaps partly reflecting the expected effects of higher oil prices. World trade is forecast by the IMF to grow by 10% in 2000, slowing to around 8% in 2001. The balance of risks around most forecasts remains on the downside, largely from the effects of a possible fall in asset market prices and from the uncertain impact on activity of higher oil prices.*

Chart 1
World GDP



Source: Bank of England.

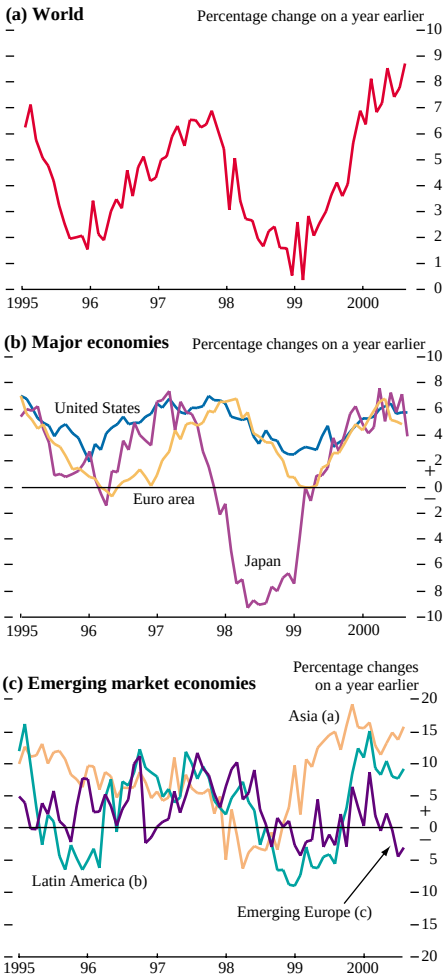
Demand and output

Output growth

World GDP is estimated to have grown by around 1.0% in 2000 Q2. This was slower than the quarterly growth rate of 1.5% in Q1, which was the highest growth rate for more than five years (see Chart 1).[2] The pattern of growth was quite evenly balanced across the major industrialised economies. In the United States, GDP rose by 1.4% in the second quarter, while in the euro area GDP growth remained at 0.9% for the fourth consecutive quarter. The Japanese expansion continued into its second quarter in Q2,

(1) Based on data up to 31 October (the August *Quarterly Bulletin* was based on data up to 28 July 2000).
(2) Numbers for world GDP growth are estimates based on quarterly data from national sources or quarterly data estimated from annual data reported in the IMF *World Economic Outlook*, September 2000.

Chart 2
Industrial production



Sources: Primark Datastream and Bank of England.

(a) India, Malaysia, South Korea, Taiwan and Thailand.
(b) Argentina, Brazil, Chile, Mexico, Peru and Venezuela.
(c) Czech Republic, Hungary, Poland, Russia and Turkey.

Table A
Forecasts for GDP growth

Per cent

	IMF (a)				Consensus Economics (b)			
	2000		2001		2000		2001	
World	4.7	*+0.5*	4.2	*+0.3*	n.a.		n.a.	
United States	5.2	*+0.8*	3.2	*+0.2*	5.2	*+0.4*	3.6	*+0.5*
Japan	1.4	*+0.5*	1.8	*+0.0*	2.0	*+0.5*	2.0	*+0.4*
Euro area	3.5	*+0.3*	3.4	*+0.2*	3.4	*+0.0*	3.1	*-0.1*

n.a. = not available.

(a) IMF *World Economic Outlook*, September 2000; (differences from May 2000 in italics; percentage points).
(b) *Consensus Forecasts*, October 2000; (differences from July 2000 in italics; percentage points).

Table B
Consensus forecasts for GDP growth(a)

Per cent

	1999		2000		2001	
North East Asia (b)	7.6	*+0.0*	8.0	*+0.2*	6.6	*+0.0*
South East Asia (c)	3.2	*+0.0*	5.6	*+0.5*	4.9	*-0.3*
Latin America (d)	0.0	*-0.1*	3.9	*+0.2*	4.2	*+0.1*
Eastern Europe (e)	1.1	*+0.0*	5.0	*+1.2*	4.2	*+0.2*

(a) October 2000; (differences from July 2000 in italics; percentage points).
(b) Peoples' Republic of China, Hong Kong SAR, South Korea and Taiwan.
(c) Indonesia, Malaysia, Singapore, Thailand and the Philippines.
(d) 14 countries, including Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.
(e) 19 countries, including the Czech Republic, Hungary, Poland, Russia and Turkey.

with GDP rising by 1.0%. In the emerging Asian economies, GDP growth is estimated to have slowed to 1.4% in Q2 from 2.3% in Q1. This may have reflected the impact of oil price rises on economic activity, but probably also the tailing-off of the earlier rapid recovery from the financial crises of 1997–98.

The annual growth rate of world industrial production has continued to rise, following the sharp recovery from the emerging market crises, and is estimated at 8.7% in August (see Chart 2a).(1) Since the previous *Quarterly Bulletin*, industrial production growth has moderated somewhat in the United States and the euro area. Japanese industrial production growth has been robust but erratic (see Chart 2b). In the emerging markets, industrial production growth has remained strong outside the emerging European economies, and has picked up in non-Japan Asia(2) (on the basis of data available up to August). (See Chart 2c.)

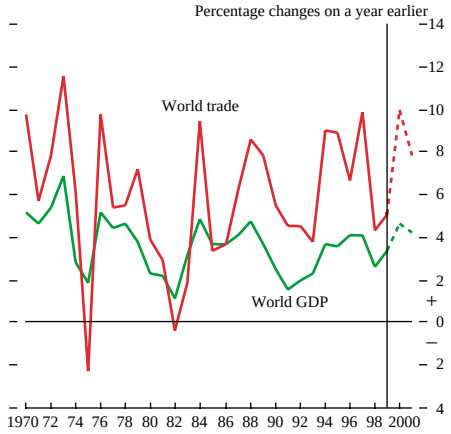
Oil prices have risen by about $5 per barrel to around $31 per barrel since the August *Quarterly Bulletin*. It is unclear to what extent higher oil prices have contributed to signs of moderating growth, though they would be expected to have a negative effect on world GDP growth. High oil prices would lead to a deterioration in the terms of trade for oil-importing countries, with higher prices dampening real incomes and consumption. These effects may not be fully offset by the corresponding increase in real incomes and demand in oil-exporting countries. Moreover, a higher oil price would increase inflationary pressures, which might precipitate policy tightening, particularly if it led to a persistent rise in inflation expectations. The IMF estimates that a sustained $5 per barrel increase in the price of oil would reduce output in the major industrialised countries by 0.2% after one year, and would increase consumer price inflation by 0.2–0.4 percentage points.(3)

The IMF has revised up its projections for world GDP growth since its previous forecast six months ago (see Table A).(4) This reflects strong growth outturns in the major economies, and a perceived improvement in economic fundamentals in the emerging markets. The IMF projects world growth of 4.7% in 2000, the highest rate of growth since 1988, slowing to a little over 4% in 2001. These forecasts are broadly in line with the Monetary Policy Committee's central projection in the November 2000 *Inflation Report*.

The IMF forecast for GDP growth in the United States has been revised upwards to 5.2% in 2000, 0.8 percentage points higher than the previous IMF forecast, but slowing to 3.2% in 2001 (see Table A). The IMF has also raised its growth projections for the euro area to around 3½% in both 2000 and 2001, expecting (as in their previous forecast) the euro area to grow more strongly than the United States in the second year. The IMF has raised its growth projection for Japan, and now expects GDP to rise by 1.4% in 2000 and 1.8% in 2001. The Policy Board of the Bank of Japan has published forecasts for Japanese GDP and prices. The majority of

(1) Numbers for industrial production growth are estimates based on data from Primark Datastream.
(2) Industrial production growth in the Peoples' Republic of China, which is not included in Chart 2c, has been particularly strong.
(3) Relative to a baseline assumption for oil prices of an average price of $26.53 in 2000 and $23.00 in 2001. The IMF simulation includes monetary policy reactions to higher inflation rates.
(4) IMF *World Economic Outlook*, September 2000.

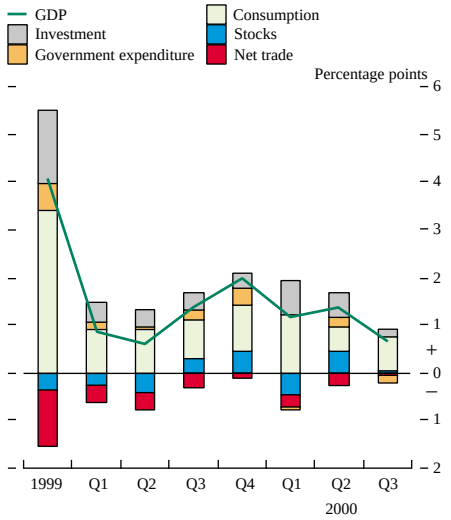
Chart 3
World trade and GDP growth



Note: Dotted lines shows projections from the IMF *World Economic Outlook*, September 2000.

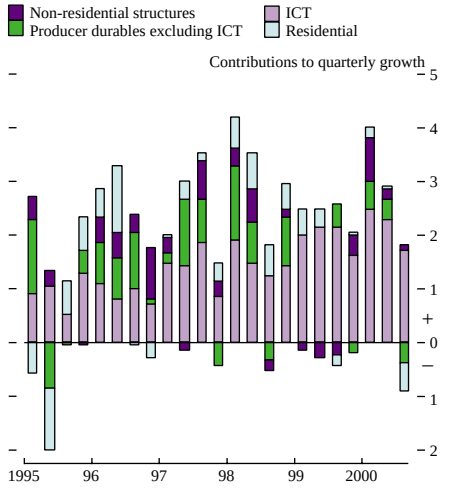
Source: IMF.

Chart 4
United States: contributions to GDP growth



Source: Primark Datastream.

Chart 5
US components of real investment



Source: Primark Datastream.

Board members projected GDP growth of between 1.9% and 2.3% in fiscal year 2000.(1)

Consensus Economics publish projections based on a survey of forecasters each month. During the past three months, Consensus projections for growth in 2000 have been revised up further, despite oil price rises (see Tables A and B). But revisions to growth projections for 2001 have been mixed, with upward revisions for the United States, Japan and non-Asian emerging markets partly offset by downward revisions to growth projections for the euro area and South East Asia. In contrast to the IMF projection, the Consensus forecast is for growth in the United States to remain above that in the euro area in 2001. The pattern of revisions to the Consensus forecasts may partly reflect expectations of different regional effects on real incomes and demand from recent oil price rises, though the downward revision to the South East Asian growth projection seems largely due to increased concern about the political situation in some countries.

World trade growth rose to an estimated quarterly rate of 3.2% in Q2 from 2.7% in Q1, in contrast to slowing world GDP growth. The IMF has revised up its forecast of world trade growth for 2000 as a whole by around 2 percentage points to 10%, but expects world trade growth to then slow to around 8% in 2001 (see Chart 3). Again, these projections are broadly similar to the assumptions underlying the MPC's central projection.

United States

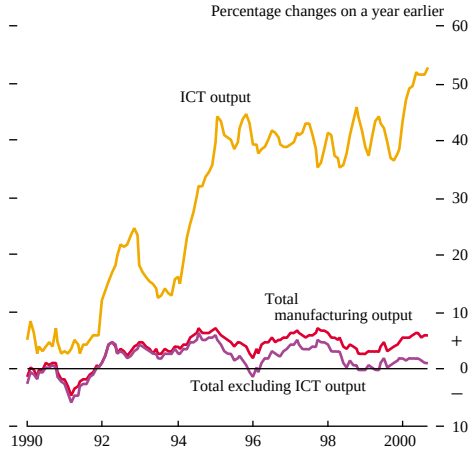
In the United States, quarterly GDP growth rose to 1.4% in Q2, from 1.2% in the first quarter (see Chart 4). Consumption growth slowed to 0.8% on the previous quarter, below the average quarterly growth rate of the previous year of 1.5%. Investment expenditure remained strong in Q2, despite slowing construction. Inventories and government spending, which have both been volatile in recent quarters, made strong contributions to quarterly GDP growth. In contrast, net exports continued to contribute negatively to quarterly GDP growth. According to the advance estimate, GDP growth slowed to 0.7% in Q3, partly reflecting a slowing of investment growth and a fall in government spending.

Consumption recovered somewhat in the third quarter, with the quarterly rate of consumption growth rising to 1.1%. However, consumer confidence fell in October to its lowest level in a year, perhaps reflecting equity price volatility. The determinants of US consumption growth are considered in more detail in the note on pages 348–50.

One of the notable features of the second quarter, and indeed the current US upturn overall, has been the strength of investment, which has been consistently stronger than historical relationships would have predicted. Recent work at the Federal Reserve Board(2) suggests that this is because of a strong increase in information and communications technology (ICT) investment (see Chart 5), driven by rapidly declining prices. The rise in ICT investment has been associated with increased capital deepening(3)—an increase in

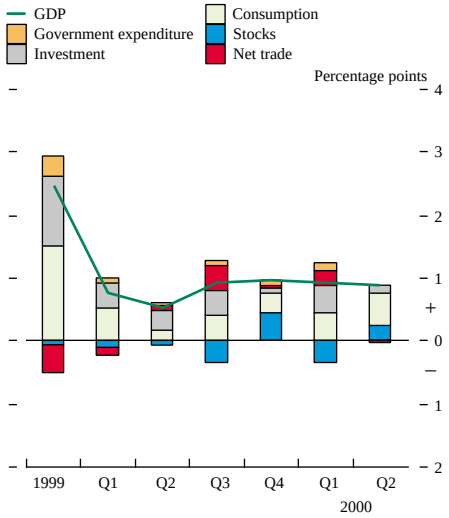
(1) 'Outlook and risk assessment of the economy and prices', Bank of Japan, Tokyo, 31 October 2000.
(2) 'Explaining the investment boom of the 1990s', Tevlin, S and Whelan, K, Federal Reserve Board, March 2000.
(3) See, for example, 'The resurgence of growth in the late 1990s: is information technology the story?', Oliner, S and Sichel, D, Federal Reserve Board, May 2000.

Chart 6
US manufacturing growth



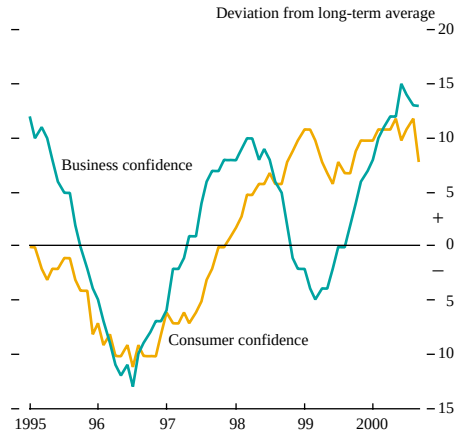
Source: Primark Datastream.

Chart 7
Euro area: contributions to GDP growth



Source: Primark Datastream.

Chart 8
Euro-area business and consumer confidence



Source: Primark Datastream.

capital stock per worker. Capital deepening has contributed to the pick-up in productivity growth since 1996. This has led the Federal Open Market Committee to note that 'an apparent continued acceleration in underlying productivity was boosting the economy's potential output growth'.(1) The annual rate of non-farm labour productivity growth rose to 5.3% in Q2, the highest rate since 1973 Q1.

Manufacturing production has continued to be driven by ICT-related sectors (see Chart 6).(2) Manufacturing output rose by 0.8% in the third quarter. But excluding ICT-related sectors, manufacturing output fell by 0.5%. Industrial confidence, as measured by the National Association of Purchasing Managers' index, has fallen further, to stand at 49.9 in September—a level that historically has been associated with falling manufacturing output.

Euro area

Euro-area GDP grew by 0.9% in the second quarter, similar to growth in the previous three quarters (see Chart 7). Final domestic demand contributed 0.6 percentage points to quarterly growth in Q2. Stocks contributed 0.3 percentage points to growth, reversing the negative contribution of the first quarter. Government consumption was flat in Q2, as were net exports, despite the continued depreciation of the euro. The recent fall in the euro-area trade surplus is discussed further in the 'external balances' section of this article.

Indicators of activity in Q3 have been more mixed. Euro-area consumer confidence fell in September, albeit from a high level, perhaps reflecting the effects of oil price rises and the associated protests (see Chart 8). And euro-area business confidence has fallen (see Chart 8), particularly in Germany, where the IFO index of industrial confidence fell to 98.0 in September from 102.0 in May. This contrasts with German industrial orders data, however, which have remained robust.

The previous *Quarterly Bulletin* noted that during the past three years, German and Italian growth rates have been weak relative to the euro area overall. Growth in both these countries was robust in Q1, but in Q2 their growth rates diverged sharply, with quarterly German growth rising from 0.8% to 1.1% but Italian growth falling from 1.1% to 0.3%. French quarterly growth remained at 0.7%.

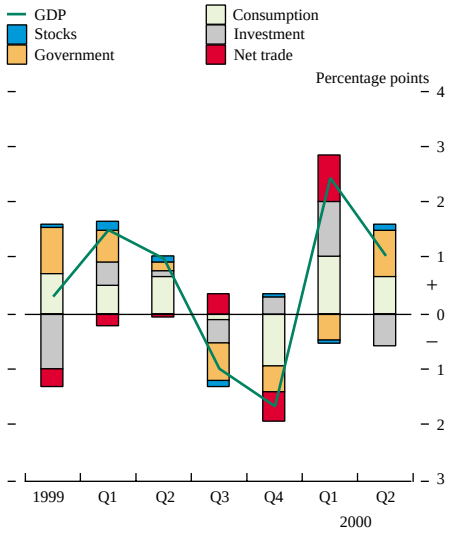
Japan

In Japan, the economy continued to recover in Q2, with GDP rising by 1.0% following a rise of 2.5% in the previous quarter (see Chart 9). As in Q1, growth was supported by private consumption, which rose by 1.1% on the quarter. Private investment spending was weak, but public investment was strong, rising by 13.6% on the quarter. Net exports were flat on the quarter.

In 1999, Japanese GDP rose strongly in both Q1 and Q2 but then fell in Q3 and Q4, with particularly weak contributions from private domestic demand. Prospects now seem better than a year ago, however. Corporate profits rose by 40% on a year earlier in 2000 Q2 (see Chart 10), and machinery orders have risen. Both

(1) Minutes of the Federal Open Market Committee, Washington DC, 22 August 2000.
(2) ICT is defined here as computers, communications equipment and semiconductors.

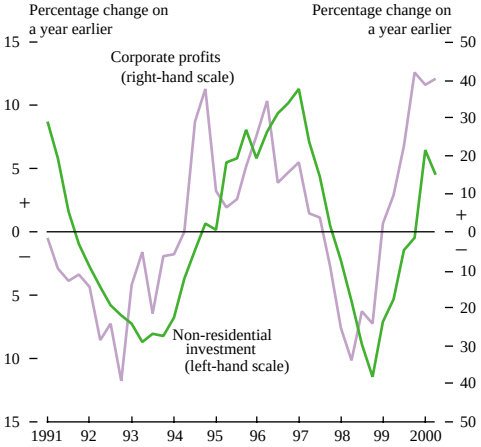
Chart 9
Japan: contributions to GDP growth



Note: Government includes both consumption and investment.

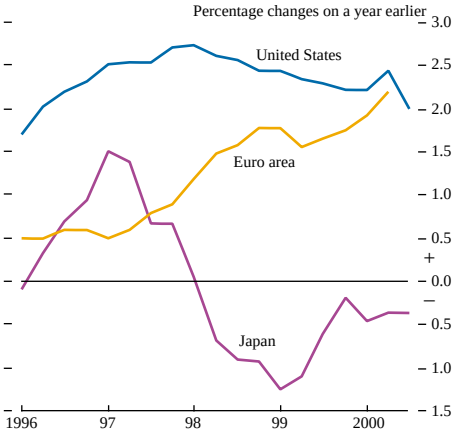
Source: Primark Datastream.

Chart 10
Japan: corporate profits and business fixed investment



Source: Primark Datastream.

Chart 11
Employment growth



Sources: Primark Datastream and Eurostat.

orders and production data suggest that in Japan, as in the United States, ICT sectors are driving manufacturing growth. Indicators of consumption remain more mixed than for investment, though the rate of decline of nominal wage income has eased since last year. One issue is the degree to which the fiscal stimulus seen in the second quarter has continued into the second half of the year. Although the Japanese authorities have announced plans for a further supplementary budget, involving additional expenditure of ¥3.9 trillion, the effects of this are unlikely to feed through until 2001.

The Bank of Japan Tankan Survey for September showed an improvement in business conditions for the seventh consecutive quarter. The number of corporate bankruptcies has risen during the past year, but the number of new business start-ups has also risen, suggesting that this reflects a pattern of industrial restructuring, as well as weak demand. Japan's potential growth over the longer term will partly depend on the success of economy-wide corporate restructuring in reallocating resources to the most productive sectors.

Labour markets

Employment and unemployment

Employment growth has continued to moderate in the United States (see Chart 11). Private sector payrolls increased by a monthly average of 154,000 in Q3, compared with monthly averages of 212,000 since 1995 and 175,000 during 2000 so far. It remains unclear whether this reflects easing labour demand growth or constraints in raising labour supply. The indicators do not show a clear picture; for instance, the Conference Board's help-wanted index has fallen, but the Manpower employment outlook survey rose over the third and fourth quarter of 2000, showing the strongest year-end demand in its 25-year history. The unemployment rate fell to 3.9% in September. With the exception of a similar outturn in April, unemployment has not been this low since January 1970.

In the euro area, employment growth has been revised up for the period since 1991, reflecting the inclusion of German part-time workers. Employment growth increased further in the euro area in Q2, rising by 2.2% on a year earlier (see Chart 11). The euro-area unemployment rate stood at 9% in August for the third consecutive month, compared with an average of around 10% in 1999. In Japan, the unemployment rate stood at 4.7% in September, unchanged from the June figure. The annual rate of decline of Japanese employment has been stable in recent months (see Chart 11), and the job offers to applicants ratio has risen.

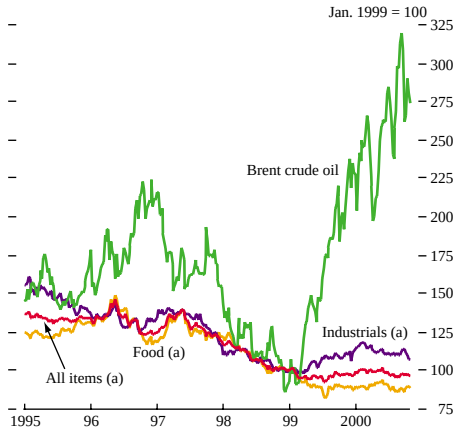
Labour costs

In the United States, labour cost pressures have remained subdued. Hourly compensation has remained robust, rising by 4.7% in the year to Q2. But this has been more than offset by the strength of productivity growth, so that in Q2 the annual growth rate of unit labour costs fell below zero for the first time since 1984 Q1.

Euro-area annual hourly whole-economy labour costs growth(1) rose to 3.7% in Q2 from 3.6% in Q1, remaining above the average

(1) Excluding agriculture, public administration, education and health.

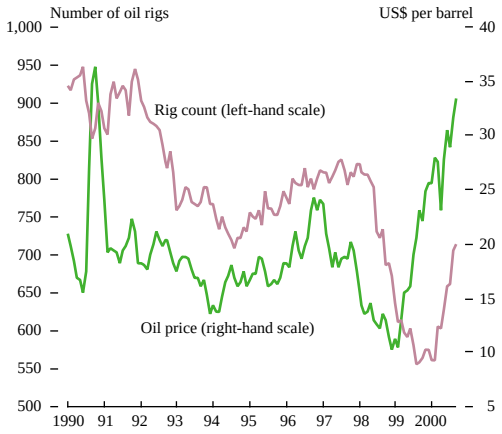
Chart 12
Commodity prices



Source: Primark Datastream.

(a) The *Economist* index, all items and industrials excluding oil.

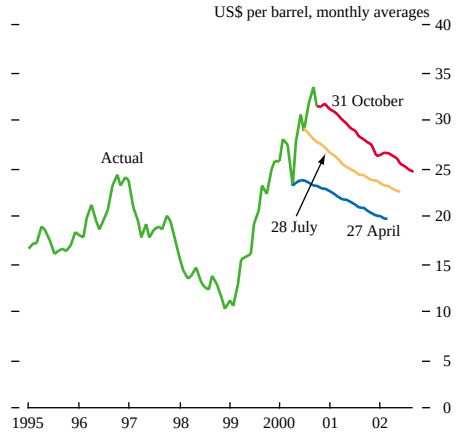
Chart 13
Rig count(a) and the oil price



Sources: Baker Hughes and Primark Datastream.

(a) Oil rigs outside the United States.

Chart 14
Oil futures



Source: Bloomberg.

annual rate of 2.4% in the second half of 1999. But the annual growth rate of euro-area whole-economy unit labour costs remained subdued in Q2 at 0.5%. Japanese unit labour costs in manufacturing remained weak, falling by 7.3% in the year to August.

Prices

Commodity prices

Oil prices have risen further since the previous *Quarterly Bulletin*: the price was $31.3 per barrel for Brent crude on 31 October, compared with $26.7 per barrel on 28 July (see Chart 12). The Brent price peaked at $37.6 per barrel on 7 September, but has since fallen back following a number of positive announcements on supply. In September, members of the Organisation of Petroleum Exporting Countries (OPEC) agreed to increase production further by 800,000 barrels per day, bringing their production quotas to a total of 26.2 million barrels per day. Production quotas were 23.0 million barrels per day at their low point in 1999. Also, the US Department of Energy announced the release of 30 million barrels of oil from its Strategic Petroleum Reserve, amid concerns about low inventories of heating oil in the United States and the impending winter. In late September, Saudi Arabia announced its readiness to increase supply in order to bring the price back towards OPEC's preferred band of $22–$28 per barrel.

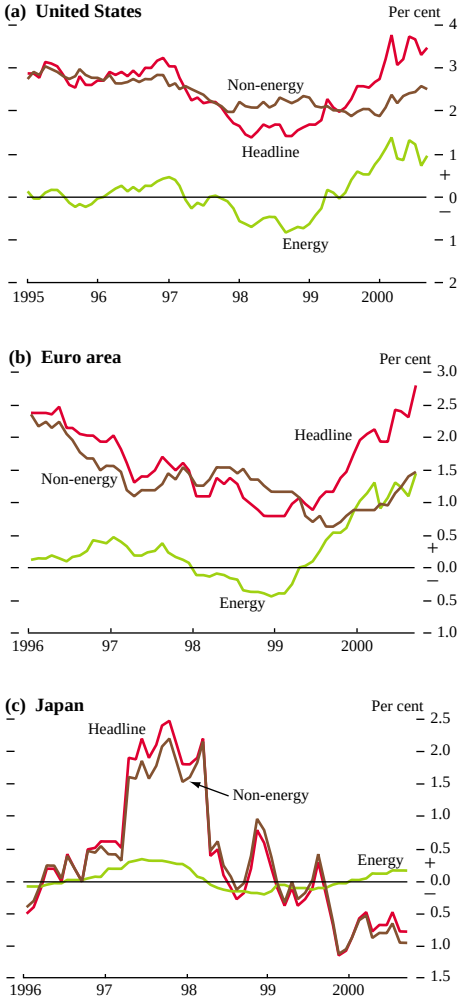
It seems likely that the rise in oil prices since 1999 reflects shifts in both the demand for and supply of oil. As oil prices fell to historically low levels in late 1998 and remained weak in early 1999, oil industry investment and oil production were cut back. Since then, world GDP growth projections have been revised upwards, implying that the demand for oil may have strengthened by more than market participants expected. Oil production has subsequently risen, albeit with a lag, and oil industry investment has begun to recover, as evidenced by the increasing number of operative oil rigs (see Chart 13). Nonetheless, there are lags before this new capacity comes on-stream. In the meantime, short-term supply constraints are close to being reached in the oil industry, with the refinery sector operating at high rates of capacity utilisation, and with low spare OPEC production capacity (non-OPEC oil-producing countries typically do not maintain spare production capacity). Moreover, inventories have fallen to a low level. Given the outlook for oil demand and supply, most market participants expect the price of Brent crude to fall to around $25 per barrel during the next two years. This is reflected in the futures curve for 31 October, which shows price increases in contracts for all delivery dates since the previous *Quarterly Bulletin* (see Chart 14).

Non-oil commodity prices have remained subdued since the previous *Quarterly Bulletin*. Industrial commodity prices have fallen by 3% and food commodity prices have risen by 1% (see Chart 12). This suggests that the rise in oil prices since the August *Quarterly Bulletin* reflects, to a considerable degree, industry-specific supply factors.

Producer prices

In the United States, producer price inflation has fallen from its recent peak in March. Producer prices rose by 3.3% in the year to

Chart 15
Contributions to CPI inflation



Sources: Primark Datastream and Eurostat.

Table C
Forecasts for CPI inflation

Per cent

	IMF (a)				Consensus Economics (b)			
	2000		2001		2000		2001	
United States	3.2	*+0.7*	2.6	*+0.1*	3.3	*+0.1*	2.7	*+0.1*
Japan	-0.2	*-0.3*	0.5	*-0.4*	-0.6	*-0.2*	-0.1	*-0.1*
Euro area	2.1	*+0.4*	1.7	*+0.1*	2.2	*+0.3*	2.0	*+0.3*
North East Asia (c)					1.0	*-0.1*	2.3	*+0.0*
South East Asia (d)					2.8	*-0.3*	4.5	*+0.2*
Latin America (e)					6.9	*-0.1*	5.8	*+0.0*
Eastern Europe (f)					24.9	*+1.3*	15.6	*+0.6*

(a) IMF *World Economic Outlook*, September 2000; (differences from May 2000 in italics; percentage points).
(b) *Consensus Forecasts*, October 2000; (differences from July 2000 in italics; percentage points).
(c) Peoples' Republic of China, Hong Kong SAR, South Korea and Taiwan.
(d) Indonesia, Malaysia, Singapore, Thailand and the Philippines.
(e) 14 countries, including Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.
(f) 19 countries, including the Czech Republic, Hungary, Poland, Russia and Turkey.

September. Core producer price inflation, which excludes food and energy, fell in September to 1.2%. Euro-area producer price inflation stood at 5.6% in August for the third consecutive month, continuing to reflect strong intermediate goods price inflation. In Japan, the domestic wholesale price index fell by 0.1% in September and rose by 0.1% on a year earlier, with rises in energy prices offsetting continued falls elsewhere.

Consumer prices

Recent oil price rises have been reflected in inflation rates in the major industrialised economies to a varying degree (see Chart 15). Inflation has fallen in the United States since the previous *Quarterly Bulletin*, reflecting a fall in energy price inflation, partly because of earlier energy price increases at a similar stage in 1999. But in the euro area, energy price inflation has risen further. Non-energy inflation rates have risen in the United States and, more notably, in the euro area. This may partly reflect the indirect effect of oil price rises. A key concern for the inflation outlook is whether oil price rises become embedded in inflation expectations.

In the United States, headline consumer price inflation fell from 3.7% in June to a low of 3.3% in August, and then rose to 3.5% in September. And non-energy inflation has risen slightly to stand at 2.6% in August and September, the highest rate in over three years. Euro-area headline inflation rose to 2.8% in September, its highest rate since May 1994, and above the maximum inflation rate that the ECB considers consistent with price stability (2%). The European Commission's survey of consumer price expectations has risen since the previous *Quarterly Bulletin*. Non-energy inflation rose to 1.6% in September, continuing the upward trend seen during 2000 so far.

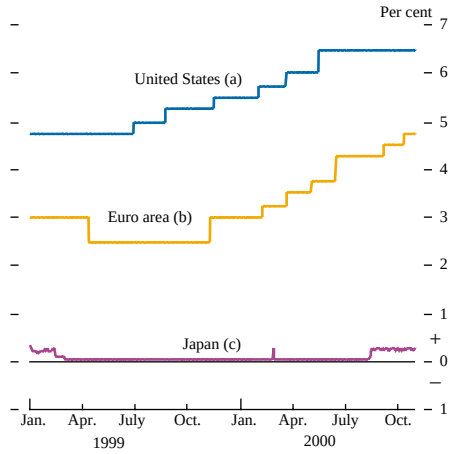
In Japan, headline consumer prices were 0.8% lower in September than a year earlier. Deflationary pressures have been strongest for consumer goods prices, which fell by 1.5% in the year to September; service prices have been broadly stable in the past year. This difference may partly reflect differing trends in productivity growth, as well as the effect of lower imported goods prices because of the appreciation of the yen. Consumer energy prices in Japan have risen by less than in the United States or euro area, perhaps reflecting increasing competitive pressures in the Japanese economy.

Inflationary pressures have remained muted in emerging Asian economies, despite rising oil prices. But higher oil prices are likely to add to the inflationary risks from rising capacity utilisation rates in the region, and inflation rates are expected to rise in 2001. In Latin America, inflation rates have remained stable, but continue to show substantial divergences between countries, reflecting different demand conditions.

Looking forward, the IMF has revised upwards its forecast for inflation in the United States in 2000 from 2.5% to 3.2% (see Table C).[1] But the IMF now expects Japanese consumer prices to fall overall in 2000, before rising in 2001. The IMF has raised its forecast for euro-area inflation, to 2.1% in 2000 and to 1.7% in 2001. Consensus Economics has also raised its forecast for

(1) IMF *World Economic Outlook*, September 2000.

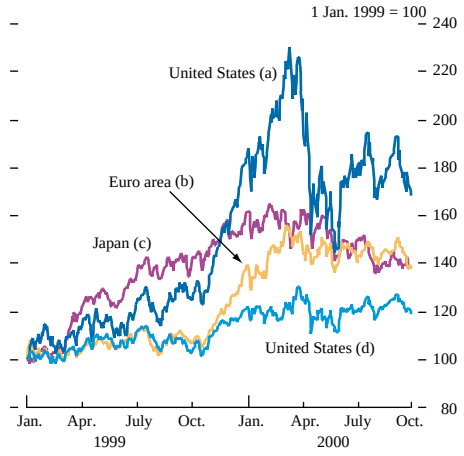
Chart 16
Official interest rates



Source: Primark Datastream.

(a) Federal funds target rate.
(b) Refinancing rate.
(c) Uncollateralised overnight rate (market rate).

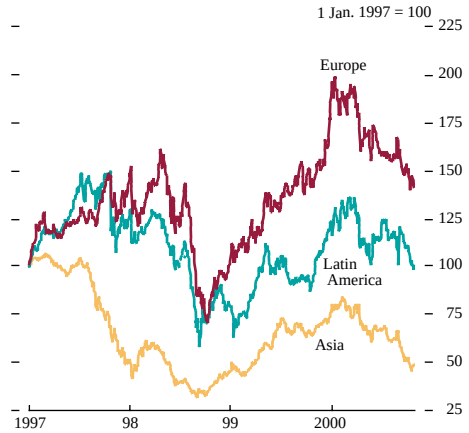
Chart 17
Equity indices



Sources: Primark Datastream and Bloomberg.

(a) Nasdaq.
(b) Euro Stoxx.
(c) TOPIX.
(d) Wilshire 5000.

Chart 18
Emerging market equity indices (US$)



Source: Morgan Stanley.

euro-area inflation for both 2000 and 2001, projecting inflation of 2.0% in the second year. Consensus forecasts for inflation in 2000 in the emerging regions have fallen since July (see Table C), with the exception of Eastern Europe. But projections for emerging market inflation in 2001 have been raised, perhaps reflecting the further recent rise in the oil price.

Monetary policy and financial markets(1)

Official interest rates have increased by 0.5 percentage points in the euro area since the August *Quarterly Bulletin*. The zero interest rate policy has been lifted in Japan. In the United States, the Federal funds target rate has remained unchanged at 6.5% (see Chart 16). Interest rate futures suggest that many market participants now expect US interest rates to fall during the first half of 2001. Government ten-year bond yields have fallen in the United States, have risen in Japan, and have remained little changed in the euro area over the period.

The ECB has raised its refinancing rate to 4.75% since the previous *Quarterly Bulletin*. Rates were raised by 0.25 percentage points on both 31 August and on 5 October. These increases followed an earlier rise of 0.5 percentage points on 8 June (see Chart 16). The ECB explained its October decision as aimed at ensuring that consumer price pressures, 'mainly from oil prices and the exchange rate of the euro', do not result in more permanent inflationary tendencies, noting also that M3 growth remained above its reference value alongside strong credit growth.(2) The ECB pointed to broadly similar factors in explaining its August rate rise. Official interest rates in the euro area have risen by 2.25 percentage points since November 1999. Interest rate futures contracts suggest that the market expects a rise in official rates to 5% by the end of the year.

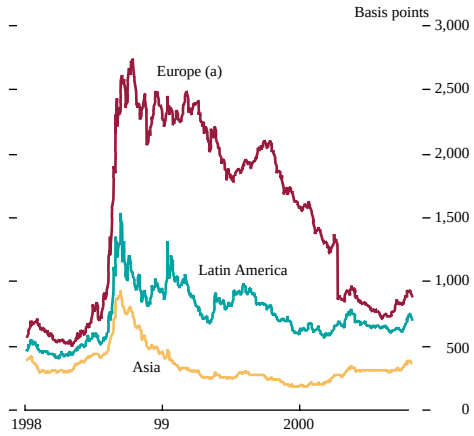
The Bank of Japan (BoJ) raised its target for the uncollateralised overnight call rate to 0.25% on 11 August (see Chart 16). This ended the zero interest rate policy that had been in place since February 1999. The BoJ noted that 'Japan's economy has reached the stage where deflationary concern has been dispelled, the condition for lifting the zero interest rate policy.'(3) The rate rise has been reflected by increases in interest rates across the Japanese yield curve.

Equity prices have been volatile in the major markets since the August *Quarterly Bulletin*, particularly in the high-technology sectors (see Chart 17). In the United States, volatility has partly reflected concern about corporate profits and, perhaps underlying this, the possible effects of oil price rises. Quarterly growth of US post-tax corporate profits(4) slowed to 2.1% in Q2 from 5.4% in the first quarter. In the United States and the euro area, corporate bond spreads have widened, particularly for high-yield bonds.

In emerging markets, financial conditions have tightened. Equity indices have continued to fall, particularly in Asia where stock prices are 38% lower than at the start of the year (see

(1) For details on movements in foreign exchange, equity and bond markets see the 'Markets and operations' article on pages 321–38.
(2) ECB *Monthly Bulletin*, Frankfurt, October 2000.
(3) Bank of Japan press release, Tokyo, 11 August 2000.
(4) National Accounts measure.

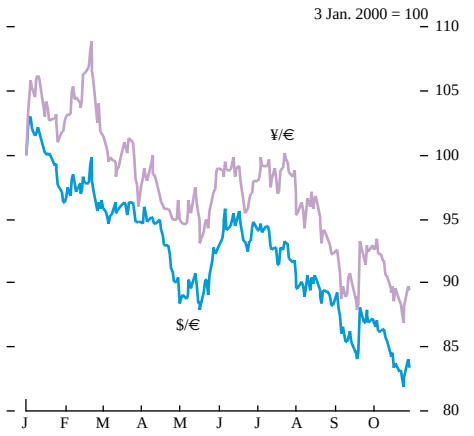
Chart 19
Sovereign bond yield spreads by region



Source: J P Morgan.

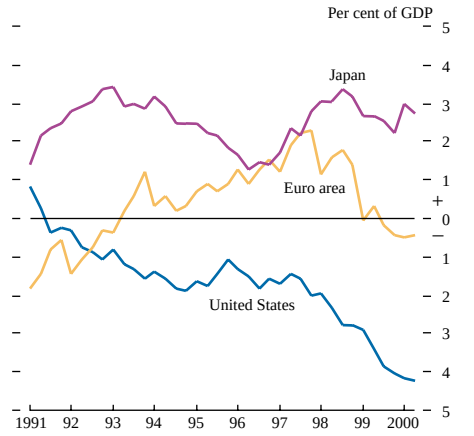
(a) Russian principal loans and interest rate arrears loans (both restructured commercial bank loans) were taken out of the index on 14 April and replaced by eurobonds to be issued in exchange.

Chart 20
Euro exchange rate



Source: Primark Datastream.

Chart 21
Current account balances



Source: Primark Datastream.

Chart 18). This reflects concerns about the pace of corporate restructuring in some markets, but may also reflect the possible effect of oil price rises on corporate profits. Since the August *Quarterly Bulletin*, spreads over US Treasuries have risen in the emerging markets, though they remain well below levels achieved during the emerging market crisis period (see Chart 19).

The euro has depreciated by around 9% against both the US dollar and the Japanese yen since the previous *Quarterly Bulletin* (see Chart 20). The ECB announced concerted central bank intervention in the foreign exchange markets on 22 September, in response to 'shared concern about the potential implications of recent movements in the euro exchange rate for the world economy'.(1) The euro initially appreciated in response, but then fell to reach a record low against both the US dollar and Japanese yen on 26 October. By the end of the period the euro had recovered to around pre-intervention levels against both currencies.

External balances

In the United States, the current account deficit widened further to 4.3% of GDP in 2000 Q2 (see Chart 21). The rate of increase has slowed in 2000, however, partly reflecting the effect on US exports of the global recovery. The Japanese current account surplus fell from 3.0% of GDP in 2000 Q1 to 2.8% in Q2. In the euro area, the current account has moved from surplus to deficit in recent years, despite the depreciation of the euro. Much of the weakness in the current account during the past year is explained by the effect of oil price rises on import values. And strong euro-area domestic demand may have boosted imports.

Current account surpluses persist across non-Japan Asia, though are projected to fall as domestic demand growth picks up and external demand moderates. By contrast, sizable current account deficits persist in Latin America. Since the May *World Economic Outlook*, the IMF has doubled the projected current account surplus for 2000 for the Middle East and non-transitioning emerging European countries(2) to $44 billion, reflecting the effect of increased oil prices.

(1) ECB press release, Frankfurt, 22 September 2000.
(2) Cyprus, Malta and Turkey.

Wealth effects on consumption in the United States

During the past five years US real net financial wealth has risen by around 64%, while the strength of consumption has reduced the savings rate to near zero from around 5½%. Net wealth increases should lead consumers to raise their spending, but the likely size of the effect is unclear. This note looks at the size and distribution of household wealth in the United States, and assesses the empirical evidence for wealth effects on US consumption. This work suggests significant effects on consumption from both financial and housing wealth. Nevertheless, US consumption since 1999 seems to have been stronger than would be expected on the basis of historical relationships.

The theoretical role of wealth in consumption

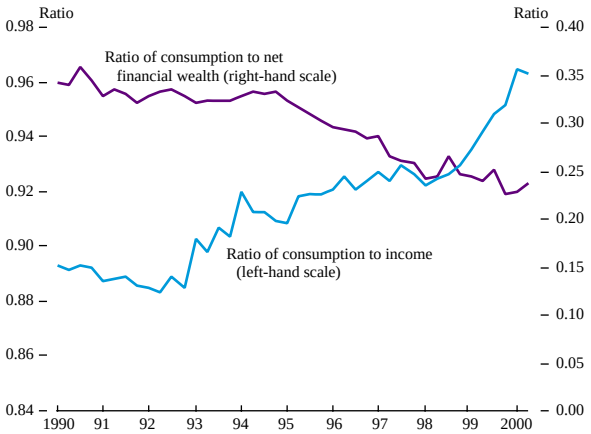
One widely used theory of household consumption is the life-cycle/permanent income model. Under this theory households look not at just their current income when deciding how much to spend, but also at other available resources in the form of their physical and financial wealth and their future likely income. So they will save when current income is unusually high and borrow when it is unusually low. An unexpected increase in wealth, say from a rise in equity or house prices, will not be spent at once, but spread over the consumer's lifetime. But increases in housing wealth may have different implications for consumption compared with financial wealth, partly because a rise in house prices also raises the costs facing first-time buyers or those trading up to larger properties, which may curb overall non-housing expenditures. Housing wealth could have indirect effects on non-housing expenditures, however, for example by affecting the spending of those who need to use their house as collateral against borrowing, or for those who find the cost of borrowing on unsecured loans too high.

Empirical evidence

US real net household financial wealth rose by 64% during the five years to 2000 Q2. In the same period, real consumption rose by 24%, well above the rise in real disposable income of 18%. As a result, the ratio of consumption to income has increased, while the ratio of consumption to net financial wealth has fallen (see Chart A). The savings ratio has fallen to around zero.

The effects of rising net financial wealth may depend on its distribution (see Table 1). Wealth effects on consumption might be expected to be larger for lower-income households, as they tend to have a higher marginal propensity to consume. The results of the Survey of Consumer Finances(1) show that the share of US households holding equity wealth increased from 31.6% in 1989 to 48.8% in 1998, with the figure rising across all income groups. But the distribution of wealth remains heavily skewed towards higher-income groups. And the median real value of equity wealth in the lowest-income group has fallen by around 15% since 1989. This may have reduced the effect of wealth increases on consumption relative to a more even distribution of financial wealth gains.

Chart A
US consumption



Source: Primark Datastream.

The effect of an increase in equity wealth may also have been reduced by an increase in the proportion of equity wealth held indirectly, eg as pensions. Households may not view these long-term savings as disposable wealth for consumption, or may be less aware of the value of these holdings. Between 1989 and 1998 the share of total equity held in pension funds rose from 25.4% to 32.9%.

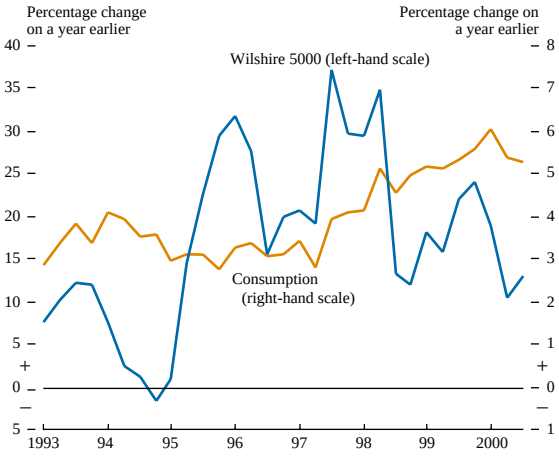
Table 1
Distribution of US household equity wealth

Household income	Percentage of households holding equity		Median real value of holdings (1998 US$ '000s)		
	1989	1998	1989	1998	Percentage change
<$25,000	9.1	19.0	9.5	8.0	-15.8
$25,000–$50,000	31.5	52.7	6.0	11.5	91.7
$50,000–$100,000	51.5	74.3	10.2	35.7	250.0
$100,000–$250,000	82.3	90.0	45.8	121.5	165.3
>$250,000	79.1	95.6	366.7	524.5	43.0

Source: Bertaut and Starr-McCluer (2000).

(1) 'Household portfolios in the United States', Bertaut, C and Starr-McCluer, M, Federal Reserve Board, April 2000.

Chart B
US consumption and equity prices



Source: Primark Datastream.

Housing wealth has been rising less quickly than financial wealth (see Chart C). But many US households, particularly lower-income households, continue to hold most of their wealth in the form of housing: housing wealth accounts for more than 50% of total wealth in the bottom three wealth quartiles, compared with just 20% for the top wealth quartile. So any housing wealth effects may be more concentrated than financial wealth effects on lower-income households, who are generally thought to have higher marginal propensities to consumer than higher-income households.(1)

Chart C
US wealth accumulation

Sources: Primark Datastream and Bureau of Economic Analysis.

An econometric equation for US consumption

Estimating a simple consumption function may help to determine the importance of different factors in explaining recent consumption patterns. This note looks at the results of a simple econometric equation for consumption, based on the permanent income hypothesis. In the long run, consumption depends on income, wealth and the interest rate. The specification also includes short-run dynamic terms in income, the interest rate and, to capture consumer confidence effects, the unemployment rate.

The size and timing of wealth effects

The estimated wealth elasticity of consumption from the equation is 0.156 which, given the size of wealth, implies that an extra 3¼ cents is consumed for each extra dollar of wealth. This estimate for the wealth effect on US consumption is perhaps towards the lower end of the range of outside estimates, which are generally between 2 and 7 cents per dollar.(2) The May *Quarterly Bulletin* reviewed the recent literature on wealth effects on US consumption.

When the equation is estimated using housing and financial wealth as separate variables, the coefficients for the two wealth terms—the estimated consumption elasticities—were statistically identical. But given the larger size of net financial wealth, this implies a marginal propensity to consume of around 6¼ cents in the dollar for housing wealth, compared with 2¼ cents for net financial wealth.

The equation also suggests that the lags between wealth and consumption are significant. Around a third of the long-run effect of a change in wealth is estimated to occur within one quarter. However, it takes eight quarters before 95% of the long-run effect has occurred.

Explaining recent consumption growth

The results of the equation may also be used to estimate the contribution to consumption growth from each explanatory variable. Chart D shows these contributions to annual consumption growth during the past 25 years. Income clearly dominates but, importantly, the contribution from wealth has increased significantly in the past four years. This is consistent with the sharp rise in equity prices flowing through to consumption over this period.

Chart E looks at the past five years on a quarterly basis. The equation residual becomes increasingly positive during 1999. This would suggest that under the parameters of the equation, recent increases in income and wealth have not been sufficient to explain the strength of consumption since the start of 1999. For 2000 Q2, the equation underpredicts annual consumption growth by around 2 percentage points.

While this may reflect noise in the data, an omitted variable, or some kind of recent structural parameter change, there are a number of other possible explanations. One is that the prolonged upturn in equity prices has led consumers to see more of these gains as permanent, and

(1) As noted in a speech by Chairman Alan Greenspan (November 1999), 'Mortgage markets and economic activity', at a conference on Mortgage Markets and Economic Activity, sponsored by America's Community Bankers, Washington DC.
(2) By contrast, Ludvigson, S and Steindel, C, 'How important is the stock market effect?', July 1999, Federal Reserve Bank of New York, finds no stable relationship between US wealth and consumption during the post-war period.

Chart D
Contributions to annual consumption growth; yearly basis

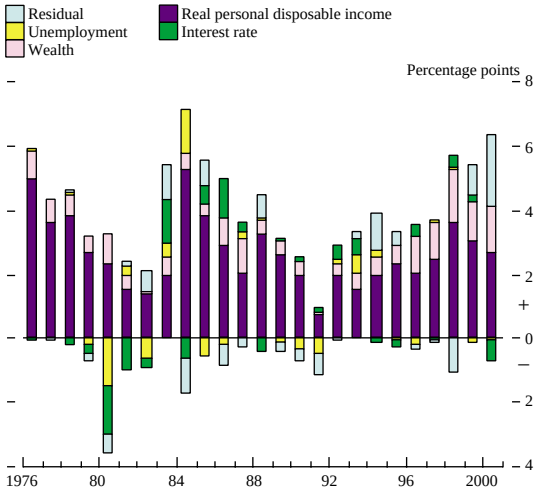


Chart E
Contributions to annual consumption growth; quarterly basis

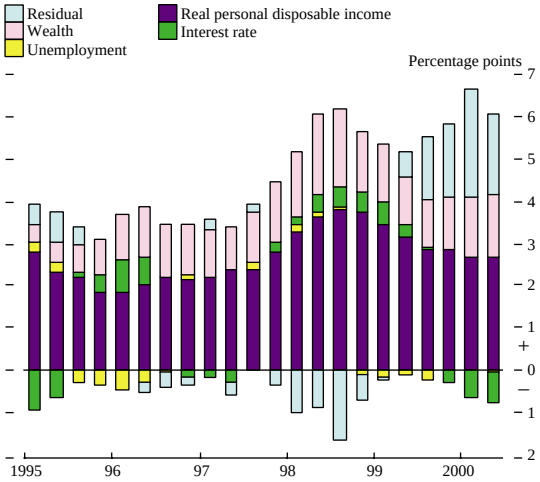
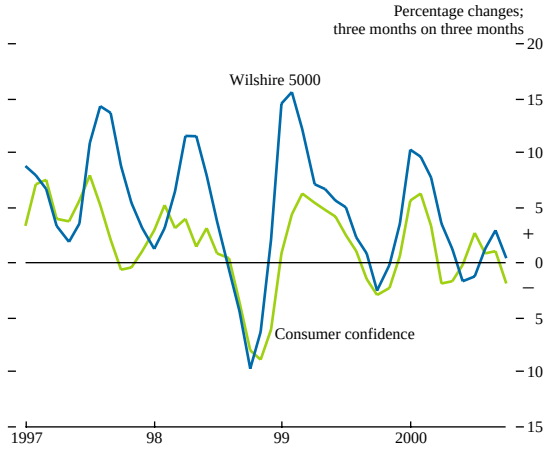


Chart F
US consumer confidence



Source: Primark Datastream.

hence to spend more out of wealth than has been the case in previous years. But there is little evidence of a direct relationship between financial wealth volatility and consumption. A more likely explanation is that households are consuming more of their income on the basis of some form of 'confidence' effect generated by the success of the economy and the strength of the stock market (see Chart F).[1] In particular, the acceleration of US productivity may have led to an upward revision to expectations of households' future earnings that has not been fully captured by the model.

In conclusion, we find evidence of significant effects from financial and housing wealth on consumption growth in the United States. Our estimate for the size of these effects falls within the range of estimates found by others, but is probably towards the lower end of that range. Further, the strong growth in consumption in 1999 and the first half of 2000 is higher than would be predicted based on the historical relationship between consumption, income and wealth.

(1) The unemployment rate has remained fairly flat since 1999, and so may have become a less accurate proxy for consumer confidence. However, including a confidence measure explicitly in the equation does not eliminate the positive residual in 1999.